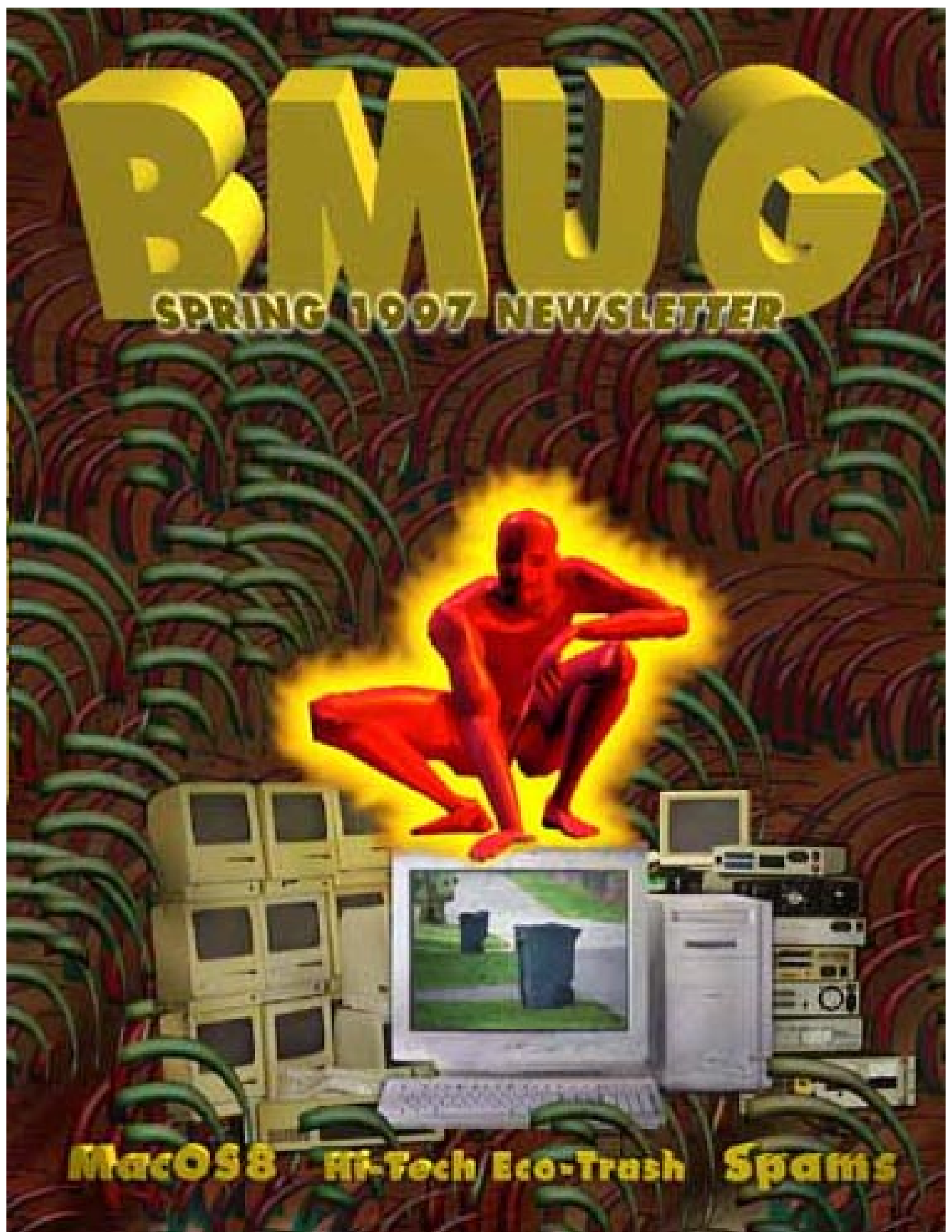
BMUG

SPRING 1997 NEWSLETTER



MacOS 8 Hi-Tech Eco-Trash Spams

The BMUG Newsletter

Spring 1997 — Volume XIII, No. 1

BMUG, Inc.
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Berkeley, CA 94709-1496

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The BMUG Office is located at:
2055 Center Street, Downtown Berkeley

NEWSLETTER ARTICLE SUBMISSIONS

BMUG accepts Newsletter article submissions all year round. If your submission is published you will receive a six-month membership to BMUG.

Submissions can be in any common word processor format, but Microsoft Word version 5 is preferred. For article guidelines see the folder on the Newsletter CD-ROM, the Newsletter conference on Planet BMUG, BMUG Boston, or BMUG's forum on America Online. Submissions should have minimum styles; italics and bolds are fine. All submissions should be made electronically (via email or disk). The deadline for the Spring 1997 issue is May 1, 1997.

Send submissions to: BMUG Inc, Newsletter Submissions, 1442A Walnut St. #62, Berkeley, CA 94709-1496. Or email them to: publisher@bmug.org

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As a nonprofit organization BMUG provides a variety of services that are free to the community. BMUG members also donate older computers for placement in the homes of low-income families. To support these efforts BMUG members have contributed to the BMUG SuperHero Fundraising drive. THANK YOU to all of the BMUG SuperHeros listed below:

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BMUG would also like to thank the printer of our Newsletter, Consolidated Printers of Berkeley, California, who have printed the BMUG Newsletter for many, many years, and provided us with the high quality product you see in your hands today.

A special thank you to our many members who have made matching or other donations to help BMUG's fundraising drive. If you are interested in participating in the BMUG SuperHero program please call the office for details. BMUG SuperHeros may either receive a Lifetime membership or take a tax-deduction for their contribution.

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Patricia Yarrow
James Yee
Naoko Yokote
and many others…

DEDICATION

As a nonprofit organization BMUG is reliant on the many, many volunteers who help with everything from staffing helpline clinics, to stuffing envelopes, to approving files on the BBS. There is one group of volunteers,however, who are almost invisible to our many members, but whom BMUG relies on to ensure its very existence. That group is the BMUG Board of Directors.

Like most nonprofit organizations BMUG is governed by a volunteer board of directors. This group is charged with developing the long-term vision for the organization, and for hiring and evaluating the Executive Director who is responsible for the implementation of a plan to reach the goals set by the board. These are difficult tasks, made ever more difficult by the rapidly changing computer industry. But the BMUG Board of Directors has more than met this challenge.

The past couple of years have been particularly challenging as BMUG changed Executive Directors and Apple Computer was plagued by large losses and clonemakers stepped into the fray with the licensing of the Macintosh operating system. This Newletter is dedicated to Fred Swan, who has served as the chair of the BMUG Board of Directors for the last two years, leading BMUG through difficult times to its present incarnation as the largest computer user group in the world.

As a student at University of California at Berkeley Fred came to his first BMUG meeting with a friend before he even owned a Macintosh. After graduation Fred found work in the computer industry and was soon back at BMUG Main Meetings making presentations as a vendor. After that he came to the Main Meeting every week. Soon he was asked to participate in Core, a group of dedicated BMUG volunteers.

In 1991 Fred was elected to the BMUG Board of Directors. In 1994 Fred was elected chair of the board. Fred served two terms as board chair, and has proven to be a wise and able leader. During Fred's tenure BMUG hired a new Executive Director, dramatically improved services, and increased membership. Under Fred's leadership the board also began a strategic planning process to ensure that BMUG meets the needs of its present and future membership.

BMUG is a better and larger organization due to Fred's efforts. It is not possible to to repay him for his contribution, and we hope this dedication will in some small way express our gratitude for his work on behalf of BMUG.

PLANET BMUG & BMUG BOSTON

BMUG ONLINE MEMBERSHIP SERVICES

PLANET BMUG BBS: (510) 849-2684
BMUG BOSTON BBS: (617) 275-3062

One of the privileges of BMUG membership is access to our online community of over 6000 BMUG members.

Planet BMUG, our Berkeley-based BBS, and BMUG Boston, our sister BBS on the East Coast, feature over 35 lines and hundreds of popular conferences. Both BBSes are also now available via TCP/IP for those members with an Internet Service Provider.

SO WHICH BBS SHOULD I USE?

BMUG members can opt to use either of our BBSes, but not more than one. Although many of the conferences are gatewayed (mirrored), each BBS has its own style. We suggest you use whichever will be kindest to your pocketbook.

HOW TO GET ONLINE WITH BMUG VIA MODEM:

Complete instructions for creating and using your BMUG BBS acount can be found in the article called "How To Get Online with BMUG," at the beginning of the Telecom section in this Newsletter. In the meantime, here are the basics:

1. You get the FirstClass Client; SoftArc:FirstClass Client; FirstClass Client software when you join BMUG either via a floppy disk or via the Newsletter CD-ROM.
2. Launch the FirstClass application and modify the settings file for your modem, add the BMUG BBS phone number, and type in a UserID and password (you make these up yourself). Be sure to remember them.
   - The Client software comes with the modem settings files for most modems. You can select yours from the pop-up menu of modem types.
   - Be sure you have the correct phone number for the BBS you've selected, and remove the area code if you don't need it to reach the BBS.
3. Once you've configured and saved your settings file, click the Login button, and it will dial the BBS for you.
4. Once connected, fill out the auto-registration screen that greets all new users. You don't get that much time to fill it out, so please fill it out quickly and completely. Oh—and make sure you use the same information you gave us when you joined BMUG. When you're ready, hit the Register button.
5. Now that you're online, find your way to the Request Validation folder (in New User Info), open it, and create a new message requesting validation (for the account you just created). You can create a new message by typing Command-N, and send it by typing Command-E.
6. It will take the Validation Volunteers a few days to check your request against our database of members. In the meantime you'll have 25 minutes a day to look around.
7. If you have any problems along the way, check the Tips on the following pages, check the article in the Telecom section of this newsletter, or call the BMUG Helpline at (510) 540-1742 and follow the instructions for pre-recorded BBS hints and tips.
8. Have fun!

INSTRUCTIONS FOR LOGGING ONTO PLANET BMUG VIA THE NET:

Complete Instructions for logging onto Planet BMUG and BMUG Boston via the Net can be found in the articles "Getting Online with BMUG Boston" and "How to get Online with BMUG via TCP/IP" at the beginning of the Telecom section in the Newsletter. In the meantime here are the basics:

1. Make certain you are using FirstClass Client 2.6 or higher for Macintosh or Windows. Only version 2.6 and up support IP connections. Version 2.7 for Mac and 3.0 for Windows are recommended.
2. Make certain your connection to the Internet is a PPP, SLIP, or better connection from a service provider with full-time Internet access. "Internet access" offered by online services such as America Online will not work.
3. Make a new copy of your FirstClass settings file for Planet BMUG or BMUG Boston. From the first screen, click on the "Setup" button and make these changes: First, substitute the appropriate IP address in the Server field of the connection setup window. The IP address for Planet BMUG is: bmug.org or 206.80.36.91. The IP address for BMUG Boston is: bmugbos.org or 198.69.254.236. Choose TCP-IP.FCP as your connection method.
4. With the connection setup window still open, press the Setup button beside the "Connect via" popup. On the next screen click on "Advanced Settings" and check the TCP port number. Change it to 3004 (it's 3000 by default). Save your changes. Make sure you click Save after you change the settings. If the port is left at 3000 (the default), the server will not allow you to log on to either Planet BMUG or BMUG Boston.
5. Initiate your local Internet connection. Once connected, press the Login button on the FirstClass Login screen. You will be connected to the site if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection-ternet connection and network traffic conditions.

THE BMUG HELPLINE

The BMUG Helpline is where BMUG members can:

- request a technical support callback from a Helpline volunteer.
- request a Helpline Clinic hardware appointment for upgrades, floppy and hard drive recoveries, internal modem and memory installations, etc.
- listen to pre-recorded tech tips and tricks.

THE HELPLINE PHONE NUMBER

The BMUG Helpline can be reached at **(510) 540-1742**.

Please allow up to 72 hours for a response—and please don't give the Helpline number out to non-members.

HELPLINE VOLUNTEERS

The Helpline receives hundreds of calls every week. Although we wish we had the volunteer power to answer each call as it comes in, the Helpline voicemail has been designed to take the sting out of requesting a callback by keeping it simple, and clear. In addition, please take advantage of our automated help system. We feel we have provided help for nearly any Macintosh problem you may encounter.

THE BMUG HELPLINE CLINICS

Helpline Clinics are held at the BMUG office, where BMUG members can come to get Mac technical support, hardware assistance (by appointment only), and product recommendations.

Clinics are staffed by enthusiastic volunteers, who enjoy helping others. Please let us know if you'd like to become a Helpline volunteer.

HELPLINE CLINIC HOURS

Helpline Clinics are currently offered on Wednesday, Thursday, and Saturday afternoons, from 1:00–5:00 p.m., and Monday evenings from 5:00–9:00 p.m. at the BMUG office.

BMUG ADDRESSES

The BMUG office can be found at 2055 Center St., in downtown Berkeley.

Please send all correspondence to:
BMUG, 1442A Walnut St. #62, Berkeley, CA 94709-1496.

Mac Problem Quick Fixes

Before You Go to the BMUG Helpline

by Robert Glick

As BMUG Helpline Coordinator, I've realized that a huge percentage of the hardware panic problems and frantic call to the BMUG Helpline can be easily and calmly solved with a minimum of effort and know-how. What follows is a schematic account of the most basic curveballs your Macintosh will throw at you, and how you, *without the aid of the Helpline*, can either solve these problems or affirm that your Macintosh has a serious illness.

Problems with Planet BMUG

Here are a few tips for successfully logging onto and navigating the BMUG BBSes in Berkeley, Boston, and the South Bay:

- Read your Newsletter and the New User Info on your FirstClass Client disk. There are articles in the Telecom section of the Newsletter that describe how FirstClass works, how to configure your modem settings, and how to ask for validation on the Bulletin Board.
- When you register for the first time, write down your User ID and password and put them in a safe place in case you forget them (remember, you make up your own UserID and password).
- Save a copy of your customized settings file to your Desktop. You can configure your FirstClass settings file by selecting the correct modem in the FirstClass setup screen, entering your User ID and password, and then selecting "Save as" to save a copy of this file to your Desktop. From that point on, if you double-click on this document, you will initiate the correct login process.
- Please register one time only. If for some reason, you have registered, and FirstClass asks you to register again the next time you log on, this means that you are using an incorrect User ID. You will not be validated if you create multiple accounts.
- If you were validated and, after not logging on for a while, FirstClass asks you to register again, do not fret. FirstClass software is designed so that if you do not log on for 100 days, the server will delete your account. This cleans up the system so there aren't five trillion validated users. In this case, please register and request validation as if you were registering for the first time.
- Remember to *request* validation. We need a message sent to the Request Validation folder in order to verify that you are a paid member of BMUG. If you do not send a message to the Request Validation folder after you register, you will not be validated.
- If you are having problems logging on during the weekends, this may happen because the BBS is undergoing regular maintenance and backup. Try again the next day or after a few hours.

Macintosh Emergencies

A Sad Mac or a Mac That Doesn't Chime on Startup

If you get the Sad Mac icon when you start your Mac, it probably means that you have corrupted system software or a corrupted device driver. Try to boot your computer from a floppy disk, such as the Disk Tools floppy that comes with your system software disks. If your computer boots with the floppy disk, you need to re-install your system software (see the section in this article on re-installing your system). If the problem does not disappear after booting with the Disk Tools floppy, you may have a corrupted hard disk driver. In this case, try to disconnect your SCSI devices. If you can successfully boot your computer without SCSI devices, then you may need to update a SCSI driver with a formatting utility such as the one included on the Disk Tools floppy disk.

If your Macintosh doesn't chime when you boot the computer, it means that there is a hardware problem that requires further assistance. Call the Helpline to investigate the problem, and make a Helpline appointment.

A Flashing Floppy Disk Icon on Startup

If you start your Macintosh and you see a floppy disk icon with a question mark, it generally means that your Mac is not booting off of the hard drive and cannot find a working System Folder. This does not necessarily mean that your hard drive has disappeared forever, but it does mean that your system software is probably corrupted. Before calling the Helpline, try re-installing your system software. If this does not work, call the Helpline for more assistance.

A Hard Drive That Does Not Appear on Your Desktop

- Disk First Aid recognizes your hard drive.

  Your hard drive may not appear on your Desktop for a variety of weird reasons. First, try to boot your Macintosh with the Disk Tools floppy disk that comes with your system disks, and run Disk First Aid. If Disk First Aid can find your hard drive, then you know that it is still hanging around. If Disk First Aid can't fix your problem, however, you should try to recover your data using a recovery program such as Norton Utilities, Public Utilities, or MacTools (we recommend the latter).
- Disk First Aid doesn't recognize your hard drive, and you have an Apple drive.

  If Disk First Aid can't find your hard drive, and you have an Apple drive, try running the Apple HD SC Setup program. You can find this program on your Disk Tools floppy disk. If Apple HD SC Setup doesn't see your Apple drive, you have a dead, deceased, and post-moribund hard drive. If Apple HD SC Setup does recognize your Apple drive, you may be able to update the driver and recover your data—instead of having to reformat your hard drive and lose all your data.
- Disk First Aid doesn't recognize your hard drive, and you have a non-Apple drive.

  If you don't have an Apple drive, you'll need to use a third party hard drive utility program such as Silverlining or Hard Disk Toolkit.
- Other adventures

  You can also try the following if your hard drive doesn't appear on your Desktop: Remove all external

SCSI devices from your Macintosh, and add them back in one at a time to see if you can isolate which SCSI device is giving you problems. In addition, try reseating all your cables. Sometimes a bad connection can cause your SCSI devices to act strangely or not to act at all.

If none of the above things work, call the Helpline, and we'll help.

Printing Problems

A g'zillion things can cause problems with printing. Here are some simple things to try before consulting a higher power.

- Make sure that all of your connections have power and are connected properly.
- Go to the Chooser in the Apple menu, and make sure that your Macintosh recognizes the printer.
- Check to see that the printer is connected to the proper port.
- If you think your problem has to do with fonts, try creating a new document in your application. Type a few things in this program with a basic font such as Helvetica, and print. If this works, your problem is with the particular font you are using.
- If you are sharing a printer on an AppleTalk network, make sure that everyone is using the same driver. If you use multiple drivers, printing will take forever and more.
- Sometimes printing problems happen because the computer confuses the serial ports. You can clear the serial ports by zapping the Parameter RAM (see the section on zapping Parameter RAM—known as PRAM—in this article). You zap the PRAM by holding down Command–Option–P–R while starting up your Macintosh. When your Mac chimes, let go of the keys and let it boot up normally.
- Some applications output PostScript files directly. If you see a message that says, "Cannot print due to PostScript error," try opening a new document. Cut only the things you need from your document with the error message, and paste into the new document. Save this file, and try printing.

  If none of this works, and you're fed up, call the Helpline.

Basic Macintosh Problem Solving

A Clean System Install

If you need to re-install your system software and are using System 6, you can install new system software over the existing system software. If you are using System 7, you need to do what is called a clean install.

To perform a clean install, boot your System 7 Macintosh using the Disk Tools floppy disk. In the System Folder on your hard drive, move the system and the Finder to the Trash. In the Preferences folder, move the file called Finder Preferences into the Trash as well. Empty the Trash. Once you have thrown out these three files—the system, the Finder, and the Finder Preferences—give the existing System Folder a new name, such as *Old System Folder*. This will ensure that you end up with a brand new System Folder and important files in your old System Folder will not be trashed.

After you trash the files and rename your old System Folder, you can restart your computer using the first of your system install floppy disks, and proceed with your System 7 installation.

Rebuilding Your Desktop

The Desktop file is an invisible file that keeps track of your icons, documents, and applications. Because the Desktop file can get confused, it is sometimes necessary to rebuild your Desktop. To rebuild your Desktop file, hold down Command–Option *after* all of your extensions and control panels have loaded, and *before* the Desktop appears. The system software will ask you if you want to rebuild the Desktop, and will inform you that all Get Info comments will be lost. Click the OK button and the Desktop file will be rebuilt. Note that while this is an effective way of rebuilding your Desktop, there are Shareware utilities on Planet BMUG that will rebuild your Desktop more thoroughly.

Zapping your Parameter RAM

Parameter RAM, also known as PRAM, is where your Macintosh keeps track of settings defined by the user, such as time of day, mouse speed, keyboard repeat rate, and startup driver preferences.

If you are using System 6, you can zap your PRAM by holding down Command–Shift–Option while opening the control panels from the Apple menu. The Mac will beep to tell you that the PRAM has been zapped successfully.

If you are using System 7, hold down Command–Option–P–R while starting or restarting your Macintosh. When the Mac chimes to tell you that the PRAM has been zapped, you can let your computer boot normally.

Similar to rebuilding your Desktop, there are Shareware PRAM zappers that will do a more complete job of zapping your PRAM than this procedure.

Playing with Extensions

To figure out whether your extensions are causing problems, try to boot your computer with the extensions off. You can do this by holding down the Shift key when starting up the computer. If you do this successfully, the computer will tell you it is booting up with the extensions off. If the computer works fine, then you know that one or more of your extensions is problematic.

At this point, it's a matter of isolating the corrupted or difficult extensions. Start adding one or two extensions at a time and restart your computer until the computer stops working. In this manner, you can find out which ones are not working, or are having conflicts with other extensions or software. There are Shareware programs such as Extensions Manager or commercial software such as Conflict Catcher that will allow you to manage your extensions—and to test for conflicts.

Calling the Helpline

While this guide will help solve many of the easier problems your Macintosh will have, there are many more complex problems which these quick fixes will not affect. For more complex conundrums, my best advice is to call the BMUG Helpline and relax. *Remember that each time you lose your cool and scream at your computer—or at someone close to you—because your computer is on the blink, you are probably taking some time off of your life, and to be honest, the computer isn't worth it.* Remember also that the BMUG Helpline volunteers are people, are human, and are doing everything they can to solve your problem. Call the BMUG Helpline, and we'll do our best to help you solve your computer woes.

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BMUG

A Users' Manual

by David Hauer

Welcome to BMUG! By joining, you have become part of an international community of over 10,000 Macintosh enthusiasts—the world's largest Macintosh Users' Group. BMUG is an educational non-profit organization whose primary goal is to give away information. We are not affiliated with Apple in any way, and do not accept advertising.

Now that you are a member, you might like to know exactly what BMUG has to offer. But remember: a users' group is its membership. So go ahead and ask what BMUG can do for you. But ask also what you can do for BMUG.

What you can do for BMUG:

- Volunteer! While BMUG has a small, dedicated (and underpaid) staff, volunteers are our life-blood. This is both a financial necessity and an integral part of the BMUG vision. By volunteering, you not only help BMUG, you help yourself. Volunteers can learn a great deal, make valuable professional contacts, and increase their influence on the inner workings of the organization.

  Volunteering can take the form of working the Helpline (no, you don't have to be an expert to do this), writing for the Newsletter, helping in the office, or many other tasks. To volunteer, contact the BMUG Volunteer Coordinator, Kelly Pernell, at 549-2684 xtn: 203, or post a notice in the volunteers conference on Planet BMUG via Desktop–> BMUG Central–> Volunteers.
- Maintain perspective. BMUG does the best it can under difficult conditions, trying to conform to member expectations that are often divergent and sometimes completely unreasonable. We have had many successes, but there may be occasions where our limited resources and controlled-chaos style of organization collide with your needs. If this happens, please ask yourself whether your expectations are fair, and whether there is something you can do to help the situation. Above all, don't adopt an us-versus-them attitude. We are all us.
- Encourage others to join, volunteer, and/or contribute materially to BMUG.

What BMUG can do for you:

- Helpline
- BBS
- data recovery/hardware assistance
- Main Meetings
- SIGs
- Software
- special products
- member discounts
- Newsletter

Helpline (510-540-1742)

We BMUGers like to say that we are in the business of giving away information, and nothing exemplifies this attitude better than the helpline. Since its humble beginnings in 1985, the Helpline has provided succor to tens of thousands of confused, lost, frustrated, curious, and frantic Mac users. In certain circles the BMUG Helpline has achieved an almost mythical status, its staffers reputed to know everything about everything.

Such an inflated reputation has contributed to unrealistic expectations on the part of some members. These days no single person—not even a professional Mac guru—has all the right answers to all of the myriad of questions surrounding the Macintosh, its related hardware and software. And the Helpline is staffed entirely by volunteers. Some of these volunteers are experts in their fields and know a great deal; others are relative beginners hoping to help by ferreting out information they don't have in their immediate possession. In any case, the relatively small number of Helpline staffers is sometimes inundated by the torrent of requests for help. Callers experience this as a failure to get a call-back.

If you are persistent and patient, chances are good that you will get the information you need—and sometimes more than you need—via the Helpline. Or at least you will get useful leads. But don't rely on BMUG to provide instant, error-free information about all possible topics. Not even the professional technical support staff at major corporations like Microsoft and Adobe can offer that.

One other tip: faxes generally do not receive as timely a response as voice-mail.

Planet BMUG/BMUG Boston/BMUG Japan

(510-849-2684/617-275-3062/+81-423-59-7116)

BMUG is a truly international organization (some 500 members are in Japan, for example). One of the exciting ramifications of this is the possiblity of communicating with people around the world via our BBS, or Bulletin Board Service. Further global links exist in the form of Internet mail capabilities and gatewayed conferences.

Planet BMUG is the name of BMUG's FirstClass (note that this is a proprietary name, not an adjectival phrase) graphical user interface BBS. Since it replaced the old TBBS system in September of 1992, Planet BMUG has been a great success.

Also up and running out of Boston is a second BMUG First Class BBS. Many of the conferences on Planet BMUG are

gatewayed to BMUG Boston, and vice versa, so users of either board can communicate about the same topics and share information.

New to the BMUG BBS family is BMUG Japan. The Japanese BBS is in Kanji (written Japanese) and as a result is not gatewayed with the English language BBSes

Please note, that membership entitles you to an account on one but not all of the BBSes.

To use Planet BMUG, all you need is a modem and the First Class Client software (standard command-line programs such as Zterm will also work, but will not give you the graphical interface that makes the BBS so much fun to use.) which should have been provided to you with your membership packet (either on CD-ROM or HD disk). If you don't have the Client software, call or come by the business office, or log on with another telecom package and download the software from the root level of the Files folder (directory).

When you first log on, you will be asked for certain information. This info will be used by the administrator to validate your account; be sure it's consistent with that you've given the business office, otherwise you may not be validated. Barring problems of this sort, validation can take a few days to a week. During this time, your access will be limited to browsing for 25 minutes per day.

For more detailed instructions on logging on, see page [????]

Data Recovery/Hardware Assistance

While BMUG isn't set up to do full-fledged repairs or hardware-level data recovery, we do offer members such services as memory installation and software-level data recovery, free of charge. (Please note, though, that BMUG is not an Authorized Apple Repair Center, and that such "tampering" may invalidate any warranty still in effect.) Hands-on tasks of this sort are done by appointment only. Call the helpline [hardware appt. number????]to make an appointment.

Main Meetings

BMUG's main meetings have a long-standing tradition of offering up information in an irreverant and humorous way. People come to these weekly events to get answers to questions, to socialize, to learn about new products, and to network. Meetings are held at [?????] on the UC Berkeley campus at 6:30 pm. on Thursday nights; they consist of a lively question-and-answer/news/gossip period, followed by presentations from vendors and developers. Most vendors donate one or two of their products for the raffle which closes the meeting. Check the calendar for information on what's being demo'd when.

BMUG also has monthly meetings in San Francisco and San Jose. Pick up the calendar from the BMUG office for details.

SIGs

BMUG supports a wide variety of SIGs, or Special Interest Groups. Covering the gamut of computer-related topics from Internet to Programming to Women in Computing [????], these groups are an excellent way to meet others who share a specialized interest and to exchange information and ideas with them. Most SIGs meet weekly in the BMUG office, but be sure to check the calendar for times and locations.

By the way, you don't have to be a member of BMUG to attend the main meetings or SIGs. However, by joining the organization you contribute to their continued success.

Special Products

From CD-ROMs to t-shirts to best-selling computer books, BMUG offers a host of products-many of which were developed by its members. Check out our periodic mailings or a membership application for a list of current products and special bundles. And remember, you aren't restricted to being a consumer of these products; you, too, can be an author or CD-ROM designer.

Software

Even as you read this, programmers around the world are seated at their computers, creating software to be used on the Mac. Some of this material is destined for commercial applicationhood; much, however, will be offered up by its authors directly to the public, either free or as shareware. The challenge with such software lies not inpaying for it, but in finding out about it and getting ahold of it in the first place.

BMUG has an enormous collection of freeware and shareware applications, utilities, fonts, graphics, etc. You can access this library in floppy-sized pieces (available by mail or directly from the office), in big chunks on CD-ROM, or (in many cases) by downloading from our BBS. (Remember, though-the fee you pay BMUG covers only our labor and materials; shareware authors still expect and deserve their fees if you use their programs.)

Vendor Discounts

A number of vendors offer special prices to BMUG members. The list is in continual flux; you can find current listings on the Planet via Desktop —> BMUG Central —> BMUG Specials, as well as in our biannual mailings of the Winter and Spring Update catalogs.

Newsletter

The 300-page-plus "newsletter" you got with your membership comes out twice a year and goes to members only. Containing everything from product reviews to fiction, the newsletter is full of useful information, humor and innuendo-most of it unavailable elsewhere. Members are encouraged to contribute articles and editing skills.

Finally

Once again, welcome to BMUG. Comments/feedback are encouraged, particularly when proffered in a helpful and considerate fashion-and even more particularly when accompanied by an offer of help.

©david hauer1996

Cultural Crap

Life-As-Usual

A Letter from Emeline Mann Sanchez, BMUG Newsletter Editor-in-Chief

It's easy to tell a white lie. Rather than gasping in horror over your boss' newly coifed pastel green 'do with burnt umber highlights, you'll probably reassure him that he looks fabulous. It's just as easy to tell a flat-out lie. Say you've just witnessed a grocery store holdup gone horribly awry. The store clerk is on the floor, body bent at an odd angle, blood gurgling out his throat as he tries to tell you something important. Seeing as you don't really know the man, your response to the situation may very likely be something along the lines of, "Just hang in there—you'll be alright."

Lying is an accepted form of communication. When meeting casual acquaintances on the street, the typical greeting "How are you?" will be met with surprise and perhaps a certain amount of distance should the answer be a candid answer different from the usual, "I'm fine."

Seasoned flea market consumers act nonchalant over wares a vendor is hawking in the hopes of bringing the price down. The more desired the item, the more disinterest the buyer emanates. Shrewd vendors play along with similar duplicity.

Campaign promises are expected to be broken, but that doesn't stop the electoral public from demanding to hear the politician's rhetoric.

Lies, lies, lies, and guess what—more lies, have become the dust bunnies of life. From your friendly neighborhood scumbucket-for-a-drug-pusher, to the suits in the tobacco industry, to military officials, and government figures, deception has become the standard mode of operation.

On any day of the week, you may hear the following:

Scumbucket Pusher: It won't hurt you; you'll like it.

Tobacco Suit: It won't hurt you; you'll like it.

During the Iran-Contra hearings, you may recall the following:

Military Official: I don't recall.

Government Figure: I don't recall.

As with anything in life, all of this (the examples above) will, or has been documented in books, magazines, in the news (printed media, televised and radio broadcasted), subject of talk shows, fictionalized in movies, and such. As consumers of mass media, we are inundated with a wealth of information about the deception that's happening all around us. In addition, the media itself is subjected to editorializing which compounds the deception. Depending on the focus of the reporting (as suggested by the news editor/owner/big-paying advertiser), reaction of the viewing/listening/reading audience can range from irritation, anger, resignation, befuddlement, to support, relief, and/or a general agreement with whatever information is being received.

Infomation is a powerful thing. The lack of information is a powerful thing, depending on which side of the fence you're sitting on. In the 30s, the government's Center for Disease Control experimented on syhilitic black men to observe the progression of the disease. In the 40s—again under the auspices of the government—pregnant women were subjected to radiation contaminated materials.This provided a unique opportunity for doctors and scientists to study of the effects of radiation on the pregnant mother and their growing fetus.

In both examples, the subjects of the experiments were given no indication that they were being experimented on.

On par with the concept of information, or the lack thereof, as a commodity for power, is the manufacturing of information, and/or dessemination of misinformation. Former president Richard Nixon and former FBI director J. Edgar Hoover were key in manufacturing evidence against innocent citizens to maintain and achieve power.

Nixon launched his presidential career in framing Alger Hiss—then a high level state department employee—simply by labeling and "proving" Hiss as a communist.

In what little time he had, Martin Luther King, Jr. succeeded in pushing his human rights agenda into the public consciousness. FBI's much venerated Hoover spent much of that time trying to discredit King, spreading rumors of King's communist affiliations.

New to the game, but catching up with a vengeance, is the Internet. Advertisers, and businesses are finally realizing what a bonanza is to be had on this new frontier, the ever growing, ever evolving cyber-culture (see Dan Meriwether's article on this topic in this issue's Telecom section). While browsers believe they are gleaning information for research or reporting, sections of the ever-expanding Internet is fast becom-

ing an academic misnomer. Lewis Perdue, CEO of SmartWired Inc., sees many advertising sites disguising their marketing efforts as editorial content. In an opinion piece in the *S.F. Examiner*, Perdue explores not only these types of sites, but also looks into search engines that brings up listings of their advertisers, sometimes giving listing preferences to high paying advertisers.

Radio talk-show host, political pundit and firebrand, Jim Hightower, alerts us to a Web site targeted to kids (see his article in the Features section) which contains games involving popular marketing icons (think kiddy versions of Joe Camel).

You can even recieve "broadcasts" of *content* sfrom the Internet right into your hard drive without having to be at your computer. Instead of waiting to get onto sites, or waiting for an upgrade download, Palo Alto's Marimba or Santa Clara's PointCast will "transmit" news, info, and other Web paraphernalia the "tuner" or user, requests. Imagine what a boon that could become for advertisers and makers of the news.

What was once the domain of academia and the beginnings of modern anarchy, is slowly taking on the trappings of business-as-usual.

Equally disturbing is the deliberate misinformation that can be acquired on the Internet. When veteran newsman Pierre Salinger claimed he had information on the mystery of the downing of TWA Flight 800, he was actually (as of this printing) duped by reports he found on the Internet. The U.S. government and the news media inspires such distrust, that the citizenry was willing to suspend belief a few moments to buy into the idea that the plane was shot down by "friendly" fire. (To date, there is no definitive answer to what happened to the plane.)

The Internet is still a fount of useful information. Ideally, the Web populace will use it wisely and support it in a manner that will keep its integrity.

This newsletter is also prey to the vagaries of our existence. We try to keep from editorializing the submissions so that the information you get from this publication comes straight from the author. The only things we attempt to leave out are rants and raves that may not consider all the related details/information, obvious marketing plugs for a product, duplicate reviews sharing a similar opinion, and submissions that came in way past the Newsletter submissions deadline.

Because we try to keep the writers' voice, you will read all manner of writing. Some articles are written by professional journalists. Others reflect the innocence of our younger members, or the poetic pen of the creative writer, or the concise point-by-point benchmark results of the technically focused. In this 400+ page newsletter, you will find some articles interesting and others not so. The point of this newsletter is to keep you up with the Macintosh industry the BMUG way. You can contribute to it by voicing your opinions in the NL Articles folder on the Planet (Desktop —> BMUG Central —> BMUG Community Center —> NL Articles), submitting articles, online editing, coordinating our editorial effort, proofreading, laying out pages, indexing, and a whole host of publication related activities. If you would like to submit an article please send me a note on what you will be writing about. See below for contact informaton. If you want to volunteer in other aspects of producing this publication, you can send word to myself, and Kelly Pernell, the BMUG Volunteer Coordinator. There's a volunteer form at the end of this section that details what kinds of volunteers we would love to have. See if anything interests you.

All submissions should be either on a floppy, or uploaded on the Planet to the Upload NL Articles! folder via this path: Planet Desktop —> BMUG Community Center —> NL Articles —> Upload NL Articles! If you're not on Planet BMUG or BMUG Boston, but have Internet email, send your submissions to me at mann_sanchez@bmug.org. If a modem is not on your priority list, you can send your floppies (articles preferably SimpleText or Word 5.x text files) to:

Newsletter Submission
BMUG, Inc.
1442A Walnut St #62
Berkeley, CA 94709-1496

Submit PICT files. In the previous issue, I asked for non-PICT files because electronic prepress people have problems printing out PICT files on high resolution imagesetters. However, I had so many problems opening the various format the graphics came in, that it's easier for us to convert the PICTs. Do *not* embed graphics into your text files. You should indicate *where* you may want your graphics in your primary text file, but keep the graphics as separate files. (You can send a text file with embedded graphics, so long as you send the graphics files separately as well.) Tables should be single tabbed delimited (we'll make the columns line up when we lay out the articles), unless you're making a graphic text file (which you can very well do it yourself!). For all software and CD-ROM games reviews, include its minimum requirements as shown (when applicable):

Minimum System Requirements
Computer: [cpu, O/S, ports, etc.]
Memory: [? megs of RAM}
Hard Drive space: [? megs]
Manufacturer info: [name, address, phone, email, Web URL]
Price:

The BMUG Newsletter Style Guide, and Newsletter Style Tags can be found on Planet BMUG in the NL Articles folder, and is also included in your Newletter CD-ROM or Newsletter High Density disks, in the BMUG Newsletter folder. These two files will help you get on your way to writing an article for the newsletter.

Thanks to the BMUG staff and volunteers (live and virtual) who made this newsletter and its CD-ROM a reality. A special thanks to Art Lau for cutting down on his CD-ROM production time for my end of the newsletter; Pat Mahoney who came into the office even when she had a persistant cold; Harriet N. Hungate, who spent all of the Thanksgiving weekend and weeknights with my family here in the BMUG office (in our private little newsletter production party); and to Mom, Yvonne, and Benny who came to help me in spite of everything.

Letter from the Development Director

by Colleen Miller

Dear BMUGers:

My biannual letter to you via our Newsletter—here it is.

I must admit that I'm pensive these days. Ever searching for money. It can get tiring, and let's be honest, it's my job. But aside from thinking of ways to raise money, let me fill you in on a few other things that have been going on; things for which I am extremely appreciative.

So many people have come through with flying colors around the Computer Placement Project donations. We have so many donated computers that I almost don't know what to do with them! (Well, it's not quite that bad). Actually, we're still looking for more computers and, at this point, preferably working ones.

So many volunteers have helped me with the Placement Project by refurbishing the computers, actually going to the homes of recipients to install them, and doing mini-trainings with our recipients. At the top of my list is Ian Cumming. He's a whiz. I'm grateful for our volunteers' dedication, and so are the recipients.

So many companies have helped with in-kind donations—you know, equipment, services, and the like. APS donated quite a bit to help us spiff up our Technical Helpline. MacAcademy donated many of the videos in our new Video Library. LaCie helped us with a hard drive or two, UMAX helped our staff with a donation of an S900 computer, and Apple (yes, the company, not the fruit) actually donated a 6400 PowerMac to raffle off at a main meeting. There are so many other companies, I can't begin to name them here (see separate listing somewhere in our Newsletter).

Although it's been a long haul, a couple of more grants have come in for the Technical Helpline and the Placement Project. We could really use quite a few more, but it takes a while to get your name out there and build your base. So this year should be a bit better.

It's been a fruitful year. So why aren't I more satisfied? Well, I think I know why. We've received a lot and accomplished a lot, but the one thing we haven't received in solid amounts is money. And this is what we need most. We need money most right now to allow us to have a place where members can come to hang out, learn, do refurb, fix computers, and teach SIGs. We need money so we can have a place to run the Placement Project in order to provide underserved populations with computers and support. We need money to continue to be the type of community organization that we want to be—an organization that is supportive, educational, helpful to other non-profits, and great at providing services to members and non-members alike. We need money to continue to be the best Mac users group in the world, the biggest Mac users group in the world. We need money to continue to be the Berkeley Mac Users Group.

We need money—plain and simple. With the closing of the Boston Computer Society and numerous other users groups, it's more important than ever that we stay around. It's what we're fighting to do and, with our expenses down by $250,000 and our membership up by 30%, I believe it's what we will succeed in doing, especially under Ann Wrixon's direction. *But we cannot do it without money.* And that's where you come in.

We've recently started a new category of membership, called the SuperHero membership. For a donation of $1,000, you can be a lifetime member of BMUG. This will entitle you to a special listing in The BMUG Newsletter as a SuperHero, a free t-shirt, and the Best of BMUG CD-ROM collection—the entire set of BMUG CD-ROMs. Or you can forego the membership, the CD-ROMs and t-shirt, and claim this as a tax deduction. You'll also get the satisfaction of helping a worthy organization. If you can't give $1,000 (and I know many can't), then show BMUG your support in another way—with a smaller tax deductible contribution. If you've ever gotten anything good out of BMUG, something more than what your membership fee is worth, please help us out. If you've ever met a great friend online or in person because of BMUG, please help us out. If you've ever gotten a job because of skills you learned at BMUG, once again, please help us out.

We put this money to good use. We help out our community, we educate, we provide resources, we pay our staff to make sure someone's here to help our members, *and* we work like heck to keep the Mac out there.

So, if I haven't said it before, let me say it now. Your tax-deductible cash donation would really help us a lot.

There... I feel a little better.

Sincerely,

Colleen Miller
Director of Development

It's Never Boring at BMUG!

A Letter from BMUG's Executive Director

by Ann Wrixon

Well, it is never boring at BMUG. And this last six months has been no exception. In the last year the number of BMUG members has grown 30 percent. Sadly some of this growth was a result of the closing of the Boston Computer Society (BCS). After more than 20 years BCS closed its doors this last September after a serious decline in membership.

BMUG's membership growth is the result of several forces. Improved services have caused renewal rates to soar. National distribution of our Newsletter in bookstores across the country has allowed thousands of additional Mac users to find out about and join BMUG. And finally our award-winning electronic Bulletin Board Systems (BBSes) are accessible via the Internet, allowing users in any part of the world to be part of the BMUG virtual community.

BMUG Members Help Organization as SuperHeros

With all the changes in the last year and BMUG's continued growth we have turned to BMUG volunteers and members to help us ensure a secure financial base for this important community that we all belong to. So this last Fall, BMUG launched its SuperHero fundraising drive.

We ask members to consider becoming a BMUG SuperHero in exchange for a lifetime membership. Many members immediately signed on as lifetime members. And, many more helped with extremely generous donations that have been invaluable in making us a strong and growing users group.

BMUG Board of Directors Charts Organizational Future

Although the external changes and improvements at BMUG are obvious to everybody, the internal changes at BMUG are less obvious, but perhaps even more important. BMUG has been able to face important challenges due to the diligence and hard work of its Board of Directors.

BMUG's Board of Directors is involved in developing a long-term plan for the organization. This is often tedious and thankless work, but it is the foundation on which a stable organization stands. The BMUG Board takes this responsibility seriously, and the result is BMUG's growth and continued success.

BMUG BBSes are on the Internet and Win Award

BMUG Boston was the first of BMUG's three BBSes to become accessible via the Internet. Planet BMUG in Berkeley, California soon followed. And BMUG Japan has just recently begun operation in Tokyo. Now BMUG members anywhere in the world can log onto their favorite BMUG electronic BBS.

Planet BMUG also recently won *Computer Currents'* Reader's Choice Award for Best Local BBS. Planet BMUG Administrator, chris r. harris, has worked hard to improve the reliability of every aspect of Planet BMUG, and members have responded enthusiastically to her efforts.

Welcome Again to Our New Members

I want to take this one last opportunity to welcome our many, many new members. If you have joined BMUG in the last year we want you to feel as much a part of the BMUG community as our thousands of other members already do. And we hope if you bought this Newsletter at a bookstore you will take the time to find out more about BMUG: send in the membership card or log on to one of our BBSes (all the instructions are in this Newsletter; the software is on the CD-ROM).

Have fun, enjoy the Newsletter, and everything else BMUG has to offer!

Letter from the Chair

BMUG Board of Directors

by Fred Swan

The last six months have gone by very quickly. While things have gone relatively smoothly for BMUG, the same cannot be said for all users groups. BCS (the Boston Computer Society), one of the world's most prominent users groups, has closed its doors forever. This is an unfortunate turn of events for its members as well as for users groups and users everywhere. The shutdown of BCS could be seen as an isolated event—the result of particular circumstances pertaining to their operations. In part, this would be true. Unfortunately, however, it is also a sign of the times. User groups in general are finding it increasingly difficult to adhere to their core values and provide excellent benefits at reasonable prices to their members while still making ends meet.

How can this be true in the ever-expanding computer market, where thousands of people become new users daily? There are a number of reasons. The computer business, and especially the Internet, have become more mainstream, or at least very fashionable. This leads to a lot of coverage on television and radio, including "how-to" and "what's new" shows. There seem to be more computer-oriented magazines than ever, and computers are being covered heavily in general interest magazines from *Esquire* to *Time*. As more people use computers, the number of "expert friends" willing to dole out advice increases. The Net and online services are full of information. Corporate IS departments are growing. Large resellers are offering training courses. With all of the noise created by all of these different factors, along with mega-million-dollar ad campaigns from companies in the computer industry, it is increasingly difficult for the relatively quiet and under-funded voice of users groups to be heard.

With all of this hype and all of the increased coverage, do computer users groups still add value? Absolutely! But let's take a look at what BMUG provides for its members and the computing community as a whole so that you can judge for yourself.

1. Semiannual Newsletters such as this provide hundreds of pages of good, solid, honest information. There is no space wasted on advertising and no potential conflict of interest between editorial content and ad sales. And the information is unfiltered by corporate editors.
2. Excellent online content is available via the BMUG Web site and FirstClass BBSes in Berkeley, Boston and Japan. In fact, Planet BMUG was recently dubbed the Best Local BBS in the Bay Area by *Computer Currents Magazine*. You get much of the information available from the Net, but in an environment appropriate for the entire family.
3. Tremendous free meetings feature such speakers as Heidi Roizen and Larry Tessler of Apple, new technologies such as the Be operating system, popular technologists like Rick Smolan talking about digital publishing and his book 24 *Hours in Cyberspace*, scads of great vendors, and plenty of Q & A, industry gossip, etc.
4. Daily special interest group meetings covering everything from beginning Macintosh use to sophisticated database design attract up to a hundred people per meeting.
5. Regular "help desk" sessions allow members to come in to the office and learn how to install RAM, swap hard drives, and do data recovery (free of charge).
6. BMUG's computer placement program takes your discarded, somewhat behind-the-times computer equipment and puts it into the hands of needy families. Throw in setup and training from BMUG, along with some other computer classes, and an entire family who would ordinarily be excluded from this information society are now able to train for better jobs, get good government and medical information via the Web, write and print decent resumes, improve their school reports, and more. At no cost, except their investment of time. And you get tax deductions for your donations.

BMUG does all of this and more. I'm sure you'll agree with me that it adds a lot of value beyond that offered by traditional sources. And I think it's vital that organizations such as BMUG continue to receive support that allows them not just to survive but to thrive. This is the Information Age. It's critical that you and I, our neighbors and friends, and everyone else have access to and contribute to the wide range of information becoming available electronically. Users groups cannot provide this access to everyone, but they can teach people how to get access and take advantage of it once they have it.

Fortunately for the members of BCS's Macintosh Group, BMUG is around to offer them the opportunity to transfer their obsolete memberships to BMUG so that they can once again be part of a dynamic users community. But BMUG itself is not immune to financial troubles or to having its voice drowned out by other media.

It is only with your help that BMUG will continue to exist. Please renew your memberships and offer tax-deductible donations as you can. Tell your friends and co-workers about BMUG and what it does. Urge them to join. Log onto our BBSes and Web pages and contribute your ideas for great products or fundraising opportunities. BMUG is in the business of giving away information and, like the Peace Corps, helping people help themselves. But we don't get any government support. None of your tax dollars goes to support this important work. This kind of public service cannot exist unless you choose to support it.

Thank you for your continuing efforts to make BMUG stronger and to improve the dispersal of information through and about Macintosh computers.

BMUG *Volunteer Signup Sheet*

Thank you for your interest in helping BMUG! We welcome you to the BMUG family of volunteers. Please complete the following survey by filling in your personal information and checking off the items you would like to do for the benefit of BMUG—and yourself, of course.

Please return the form to Kelly Pernell, BMUG, Inc., 1442A Walnut St. #62, Berkeley, CA 94709-1492; Fax (510) 849-9026; Email kelly_pernell@bmug.org.

Personal *Information*

Name _____

Address _____

City _____

State _____

Zip _____

Telephone _____

Fax _____

Email _____

Which way do you prefer we contact you? ❏ phone ❏ fax ❏ email

Days and Hours of Availability (Approximate) _____

Topics *of Interest*

Please check the boxes beside the areas of interest that you would like to volunteer.

General Office Assistance

- ❏ Labeling and Stuffing Envelopes
- ❏ Assistance with Shipping Mail Orders
- ❏ Database Entry of BMUG Info Requests and Volunteer Surveys
- ❏ Managing Classifieds Listings
- ❏ Callbacks for BMUG Info
- ❏ Unpacking Shipments Returned from Expo

The BMUG Helpline

- ❏ Retrieving Phone Messages from Voicemail
- ❏ Answering Helpline Phone Calls
- ❏ Hardware/Software Installation, Repair, and Diagnosis
- ❏ Helpine Certification Program Instruction
- ❏ Assistance with Volunteer Incentive Programs/Events

The BMUG Newsletter

- ❏ Editing BMUG Newsletters (must be on Planet BMUG)
- ❏ Submitting a Newsletter Article
- ❏ Choice Products Evaluation and Database Management

Must Be Local to Berkeley, CA

- ❏ Proofreading
- ❏ Database Management of Articles and Editors
- ❏ Indexing

Publishing

- ❏ Graphic Art Design
- ❏ Pre-press Work
- ❏ Layout/Production Art
- ❏ Illustration
- ❏ Photography
- ❏ Assistance with the BMUG Web Page

Special Events

- ❏ Working in the BMUG Booth at Expos/Special Events
- ❏ Packing Shipments for Expos (in Berkeley CA)
- ❏ Hauling Materials to Show Sites (truck definitely a plus)
- ❏ Handing out Flyers and Putting up Posters
- ❏ Contacting Vendors (mainly for BMUG MacFest)

Refurb Project

- ❏ Contacting Potential Recipients
- ❏ Callbacks for General Info on Refurb Project
- ❏ Hardware Repair of Donated Computers (in Berkeley CA)

Thank *You!*

Features

Warning: Cannot Empty Trash

by Chris Clarke

A generation ago, the partisans of the latest technological breakthrough promised us electricity too cheap to meter. Human ingenuity had unlocked the power hidden in the nucleus of the uranium atom, and that power was destined to bring incredible wealth and comfort to denizens of our new, modern society. From transportation to housing to entertainment to the workplace, atomic power would transform every aspect of everyday life. Dad would ride to work in his private aircraft. Mom would be freed from household drudgery (remember, this was in the gender-specific fifties) by electric appliances running on cheap, clean nuclear electricity. Blue collar workers would retire, replaced by tireless, efficient, nonunion robots. The striving of ideology against ideology would end, and homo sapiens would settle down to enjoy the Good Life on a billion chaise lounges on the pool side patio of the future.

Except it didn't quite happen that way. Turns out it's dangerous to mine nuclear fuel, and dangerous to dump it when you're done with it. Turns out people didn't want to live next door to one of the plants. Turns out a lot of us realized it's cheaper to turn off a light switch than it is to boil water with neutrons. Turns out the tech fantasy had a few hidden costs.

It's probably a cheap shot to compare that post-war tech panacea with the one we're all reading about now. For one thing, we're all much more cynical about computer technology than we were in the fifties about nukes. This might have something to do with familiarity. Few of us worked with atomic piles, so it was possible to tell ourselves that nothing ever went wrong with them. No one who's gotten past a hard boot would ever say that about computers. Bill Gates' greatest contribution to the world is his inadvertent education of millions of people to the fallibility of engineers.

And a computer crash isn't likely to devastate a city, unless your PowerBook battery starts a fire in the California hills in October.

Still, there's an earnest hopefulness to the tech punditry that's awfully reminiscent of Atomic Age pronouncements. No one takes the paperless office seriously anymore—it takes five sheets of paper to print a business letter now that it's so easy to fix typos and adjust kerning, rather than the one sheet it took when you just used correction tape. But there's a lot of wide-eyed wonder at the computer-enabled interactive paradise due to be shipped Real Soon Now.

And just as was the case with the Atomic Age benefits of online life carry with them some hidden costs. And just as was the case with the Atomic Age, many of those costs are paid out of the capital we call the natural world.

Computer use might seem sound enough ecologically, aside from the slow trickle of CO_2, or nuclear waste, released by the power plant that generates the electricity to run the thing. And compared to certain other popular household appliances such as sport utility vehicles, the desktop PC isn't the most-polluting thing most of us own. But the computer industry has a far from perfect environmental record. The manufacture of components, cases, and chips creates a substantial burden of

Few of us worked with atomic piles, so it was possible to tell ourselves that nothing ever went wrong with them. No one who's gotten past a hard boot would ever say that about computers. Bill Gates' greatest contribution to the world is his inadvertent education of millions of people to the fallibility of engineers.

Venting more than three tons of 1,2,4-Trichlorobenzene to the San Jose air may not have been great for the planet, but it was legal, as long as it was reported.

toxins in the environment, whether in ground water near chip plants, in the adipose tissue of the people that work in the plants, or in the neighborhoods near the incinerators that burn toxic waste from said plants. From the solvents used in etching microcircuitry or plating hard disks, to resins that hold the microcircuits onto their backings, to lead solder, to monomers, additives, and pigments that go into making the plastic cases, each step in the manufacturing process adds its own toxic burden to the environment.

The US Environmental Protection Agency, through its Toxic Release Inventory (TRI), requires that businesses in the United States report any of certain listed toxic substances they release in the course of their business. Releases can be accidental (which TRI refers to as "fugitive" releases) or deliberate. Among the categories of deliberate releases the TRI tracks are land disposal (sticking the chemical in an onsite landfill or toxic waste dump), stack air (meaning the chemical is vented up a smokestack into the sky, there to drift where it will) POTW water (the chemical is put into the local sewer system) or offsite treatment, usually trucking the chemical to a toxic dump or incinerator.

Incineration is increasingly referred to with the misleading phrase "energy recovery." While it might seem to make sense to burn, say, methanol (which is a TRI substance) for energy, rather than dumping it in a landfill somewhere, hazardous waste incinerators hardly ever have the opportunity to treat wastes that burn cleanly. More often, they're fueled with compounds like chlorinated hydrocarbons, which create dioxins, furans, and similar highly-toxic substances when incinerated. Dioxins are powerful carcinogens, and are increasingly thought to mimic endocrine hormones in the human body, possibly promoting reproductive disorders such as miscarriage or sterility.

So when you read in a TRI report that Hewlett-Packard 6,090 pounds of 1,2,4-Trichlorobenzene, a potent carcinogen, to the air near its San Jose Plant in 1994, and sent 34,700 pounds of the same toxin to be incinerated at Romic Chemical in East Palo Alto, and when you realize that the "chloro" in 1,2,4–Trichlorobenzene means that the solvent contains chlorine, which means that the air in East Palo Alto had its dioxin content raised in 1994 as a sort of subsidy to HP's stockholders, you might find it a little harder to think of high tech as clean industry.

Keep in mind that the presence of such information on the Toxics Release Inventory is due to companies obeying the law. Venting more than three tons of 1,2,4-Trichlorobenzene to the San Jose air may not have been great for the planet, but it was legal, as long as it was reported. And many of the companies listed in the TRI under Standard Industrial Classification #3674, semiconductors and related devices, have made a commitment to reduce their releases of toxic chemicals to the environment by taking certain simple, common-sense procedural steps. Changing their production schedules, for instance, to reduce the number of "feedstock changeovers"—the number of times they empty a chemical out of a vat and fill the vat with another chemical—to minimize the escape of volatilized chemical that's nearly inevitable with such changeovers.

Except that "energy recovery" is treated differently by the EPA. In 1993, Alcoa Electronic Packaging of San Diego released 11,750 pounds of toluene, a carcinogen and nervous system toxin, into the environment. In 1994, Alcoa reduced its releases to 9,022 pounds. The EPA considers this a good example of source reduction. Yet Alcoa greatly increased the amount of toluene it burned on-site from 1993 to 1994, from 174,625 to 288,057 pounds. It better than tripled off-site burning of toluene in that same period, from 5,970 to 19,157 pounds.

If all the incinerators burned was toluene, this might not be such a bad thing: a hot enough temperature, and you'd get just CO_2 and water. But many halogenated hydrocarbons—organic compounds containing chlorine or fluorine or similar elements—dissolve readily in toluene. Burning them together, as we've seen before, produces dioxins and other unwholesome compounds. And in chemical waste incinerators, with the huge volume of substances being processed and variability in temperature inside the incinerator, it's next to impossible to keep chemicals from mixing before they burn.

In other words, despite the EPA's lip service commitment to source reduction of toxic chemicals used by industry, allowing incineration as an out gives companies a loophole big enough to drive a convoy of hazmat tanker trucks through. Companies like Alcoa can increase their toxic output dramatically while still receiving credit for source reduction.

The last three decades of innovation in the high tech field have left a legacy of poison throughout California, especially in the area known as Silicon Valley, once an orchard-filled vale known informally as the Valley of Heart's Delight. Communities in the Valley once tapped clean groundwater that had percolated from the redwood-cloaked Santa Cruz Mountains to the west. As high-tech plants spread throughout the Valley, so did their chemical calling cards. By the early nineties, well water in the southern Peninsula was widely recognized as a severe health hazard. Solvents like trichloroethylene, xylene and benzene had infiltrated into the Valley's groundwater. The Silicon Valley Toxics Coalition, a grassroots group that formed when concern mounted over the health effects of such groundwater contaminants, documented a rise in rates of cancer and other illnesses that seems reasonably likely to be linked to these high tech toxins.

It's ironic that the major solution proposed to end further contamination of the Valley's groundwater is incinera-

tion, as Romic Chemical, one of the largest chemical waste incinerators in the country, conducts its business in East Palo Alto. There is no fail-safe way to keep incineration products from leaking out of burn plants in significant quantities. Incineration takes substances whose identities are known and turns them into unknown ones. As incinerators vent unknown chemicals to the East Palo Alto environment, they drift and settle in the Bay, on the ground (where they can migrate into the groundwater) and into the lungs of the residents of the city. All in all, this "solution" to industry's toxic waste burden may well create a bigger problem than just letting the stuff sit around in drums. East Palo Alto, a predominantly African-American community, and cities like it bear the brunt of industrial toxins with few of the jobs supposedly generated by said industry.

It's not just the plant's neighbors of color who suffer. Assembly work in the world of high-tech has been termed "Dickens with a fresh coat of paint" by one wag. Though the work takes place in brightly-lit, sterile "clean rooms" rather than in dark and dusty textile mills or mineshafts, the threat to workers' health is no less severe. Many high-tech workers are people of color, a large proportion of them relatively recent immigrants of Asian or Latino heritage. Though the piecework may pay relatively well compared to slinging burgers, workplace exposure to toxins is commonplace, and fear of retribution often keeps workers from exercising their legal rights to self-protection.

This disproportionate share of toxic exposure suffered by the poor and minorities—a phenomenon for which the term "environmental racism" has been coined—doesn't just apply to the Bay Area. In a global economy, in which corporations can seek the best market regardless of what once were national borders, those nations with the most lax environmental laws will attract the most manufacturing plants. Witness the pre-NAFTA maquiladora zone along the US-Mexican border, in which industry, high-tech and otherwise, took advantage of loose worker safety and toxic disposal laws, creating a 30-mile-wide swath of poison from Baja California to Chihuahua. Industrial development further inside Mexico has followed much the same pattern. According to Maite Cortes of the Jalisco Ecological Collective, a grassroots organization in Guadalajara, a Motorola chip fabricating plant in that city operated in ways that would likely have resulted in criminal prosecution if the plant were in the United States. Slipshod disposal of toxic chemicals, poor monitoring and handling practices, and endangerment of workers' health were commonplace, according to Cortes. And of third world nations with industrial bases, Mexico's regulation is among the most stringent.

Communities in the [Silicon] Valley once tapped clean groundwater that had percolated from the redwood-cloaked Santa Cruz Mountains to the west. As high-tech plants spread throughout the Valley, so did their chemical calling cards.

But all that's been said of high-tech in the preceding paragraphs could just as reasonably be said of many other industries. Certainly computers aren't as polluting as, say the oil industry or the automotive industry. In fact, computers can reasonably be argued to offset some of the environmental damage done by autos and oil by enabling people to telecommute instead of driving. (Of course, one could just as reasonably criticize telecommuting as enabling even more urban sprawl, and consequent destruction of habitat, by allowing you to commute to a job several hundred miles away.) Why single out computers when other products do far more damage?

For one thing, this article's written for a computer-oriented publication. Bashing the oil industry here would be about as on-topic as posting tiramisu recipes in alt.fan.kevorkian.

But more important is the accelerated nature of planned obsolescence in the computer industry.

You probably know at least one person who still uses one of them pre-Plus Macs, writing letters or running spreadsheets using versions of Microsoft applications that were on the shelves when Bill Gates was just a millionaire. These people are notable mainly as exceptions. Thousands of Mac-o-philes have bought three or four different iterations of their favorite computer, in response either to the spiraling demand for speed and memory made by increasingly cumbersome code, or to the plain old human desire for new toys. The ironic thing is that the old stuff works perfectly well, in most cases just as well as the day it was bought, especially if you don't mind replacing the occasional power supply. Sure, you can't apply a Gaussian Blur to an eight meg image on a 512, and sure, it's hard to get tech support for Word 0.1, but the stuff still works. If you're going to mostly be writing letters and keeping track of your household finances, there's no real reason to buy a PowerMac 91XX to replace a Mac II. A computer that was built years ago doesn't add any more toxic burden to the planet, unless you set it on fire. (N.B. PowerBook owners.)

I realize it's a bit heretical nowadays, but there's an old maxim that we computer literati would do well to remember, one that was once rendered in the first bitmapped font in an emphatically non-QuickDraw environment, the New England stitched sampler. It went: Use it up/Wear it out/ Make it do/Or do without.

Chris Clarke is editor of Terrain, Northern California's Environmental Magazine. He lives in Oakland with Becky and Zeke the Dog. All self-righteousness aside, he is an avid consumer of highly-polluting Macintosh peripherals.

Mac Technology Conquers Disability

by Ruth Fontana

My name is Ruth, and I was born in Berkeley and raised in Lafayette, California. After being very ill in 1981 and undergoing two surgeries, I developed multiple chemical sensitivities (MCS). The doctor felt it was possibly from a ten-year exposure to a banned pesticide—chlordane—that was used around our home to kill spiders.

I was declared disabled by Social Security in 1984. Without a livable income, I fell further into poverty, losing my home of 15 years in 1986. Then, in 1991, upon returning home from a camping trip, I found that my next-door neighbor had been using a different kind of turpentine for her painting (since I was gone anyway, she said), and my whole house had become saturated. The exposure left me with permanent short-term memory loss.

Since 1984, any changes in my environment have had to be approached quite cautiously. I must avoid contact with all petrochemical* fragrances and other chemicals whenever possible, because they affect me by first erasing my memory and then by going on to exacerbate my arthritic symptoms and pain (another facet of my disability is that I suffer from ankylosing spondylitis, aka spinal arthritis), then causing various gastrointestinal problems, and worse.

Since MCS is usually progressive, it is vital that I avoid problematic chemical exposures. Having been initially sensitized by a petrochemical, the elimination of pesticides, herbicides, petrochemical fragrances, chemical cleaners, etc., in my home and surroundings is necessary. I use all-natural or inert fabrics and materials whenever possible, and older, used things for my home. For cleaning, I follow Annie Berthold-Bond's book, *Clean and Green*, which is full of non-toxic recipes for all sorts of natural cleaners.

Because of all of this, when I decided to buy a computer I had to consider how it might impact my health, and I had to find one that I could operate without outside lessons since it is so hard for me to go out (due to the use of petrochemicals in most every circumstance). Having run a support group for the chemically sensitive for four years, I knew that many people had problems with the odors coming from computers within a closed room. I can only assume that these odors come from coatings on the printed circuit boards. The plastics and/or other chemicals used in manufacturing them could give off gas VOCs (volatile organic compounds), causing symptoms in many people such as headaches, blurred vision, or skin rashes. Since I didn't want to add to my existing medical problems, I decided to try to locate a used computer.

[People have] problems with the odors coming from computers within a closed room.

In 1993 I received a used IBM 286, supposedly "to replace" the slow Franklin Ace 2100 I'd been using since1991. This replacement was a disaster since I couldn't even write a letter on it—no training or instructions were included in the acquisition! So, when I got enough money together in 1996 to buy a new computer, even though everyone I knew said, "Buy IBM," I was determined to buy an easier-to-use Mac. I got a new Performa 6205 in February and set it up under an open window with a fan blowing directly on the monitor, 24 hours per day. (This has eased the problem of "off gassing" for me.)

After staring at my Performa, only turning it on occasionally, feeling disappointed by my lack of skill, in early April I came to BMUG. What a refreshing change from the blank stares on people's faces I'd received when I asked questions regarding the IBM 286! I started my first MacEssentials series, and I have missed few meetings since. What a jewel this SIG is, as is Doug Bourquin, the instructor! First of all, Doug makes it easy to understand even the most difficult concepts. Second, being in a room full of Mac users is delightful. I have never found IBM users to be as enthusiastic and fun. And although I come to learn, I also come to see the new friends I have met, and to meet more.

BMUG has made a huge impression on my life. Having been disabled for 12 years and almost homebound for two, the knowledge I have gleaned has opened doors I would have never even

The electronic age is really a friend to those of us with disabilities that limit our access to "normal society."

known about. Being part of BMUG sped up the learning curve, and I have learned so much that I have even been offered a volunteer position on the remote staff of a commercial online service. I have been running support groups for many years, including one online currently, and have served on the board of directors of a non-profit group, so I have many skills the service was looking for in a forum leader. (The people associated with the non-profit group for which I volunteer, the Environmental Health Network, are thrilled that I now have these skills.) I have grown quite fond of the chat groups and Medline boards where I can share my knowledge and get to know other folks.

I can truly attest to the fact that the electronic age is really a friend to those of us with disabilities that limit our access to "normal society." Personally, I have always adored crowds, and my Performa and BMUG make it possible for me to join the "crowds" once again without worrying about who is wearing perfume, cologne, hair spray, or fabric softener.

Now that I have this wonderful tool, I find myself sitting before it for longer and longer and watching less and less television, always finding new things to do with it. My Performa has given me far more to do than I'd ever suspected—more almost than I had when I was working. ;–}

** Petrochemical derivatives that are known to be neurotoxic (poisonous to the brain and nerves) and are on the EPA's hazardous waste disposal list, carcinogenic, and/or hormone-disrupting are in almost all personal-care products such as perfume, cologne, after-shave, body powders and oils, hair conditioners and sprays, etc.*

They include such chemicals as: ethanol, benzyl acetate, benzaldehyde, acetone, and others, according to material safety data sheets and the EPA. Household products such as fabric softeners, scented laundry soaps, and bleaches also contain some of these chemicals. According to an as-yet unreleased phone survey of 4,000 people by the California Department of Health Services, 20 percent report unusual sensitivity to a number of chemicals. Ten percent of those polled received a diagnosis of MCS from their doctors. For more information, contact the Environmental Health Network at 415-541-5075 (voice mail).

Ruth Fontana has been disabled since 1984 by MCS (multiple chemical sensitivities) and spondylitis. She has been an active volunteer with a non-profit group, the Environmental Health Network, working on the issue of toxics and unnecessary chemicals in our homes, stores, workplaces, etc. Her efforts to educate the public have included working with the California Department of Rehabilitation while it was trying to revamp regulations to include people with "invisible" disabilities. She worked with state Senator Milton Marks of San Francisco when he was the chair of the California Senate Subcommittee on the rights of the disabled (Marks sponsored a panel that included heads of industry and people disabled by chemical sensitivities and discussed compromises on the proliferation of chemicals in our communities and their effects). She enjoys writing editorials and articles for newspapers and newsletters about disability issues, and she runs support groups for people with invisible disabilities from her home and on America Online. She also has two daughters and a grandson.

Macworld Expo Boston 1996

by Jacob Hale Russell

Macworld Expo Boston drew record breaking crowds this year. More than 65,000 people and 350 exhibitors crowded the show floor for four days. Perhaps the analysts who have been proclaiming Apple's demise were *slightly* wrong?

Keynotes

My visit to Macworld started off Wednesday morning at the keynotes. The keynotes were held at the John Hancock Center, and there was a line reaching all the way from the front door, down the side street, around the Twin Towers, and part way up the other side of the street—nearly a full square. About 1,000 people were turned away because there was no room.

Keynote attendees were greeted by loud rock music, two large monitors behind the stage which showed animations, videos, speaker close-ups, and computer screens during demonstrations, and a giant hall with every seat filled. To start, Colin Crawford, the president of Macworld Communications, spoke briefly about Apple's strengths and hopes. He then turned the stage over to Gil Amelio, the new CEO of Apple Computer.

Gil Amelio

Gil Amelio's talk went overtime, but nobody was bored. Amelio is an excellent public speaker. He didn't use a prepared speech but spoke directly to his audience with conviction and charisma. His presentation began with a mix of some of Apple's most creative ads. The screen zoomed out to a standard Macintosh QuickTime window, and then the movie was saved as "Elegance," much to the audience's amusement.

Amelio does not think the question should be, "Will Apple survive?" Rather, he proposes, "How exciting will Apple's transitions be?"

Amelio does not think the question should be, "Will Apple survive?" Rather, he proposes, "How exciting will Apple's transitions be?" During his first few months at Apple, Amelio has received 10,000 letters from Macintosh users around the world and read every one, a daunting achievement. He is a very inspiring CEO.

In his opinion, Apple needs to focus on several main points: innovation, loyalty of customers and developers, establishing a professional management team, and delivering value. To do this means eliminating unnecessary products, improving industrial design, and adding features that the consumer needs. The release of Mac OS 8 will not be a mega-event but a gradual roll-out, beginning with Harmony in 1997. Simplicity, capability, quality, appeal, security of investment, and empowerment to the user—these are Apple's goals. Coincidentally, this show marked the shipment of the 25,000,000th Macintosh and 10,000,000th StyleWriter.

Next, Frank Casanova, from Apple's research department (www.research.apple.com), showed some demos of future Apple software and technology. Two software highlights were Coco, a development environment for kids, and Avid Cinema, a home video tool co-developed by Apple and Avid. New technologies include MCF (Meta Content Format) for intelligent access of databases, VTwin for the management of files, a new user interface which will act more like a desktop, and QuickTime VR with realistic animation. Finally, to the excited cheers of the audience, future Apple hardware, including thin PowerBooks, textured machines, one-purpose Newtons, and computers that look more like home appliances, were unveiled.

Netscape

Netscape Communications was up next, represented by Mark Andreesen, VP of Technology and author of the original Mosaic browser, and Jim Barksdale, President and CEO. The Mac makes up 26% of Netscape's browser business and is very important to the company. The audience loudly approved their announcement that Netscape has synchronized development and release for both Mac and PC platforms. Netscape will use many Mac-only features, such as OpenDoc support, built in networking, and AppleScript; they fully support developers who make Netscape plug-ins for the Mac.

Macromedia (www.macromedia.com) Shockwave New version of popular Netscape plug-in adds high-quality sound.	**PointCast** (www.pointcast.com) PointCast Network Free screen saver/software product brings news, stocks, and scores to your monitor
Lari Software (www.larisoftware.com) Electrifier Image Compressor for very speedy image downloading over low bandwidth	**Now Software** (www.nowsoft.com) Now Up to Date Web Publisher This program creates nice calendars and address books for the Web
Metrowerks (www.metrowerks.com) CodeWarrior Gold 9 Excellent C/C++/Java development environment with easy-to-use framework	**Adrenaline Software** (www.adrenaline.ca) Numbers and Charts OpenDoc spreadsheet with host of useful features
PowerProduction (www.powerproduction.com) WebBurst Use easy drag-and-drop techniques to create fully functional Java applets	**Vividus** (www.vividus.com) Web Creator for Kids Web page creator for children; no need to know or worry about HTML
Terry Morse Software (www.terrymorse.com) Myrmidon This print driver will turn *any* document into HTML	**Microsoft** (www.microsoft.com) Internet Explorer Web browser with several features over Netscape
Specular (www.specular.com) 3D Web Workshop Combination of programs for Web page graphic creation (includes PageMill)	**Alco Blom** (www.xs4all.nl/~alco/urlm) URLManager Pro Handy Shareware utility that helps keep track of URLs
Digital Harbor (www.dharbor.com) WAV Excellent OpenDoc word processor with features of a page layout program	**DayDream** (www.it-center.se/daydream/) SafeCracker Puzzle Game with excellent graphics; user tries to break into 50 safes in a mansion
Bare Bones (www.barebones.com) BBEdit 4.0 Text editor with host of features, including Web site creation	**MacPlay** (www.interplay.com) Starfleet Academy Star Trek Game taking advantage of several new Apple technologies

Table 1

The final part of their keynote was dedicated to a brief but thorough demonstration of their new Netscape Gold. This features all the standard parts of a regular browser and incorporates a WYSIWYG HTML editor. Because it is tied in with a browser, previews are better and one click will download, change, and re-upload a page via FTP. Netscape has made every effort to make Gold intuitive and easy.

Guy Kawasaki

Guy Kawasaki (www.evangelist.macaddict.com), Apple Fellow and evangelist, introduced the final keynote. Aptly titled "Macintosh Cooooool: the Hottest, Baddest, Coolest new Apps," this keynote gave sixteen developers the chance to demonstrate their latest products. Adding humorous asides, Guy Kawasaki let the developers do the showing and telling and the audience the judging. (See Table 1 for a listing of the products with brief descriptions.)

Exhibits

Several hundred companies presented their products in two buildings: the World Trade Center (the smaller building where the larger companies exhibited) and Bayside Expo Center (where the majority of the show was held). The booths ranged from very elaborate, 30-foot by 30-foot foot booths with LCD panels and PA systems to small five-foot by five-foot booths for companies just starting out.

Apple Computer

At Bayside, featured prominently at the front, stood the superstar of the show, the Apple Pavillion (see Figure 1), a whole room (23,000 square feet) filled with innovative Apple products. With great showmanship, Apple displayed its Mac OS 8, Live Objects, the new Performas, the Newton, the Internet server solution, PiPPiN, Avid Cinema, and more.

Newtons were seen all over the show, on display and in use in peoples' hands. A hot ticket was the Newton demonstration that ran every twenty minutes. Each lucky participant got to try a Newton 130 as he followed the instructions of the dem-

Figure 1

onstrator. I especially liked the Newton Web browser that puts the ability to surf the Web right into the palm of your hand.

Apple is catching up to speed with the clone makers. It is making zippy 200 MHz and multiprocessor machines to compete with the fast clones. Apple showed the new Performa—200 MHz of 603e power, a really neat looking machine in a tower case.

Apple's Internet Server Solution line is a key product. At the high end, Mac servers run AIX or AUX (IBM UNIX and Apple UNIX, respectively). More reasonably priced Mac servers range from $2,000 to $15,000, and are equipped with WebSTAR, the leading Mac software server, PageMill, and other necessary server software. Many of Apple's current print ads are touting the Internet Server Solutions.

Recently, the idea of a set-top-box—a one-purpose machine that hooks up to a TV—has gained popularity. Apple has created a box just like this called PiPPiN, named after a popular Pacific Coast apple. PiPPiN serves as a Web surfing machine and game player and will cost well under $1,000. PiPPiN has no hard drive, just a CD drive and an Internet connection.

Avid Cinema got the general public's "most exciting in show" award. Co-developed by Apple and Avid, makers of the leading video solutions, the Cinema allows affordable ($495) computerized video editing to come into amateur film makers' lives. You can make a story line, add titling, delete, add, and move clips, and add special effects and sound.

New Word Processors

New word processors are still news. Three of the coolest were WAV, BBEdit 4.0, and WorldWrite, and on the cool but not totally word processor list, was Myrmidon.

Digital Harbor (www.dharbor.com), makes WAV, an excellent new OpenDoc word processor; it was on Guy Kawasaki's list. It features capabilities offered only by a page layout program until now, like the ability to start typing anywhere and automatic word wrap which updates as you move a graphic. The OpenDoc implementation is excellent; you can even drag a folder filled with OpenDoc parts and it will add all the contents to the OpenDoc parts listing (up at the top).

An important new addition to Macworld was the Developer Greenhouse. Eighteen developers were provided with booth space … at an affordable $500… . Hand-picked from over 100 applicants, these were the developers with the coolest and most innovative products.

A really neat text editor with HTML tools is BBEdit 4.0 by Bare Bones Software (www.barebones.com). Instead of using a WYSIWYG view, users see the HTML as it is meant to be: plain code. You can use the HTML tools palette to create new HTML documents and add code. Impressive features include HTML syntax coloring, code checking, a spell checker that skips over code, and the ability to upload the page via FTP without leaving the program.

Live Objects is the term for an authorized OpenDoc product—one that has been tested by Apple. The WorldWrite Live Objects word processor is inexpensive at $89, and has relatively minimal requirements: 5 megs of hard drive space and 2 to 5 megs of RAM. With it, you can change margins, add tables, embed OpenDoc links, chart, and create columns with one click.

Myrmidon, by Terry Morse Software (www.terrymorse.com), is a nifty way to create a Web page from text that already exists. It installs as a print driver in your System Folder. Create a page in a word processor or page layout program (any program works), select Myrmidon from your chooser, and print the document the way you normally would. It will appear as a coded text file on your Desktop (or wherever you save it to). You can also customize Myrmidon to your needs—for example, you can have it generate a table of contents.

Developer Greenhouse

An important new addition to Macworld was the Developer Greenhouse. Eighteen developers were provided with booth space to show off their new software. Each developer was given a small station, only big enough to hold a computer but at an affordable $500 for the space. Hand-picked from over 100 applicants, these were the developers with the coolest and most innovative products. Myrmidon and WAV were both displayed in booths there, as were many other products from Guy Kawasaki's keynotes.

PointCast (www.pointcast.com) is a new, free network of sports, stocks, news, and entertainment. It consists of a screen saver that comes on after a preset idle time and a special software program. Both display the latest news, sports, etc., which can be custom tailored to one's interests. The drawback is the ads that run continuously in the background.

Alco Blom (www.xs4all.nl/~alco/urlm/) is an independent developer who has created a neat new application: URL Manager Pro. It works in conjunction with any Internet client, managing Web, FTP, email, gopher, and other URLs. Its features include the ability to open a text file and have all the URLs in it bookmarked automatically, to grab every URL on a Web page, and to add a menu to Netscape with commonly accessed bookmarks.

Adrenaline Software (www.adrenaline.ca) showed Adrenaline Numbers and Charts. This new spreadsheet is fully OpenDoc aware and Microsoft Excel compatible. Anything (images, text, graphs, etc.) can be embedded into a document and you

can link a graphic or chart to the Web so that it is updated constantly.

The Net Zone

The Net Zone at the World Trade Center was sponsored by boston.com. The largest booth belonged to boston.com, the Internet resource of the Boston Globe, and they made available several live connections to the Internet. Vivo Software, a small company based in Massachusetts, stood out because they had hired a person to wear a weird purple costume with a triangular head to hand out business cards outside the building. Vivo unveiled their system for streaming video live over the Internet. Yahoo! Internet Life, EveryWare, ACI US (makers of the 4D database), and CE Software were also represented.

Be, Inc.

Everyone was talking about Be Inc., founded by Jean-Louis Gaseé, who was at Apple for many years. Be is a new company that hit the show with a bang, and their booth was too small for the large crowds it attracted. Be manufacturers the BeOS, a neat operating system (not vaporware) that features protected memory, a new interface, and preemptive multitasking. Be also makes the BeBox, a neat-looking computer featuring twin PowerPC chips.

The BeBox ran concurrently: Four videos, one 3D animation, one mandelbrot rendering, a font cycle, and three sounds from CDs and soundtracks—all with no sacrifice in speed. Their demonstration of the BeOS running on a Mac clone was a head turner. It featured many of the things that Mac OS 8 will provide—and it's already here, at least in developer release format. More information on Be can be obtained from www.be.com.

New and Important Products

OpenDoc/Live Objects

OpenDoc (Live Objects is used to represent tested and approved OpenDoc products) had a big presence at the show. CI Labs, a joint, non-profit venture between Apple, IBM, and Novell which is in charge of OpenDoc, amused Macworld attendees with small containers filled with moving Mexican jumping beans. The Apple Pavilion had an area with hands-on demos, many companies showcased their new products, and Developer Central was filled with talk of OpenDoc.

Live Objects could change the paradigm of computing. It's cross platform (Mac, Windows, OS/2, AIX, and AUX) and is centered around documents, not applications. It is very easy to use and will help applications trim down in size. For a good description of OpenDoc, visit the Apple OpenDoc Web Page (www.opendoc.apple.com).

Mac OS 8

Although delayed many times, Mac OS 8 (formally Copeland) promises to be no disappointment. This next generation Mac operating system will feature a classy new user interface (which currently can be obtained by using the Shareware program Aaron at greg.math.harvard.edu), protected memory, built-in implementation of many of Apple's technologies (QuickDraw 3D, QuickTime VR, etc.), and more.

At Developer Central, Apple demonstrated working versions of Mac OS 8. Most prominent were the three new graphical user interface: Hi-Tech, featuring 3D, metallic-black objects; a children's interface, with neat sounds, colorful lines, and fun animations; and a default interface, which features several 3D improvements over the current graphical user interface.

The Machines

If Apple was the star, Power Computing had the second lead. They showed a number of new machines and had a powerful video display. Their in-demand T-shirt and poster had a picture of Sluggo captioned, "We're Fighting Back for Mac: 225 MHz," referring to their fast new PowerBase.

The focus was on speed. Everybody is up to 200+ MHz, and everybody has announced or is shipping at least one multiprocessor machine. UMAX, another Apple clone, showed its high-end, high-speed, affordable machines. Apple is introducing its own fast machines, including a 180 MHz 8500, a 200 MHz 9500, and 200 MHz Performa 6400.

Goodies

The fashion statement of the show appeared to be pinning as many Iomega buttons on one's self as possible. Iomega gave out large yellow buttons inscribed with Bostonian phrases, such as "I hate New York" or "I love Mo." Apparently, the wearers hoped to be spotted and photographed for a prize.

My award for "best-non computer product" goes to Aladdin, makers of the leading compression format StuffIt. They compressed their T-shirt into a small cube about 4" x 3" x 2". When opened, it expanded into a full-sized large T-shirt.

Power Computing created a stir at the expo by hiring a crane and bungie jumping experts. Many people, including Guy Kawasaki, bungie jumped off the crane, which was well outside the building. The rumor on the floor was that Power Computing had taken out a lot of life insurance, but I guess they had faith in their operation because their CEO took the first jump.

Conclusion

Overall, the entire expo was very upbeat and fun. People crowded in for all four days of the show. The expo was good for Boston, bringing in millions of dollars. If the four days at Macworld are any judge, Apple has an exciting and lively future.

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Shattering Mac OS 8

The OS Formerly Known as Copland

by Chris Holmes

Welcome back. This is a followup to the Fall 1995 BMUG Newsletter article "Apple Composes System 8." There we explored the significant changes in store for Apple's next major revision of the Macintosh operating system, the PowerPC-only Mac OS 8, better known at the time by its code name Copland. Here we'll explore what's happened since then—and believe me, a lot has happened.

The most startling news is that Apple will *never* ship Copland. While that sounds drastic, all it really means is that Copland has been shattered into pieces to be released separately, making the completed parts available now while Apple concentrates on the harder bits.

We'll talk about how that affects your Mac and about other changes Apple has in store in just a minute. First, for those of you just tuning in, here's a quick refresher course.

The Story So Far

Almost five years ago, just a year after the introduction of System 7, Apple announced that the Macintosh system software was due for a significant overhaul. There had been, after all, over eight years of powerful enhancements to an operating system designed for a standalone 128k desktop Mac using 400k floppies and a 9-inch black-and-white monitor. It was starting to show its age, and the competition was catching up.

On the surface, the interface was looking flat and needed to be pepped up. By now you've perhaps seen the Shareware extension Aaron, which paints your menus and windows with the new 3-D visage of Copland shown in "Apple Composes System 8." That visage is, of course, just the beginning of the surface changes. What Aaron can't give you is the wide selection of new preferences and features—and alternate visages—Apple promises.

> *[I]t was time to revamp the entire notion of Mac system updates: release a steady stream of future improvements.*

Beneath the interface, a complete reconstruction was planned. The Mac's limited memory management and "co-operative" multitasking were to be replaced with techniques used by the big boys in the mainframe world and already adopted by the likes of Windows NT and IBM's OS/2. The Mac was to be given the beginnings of memory protection, so that one crashing application doesn't bring down the whole Mac, and the precursors of preemptive multitasking, to make the system software responsible for sharing time evenly among applications instead of allowing applications to control the system's effectiveness.

That was Spring of 1992, and we all knew it was going to be a big job. After all, it was to be the first significant rewriting of the Macintosh system software in just under a decade. So it was no real surprise when two years later Apple announced Copland was going to be a bit late and should arrive in another year and a half.

But nine months later, at the end of the 1994, they were then projecting a release date of mid-1996, still a year and a half away. And by mid-1996 the only outward accomplishment was that the delay was reduced by six months, such that they were expecting to ship only a year later in mid-1997. Even an interim release, code-named Harmony, due at the end of 1996, wasn't enough to instill confidence in consumers who had just spent the past nine months wondering whether Apple would even survive. Something ha*d* to be done.

Shattering Copland

This is where our story begins anew. Just before the August 1996 Boston Macworld Expo, new Apple CEO Dr. Gil Amelio and his recently appointed Chief Technology Officer Ellen Hancock decided it was time to revamp the entire notion of Mac system updates: release a steady stream of future improvements. It's a dramatic move for personal computing, away from blossoms of features thrust upon users with a pomp and circumstance reserved for political campaign rallies. The new model has only been used in the computing industry by mainframe and micro-computer makers such as AT&T, IBM, and DEC, so it's taken a few people by surprise.

The new plan is to ship major upgrades with notable feature enhancements twice a year—every January and July—and then in between to release minor upgrades and bug fixes each Spring and Fall. The major upgrades will be fully installable versions of the system software while the minor upgrades will be just a few flop-

pies-worth which can be applied only to major upgrades.

We're watching the beginning of this now. This Fall saw the release of System 7.5.5, a minor upgrade on a few floppies. And in January Apple should ship off Harmony, a new full installation which incorporates new (but in this case not unknown) technologies.

So while the bad part is that there's no more Copland, the good part is (and I know this sounds like a joke) you no longer have to wait for Copland. Copland has been broken into constituent parts, each of which can now be delivered piecemeal without waiting for the entire package to be complete. For example, Dr. Amelio suggested some of the new user interface and the search engine from Copland (and Cyberdog) could soon be in our hands. As a bonus, some 68040-based Macs (and perhaps even a few 68030-based Macs) will now be able to use many of the components because they're no longer built on top of the PowerPC-dependent core technologies.

[T]he bad part is that there's no more Copland, the good part is (and I know this sounds like a joke) you no longer have to wait for Copland.

Apple's even gone so far as to rethink how future upgrades can be delivered and sold to us. Ellen Hancock used to sell software on a subscription basis when she worked at IBM. Metrowerks does the same with its CodeWarrior development environment, charging $200 for a year's subscription of upgrades. Now the same is being considered for the Mac OS. Perhaps for your subscription charge you'll be entitled to download the latest upgrade, as one now automatically downloads resources within America Online (and, yes, I'm talking about "Receiving artwork... Please wait")—only much less frequently.

Apple's even gone so far as to rethink how future upgrades can be delivered and sold to us. Ellen Hancock used to sell software on a subscription basis when she worked at IBM. Metrowerks does the same with its CodeWarrior development environment…Now the same is being considered for the Mac OS.

Tempo Out of Harmony

So what can we expect and when? First up is the already-announced Harmony, or what will most likely be System 7.6, in January 1997. With Harmony, Apple intends to project a platform for the latest in Internet innovations and for third-party developers' OpenDoc parts, now called Live Objects. The much-touted Cyberdog will be rolled into this release, along with the latest versions of Open Transport and QuickTime.

Harmony also brings a little discord: as announced during the release of System 7.5.5 last Fall, Harmony won't run on 68000- and 68020-based Macs or on non-32-bit clean 68030-based Macs.

After Harmony, if Apple follows the schedule, next July should see the shipment of Tempo, the next major system software release. By then the new interface should be fully in place, complete with spring-loaded folders and tabbed windows. Also included will be a new AppleScript scriptable Open Transport, version 1.5, and the current version of the ARA client. Rumor has it Tempo's Finder will be multithreaded as well as native on PowerMacs.

Before Tempo ships, Apple should release version 3.0 of Apple Remote Access, the first version to allow remote connections over the higher speed IP and PPP. While Apple's Open Transport product manager Richard Ford reports the ARA client will be folded into a future version of the Mac OS, it's yet to be seen whether Tempo will be that version.

The further into the future we peer, of course, the more vague the details. In 1998 we may get full preemptive multitasking, perhaps even earlier than it was originally projected to appear. It's reported that teams of engineers are working hard to bring us the core technologies as quickly as possible.

But Wait, There's More!

While all of us have been speculating about the announced features, Apple's also been busy devising more improvements for future Mac OS versions (and sometimes just plain stealing good ideas from the competition).

For example, screen savers will no longer be the sole domain of third-party developers—the Mac OS will include its own. And if you repeatedly do something the hard way, the Mac will now offer tips pointing out more efficient ways to work.

With new contextual menus, the most useful operations for many objects will be no more than a pop-up menu away. Imagine clicking on the Trash and choosing Empty, rather than using the disjointed command that now appears

in the Special menu because no other place seemed appropriate.

The New Folder item in the Finder's File menu becomes hierarchical, showing a list of stationery documents you prepare. That way you can work with your document from beginning to end, without explicitly worrying about the application used to modify it.

And for the first time since the Finder's view-by-name labels were made clickable, folder list views have been improved. Type, Creator, and comments from file's Get Info windows can appear in list views, and the columns can be rearranged and resized.

Many of the foretold changes are the less obvious. The Finder will have a host of new preferences while allowing you to control how much you can control: whether you're allowed to trash files, to empty the trash, or erase your disk, whether you can see your System Folder, whether you have detailed menus, even whether you can change your preferences.

Some new preferences are less control-oriented, such as whether you see large or small icons (or even buttons) on your Desktop.

Promises, Promises

The reception to the shattering of Copland has been mixed. Power users and third-party developers happily anticipate receiving and supporting new features as soon as they become available. Support technicians and less knowledgeable users fear they'll have trouble keeping their Macs' system software up to date. Meanwhile, the mainstream press debates whether Apple's already dead.

I keep a strong faith in the plans of steadfast Dr. Amelio. I'm confident Apple will keep afloat and its customers will remain loyal—as long as there aren't too many more changes to come. It's been reported that this may not be the last we hear of the restructuring of Apple or its Mac OS strategy, as the good doctor's team continues reviewing what it will take to keep Macintosh competitive.

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System 7.6 Preview

Say Goodbye to Welcome to Macintosh!

by Raines Cohen

Just before the drop-dead deadline for this Newsletter, I dropped in on the San Francisco stop of Apple's "OpenDoc Road Show." Apple evangelist Jordan Mattson spent part of the day talking about features of the system software release codenamed "Harmony," and Apple's overall system software release strategy. While plans do change, here's the latest and greatest on what we expect them to call System 7.6 (check Planet BMUG and the BMUG Web site for updates). While the talk was aimed at developers, quite a bit of the info it presents is of interest to every Mac and MacOS-compatible system user.

Apple's new strategy for system software is fairly straightforward: issue a new reference release every six months, and an update in between. So you can look for system software releases in January and July, and updates in March and October.

This helps Apple by freeing it from having to delay releases until all the features are ready. If one feature isn't ready for one release, it can be postponed until the next one, since it won't be long off. Customers can count on consistency, and developers can plan on users having new releases on a reliable basis.

You'll be able to read and write PC-formatted floppies, SyQuest cartridges, and SCSI hard disks.

[A]pplications will launch faster, thanks to improvements in Virtual Memory. Microsoft Word 6.0 launches 45 percent faster than before; Photoshop opens 50 percent faster.

System 7.6 won't run on all Macs. It will require a 32-bit clean ROM, and a PowerPC or 68030 or higher processor. So don't plan on squeezing it onto your old Mac Plus or SE, Mac II, or other ancient system.

While some might call this "planned obsolescence," or "leaving behind," or, worse yet, "orphaning" these ancient Macs, Jordan pointed out that making new systems work on these machines was taking more than 30 percent of the time in the quality-checking department, while upgrades by these users, since System 7.0, have accounted for less than one percent of system software upgrade sales. He said that users of older Macs generally find a system that works for them and stick with it. Removing the code to support the older Macs also makes the system file slimmer, faster, and more reliable.

Why should you upgrade? Apple will try to give you plenty of reasons. For starters, applications will launch faster, thanks to improvements in Virtual Memory. Microsoft Word 6.0 launches 45 percent faster than before; Photoshop opens 50 percent faster. "A lot of the problems [application developers] we're having at launch time were our fault," Jordan admitted.

A number of extensions are automatically installed or updated with System 7.6: OpenDoc, CyberDog, QuickDraw 3-D, QuickTime VR, and QuickTime 2.5. On machines with a 68040 or PowerPC processor, the Apple System Profiler, a technical support tool, is also installed.

Look for improved PC interoperability in System 7.6, letting you open, view and save Windows 95, Windows 3.x, and DOS files directly. You'll also be able to open more of these file formats without the original application. You'll be able to read and write PC-formatted floppies, SyQuest cartridges, and SCSI hard disks.

The Finder in System 7.6 has been allocated 50k more RAM than before, to make it more reliable in low-memory situations. Hopefully you'll never again run into situations where the Finder runs out of memory and doesn't have enough memory to tell you as much, or to back out of whatever operation it is performing.

Some applications, particularly extensions that tinker with the Finder's internals, will need to be upgraded for the new system. Apple needs to make internal changes in order to make the Finder work better, Jordan said.

The good news is that it will support large volumes of up to 2 terabytes (2,000,000,000,000 bytes or 2,048 gigs)! The bad news is that minimum block size is still proportional to the volume size, so on a 2-terabyte disk, the minimum file size will be 32 megabytes!

System 7.6 makes a few changes in memory handling, starting with a redesigned Memory control panel. You will no longer be able to set up Virtual Memory and a RAM disk in such a way that the computer cannot start up. 24-bit addressing is no longer supported, so the few applications written a decade ago that use certain shortcuts may no longer run. The "Modern Memory Manager" is always on, but most applications that didn't work with it before do now (for instance, GlobeTrotter 1.0 from Akimbo Systems requires that Modern Memory Manager be turned off — unless you're running System 7.5.5 or higher).

Virtual Memory will be turned on by default, set to 1 meg more than the physical memory, with a 16-meg minimum. This will affect some multimedia applications (which play less smoothly if they are interrupted by VM), and Photoshop (which has its own virtual-memory scheme) and RAM Doubler (which duplicates some functions of the system's Virtual Memory); look for updates for these applications, or at least advice from the vendors on compatibility with the new system. "More than 30 percent of our customers are running RAM Doubler," Jordan noted, so Apple will certainly take pains to make sure it can be made to work with the new system.

On the networking front, MacTCP will no longer be supported: Open Transport is all you get. Jordan recommends going back to try Open Transport if you had problems with it before; the new (as of this writing) 1.1.1 release looks to be a lot more stable than earlier ones.

Apple has some good news and some bad news for fans of large hard drive volumes. The good news is that it will support large volumes of up to 2 terabytes (2,000,000,000,000 bytes or 2,048 gigs)! The bad news is that minimum block size is still proportional to the volume size, so on a 2-terabyte disk, the minimum file size will be 32 megabytes! While the large-volume support will be helpful to multimedia producers, the file-size minimum will make using big unpartitioned disks impractical for most users until it is removed in the July '97 or January '98 system releases.

Control panel makers are being encouraged by Apple to change their programs to a new type called "APPC." These files, simultaneously an application and a control panel extension, will behave like control panels but will run more reliably.

One of the smallest changes in System 7.6 will be visible right from the start: no more "Welcome to Macintosh." Instead, you'll just see the smiling MacOS logo, because you might be using a Mac clone from another vendor, instead of a true-blue (or would that be true-multi-hue) Macintosh. Likewise, look for individual components to be renamed: Mac OS Guide, Mac OS Easy Open.

System 7.6 will start to show signs of Internet integration. It will include Live Object Internet links to applications and the Desktop. You'll be able to double-click URL's in the Finder to view them with a browser. CyberDog will provide built-in email. Internet setup will be simplified, with integration of TCP/IP, PPP settings, and Apple Remote Access 3.0.

Some other system changes will improve configurability and ease of use. LaserWriter 8.4.1, part of the new system, will be "less modal and more flexible" than previous versions.

A new Extensions Manager will provide more control over which extensions load, showing you information from the files and allowing you to turn on and off groups of related extensions in a single click. "This is a great example of how Apple is breaking the Not-Invented-Here syndrome," Jordan said, pointing out that the new Extensions Manager uses a resource pioneered in Conflict Catcher by Casady & Greene.

The last feature worthy of mention is the new Installer, which will provide you with a unified, step-by-step interface to installing all system software components. First, it encourages you to read the documentation accompanying the system update. Then, it recommends that you update your hard disk driver. In some cases, it may actually force you to run Disk First Aid! Jordan says Apple is taking this drastic step because of the high percentage of support calls and problem reports related to installations exposing hidden system or disk structure corruption. After you've done all that, you can choose a disk for installation and install the software. Performing a "clean install" is now a visible, supported option. "It's no longer Command-Option-K with my tongue on my nose," Jordan said, mocking this hidden but useful function in previous installers.

Where does Apple go from here? Beyond the March update, look for another release, code-named "Tempo," in July. A few more Macs will drop off the "supported" list with this release. It will require a 68040 or PowerPC processor. Many new features will be in this next release, but I guess you'll just have to wait for a similar article in the next BMUG Newsletter to find out about them!

Raines Cohen, BMUG co-founder, is Online Communications Manager at User Group Connection, the independent company supporting User Groups, whose Web site address is http://www.ugconnection.com. He's also a freelance writer, Contributing Editor to MacAddict magazine, and a wandering consultant.

Hightower Hijinks

by Jim Hightower

Children's Ads in Cyberspace

Friday, June 7, 1996

[Dark, threatening music] It's 1996… Do you know who's soliciting your children…

Brand-name marketers, that's who, creeping into your home through the wide-open window of your computer, getting your children to reveal private consumer information about your family and manipulating them to demand the companies' products.

Many special Web sites target children, luring them with games, prizes, and other fun. But to play at a computer playground called KidsCom, for example, the kids first have to disclose their name, age, sex, and email address. They are also asked their favorite TV shows and commercials, plus the name of the child who referred them to KidsCom.

Once the boys and girls enter one of these corporate playgrounds, they begin receiving unsolicited email messages from the company urging them to return again and again, promising them exciting gifts and new activities. These Web sites are very sophisticated, enticing your kiddos to interact with Oscar Meyer's "Wienermobile," Kellogg's "Tony the Tiger," Frito-Lay's "Chester Cheetah" and dozens of other lovable animated spokescharacters, which not only "speak" to the kids online, but also play games with them, sing the company's jingles, and generally develop a "virtual relationship" designed to make the youngsters loyal to the brands these characters represent.

Then to put this brand-loyalty to immediate use, children's merchandise is conveniently available to the little nippers through "The Disney Store," "The Kellogg General Store" and other online click-and-buy shops.

Shouldn't children play with other children, instead of with advertisements? You wouldn't let your youngsters play on the highway, so why risk their getting run over by slick marketers on the Information Superhighway?

This is Jim Hightower saying… Stop this manipulation and invasion of privacy; contact the Center for Media Education.

Well, it doesn't take a detective to realize that the job-creation claims of razzle-dazzle companies racing down the Information Superhighway are more than defective… they're a farce. Yet, everyone from Bill Gates to Bill Clinton insists that American workers have to get with it, get educated and retrained, so you can keep up with America's growing computer industry.

Children's merchandise is conveniently available to the little nippers through "The Disney Store," "The Kellogg General Store" and other online click-and-buy shops. … You wouldn't let your youngsters play on the highway, so why risk their getting run over by slick marketers on the Information Superhighway?

Center for Media Education
Phone: (202) 628-2620

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The Hype about High-Tech Jobs

Monday, August 5, 1996

The corrections column of a small newspaper noted: "Our paper carried the notice that Oscar Hoffnagle is a defective on the police force. Mr. Hoffnagle is, of course, a detective on the police farce."

Outfits like Microsoft and Intel are being hailed on Wall Street and in Washington as "The New Titans" of American industry—our economic hope for the future. Two decades ago, most of these computer whizzes didn't even exist, but today the combined value of their stock is greater than GM, Ford, and several other "old-fashioned" manufacturing giants.

The new Information-Age companies created a fresh batch of millionaires and billionaires… but don't expect much for you working stiffs. Not only do the rank-and-file jobs in this industry offer only mediocre-to-miserly pay, very few

Computer-processing and electronics manufacturing combined, offer barely two-and-a-half million jobs—and both the number of those jobs and their pay are on the decline.

jobs of any kind are created by these hot new Titans. Microsoft and Intel, the two superstars of the industry, only employ 48,000 people. Ford employs more than three times that, and GM—with 350,000 US employees—hires seven times that.

Microsoft's and Intel's few jobs are a cruel joke in an economy that hires 114 million people and has more than 12 million more unemployed. Indeed, computer-processing and electronics manufacturing combined, offer barely two-and-a-half million jobs—and both the number of those jobs and their pay are on the decline.

This is our future?

This is Jim Hightower saying… It's not high-tech hype we need from industry and politicians… it's good jobs at good pay.

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by Bob Herbert. *The New York Times*: March 8, 1996.

Telecommunications Greed

Tuesday, June 11, 1996

Well, isn't that new Telecommunications "Reform" Law working just splendidly for us?

Remember how both political parties locked arms in Washington to march this huge piece of legislation right down our throats on behalf of the telephone giants, the cable monopolies, the TV networks, and other powerhouses of the communications industry? To force it through, these outfits had to spend an estimated $120 million on lobbying fees and campaign contributions to our lawmakers—the most ever spent on a single bill.

But when Ralph Nader, Hightower Radio, and others spoke out against this Big Business Boondoggle, the industry and its apologists all rushed forward to say, "No, no, no this isn't for us; we're doing this for [echo] The People." Sure, and the fox wants in the henhouse so it can help the chickens.

But industry got its way, and Democrats and Republicans alike assured us that this new law would usher in a Brave New Telecommunications World in which there'd be more competition, new job creation, and lower prices for consumers.

More competition? Since the bill passed in February, our local phone companies, radio stations, and TV networks are being merged, conglomerated, and otherwise gobbled up faster than a hog eats supper—creating massive new media conglomerates that are eliminating competition, not increasing it.

New job creation? All this merging has led to a massive new round of job purging. Thousands of communications employees have learned since February that they are to be shoved right out the door of telecommunications greed.

Lower prices? Keep an eye on your phone bill. Telephone companies nationwide are already in line to jack up your local phone rates with an increase of more than 50 percent.

This is Jim Hightower saying… These corporate foxes aren't in the telecommunications henhouse to help us chickens… they're in there to pluck us clean.

Source:
"Telephone Companies Call for Local Rate Increases" by Mike Mills. *Austin American-Statesman*

Since the [Telecom] bill passed in February, our local phone companies, radio stations, and TV networks are being merged, conglomerated, and otherwise gobbled up faster than a hog eats supper—creating massive new media conglomerates that are eliminating competition, not increasing it.

Jim Hightower is a progressive populist political commentator based in Austin, Texas. He is presently writing a book about America's class war, producing radio commentaries heard on 75 stations across the U.S., beginning a weekly political action newsletter, and hosting a daily radio talk show (new as of Sept. 2, 1996). For more information, call (512) 477-5588 or tune in on the World Wide Web at http://www.essential.org/hightower.

NetDay96 Revisited

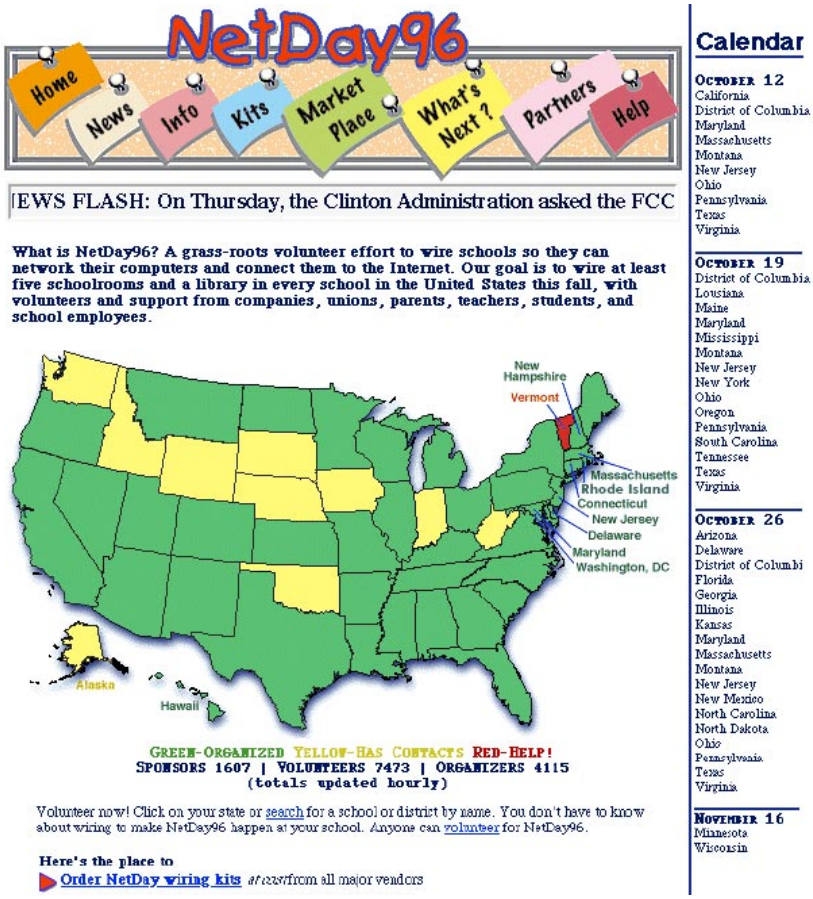
cabling+effort+hardware+software+training+support+information+back-up =SUCCESS!

by Carol Haberberger

The first NetDay was held in California last March and the idea caught on rapidly. In less than a year the local "barn raising" went national . The second NetDay spread through most of the US this fall, as more and more communities organized and signed on. NetDay pages on the WWW have grown to include some very helpful information and support with connecting people, materials, and cabling techniques. Books That Work contributed 'how to' lessons in laying cable, a scrapbook of virtual postcards from participants is being compiled, discounts for supplies and materials have been made by several companies, and on-going sources of expert advice and local support have been made available.

Ironically, while the NetDay projects were creating onramps, the Chairman of the FCC, Reed Hundt, was calling for an "e-rate" (education rate) so students and teachers could travel the information highway without tollbooths along the way. The joint filing by the secretaries of Education, Commerce, and Agriculture was a unique effort proposing how universal access of the Telecommunications Act of 1996 would be implemented in free school links for core telecom services like the Internet. Hundt noted that over 50% of jobs in America (already) require computer use, but fewer than 1 in 10 classrooms have the necessary technology for hands-on exposure that would enable students to learn. While the joint board recommendations will be made in November, it will be up to the FCC to make its final decision in May.

So far schools have had to scramble to patch together the essentials of technology and keep them working. The plan would make a big difference in ensuring that real connections between schools and the world are kept open and readily available.



What's next? NetDay96 hasn't wired all the classrooms in the country. In many areas, other basics need to come first, adequate information and training, adequate wiring and communications connections, hardware, and software. Once the roads are in place, the emphasis can be on the destinations, and empowering all students to more equal access. and learning.

Carol Haberberger is an educator and an active learner about technology. She has sponsored the Education SIG table at Macfest and is working on ways to promote teacher comfort and use of the Macintosh for many purposes. She currently serves on the BMUG Board of Directors, and can be reached at chaber@mail.telis.org or c_haberberger@bmug.org.

Living with the Mac

Tech-Mobility

A Rags-To-(Occasional)-Riches Tale For The Information Age

by Karen Armstead

I do not give a hoot about technology, except as a means to an end: freedom. That is, the prerogative to live as other than a machine.

I graduated from Berkeley some years ago, in what was called the "Humanities Field" major. I have never learned to touch type, and have never wanted to go to graduate school. I have always detested hosiery, and anything to do with cash registers. I have fidgeted at photocopying, I have languished sorting mail, and I have been fired more than once for inefficiency.

I have struck it out on my own, placing ads to attract people who wanted to have their houses cleaned, and I have ended up driving out to those houses, where I have vacuumed low pile in solitude, polished veneer, and made shower doors transparent.

But cleaning has not paid enough that I could work part-time and still have all the time that I wanted to do things that don't make money, things that make my life worthwhile. To wander my wanderings, write my truths, think my thoughts, and nourish my relationships, I need freedom from continuous worry about rent and grocery money. So I signed up for a seminar on how to be a technical writer.

The teacher had studied English, and now he wrote instructions for gadgetry and software. He took his livelihood for granted. Up till then, I had not questioned the dogma that I was unemployable. He did the radical in treating me as if I could get a job. I found out that if I learned the right technology to complement my writing, I could be making more than twice my hourly cleaning rate.

To wander my wanderings, write my truths, think my thoughts, and nourish my relationships, I need freedom from continuous worry about rent and grocery money. So I signed up for a seminar on how to be a technical writer.

But first I started looking at job listings in my prospective field. I seldom saw Quark mentioned. Instead, I noticed that more than half of the tech writer positions called for experience in FrameMaker.

I had bought my 7200 the month before, a substantial computer, which may have been easier to use than a PC—but which I was having to learn to get along with. In addition, I was already more absorbed with software than I wanted to be. I was lying awake nights, trying to second-guess PageMaker. I was calling up Microsoft product support, earnestly trying to get Word to do everything I thought it should. Enough was enough, I thought; technology was in my life to set me free. On principle, I would see if I could get a tech writing job without sinking time or money into learning FrameMaker.

And I did. I got my first technical writing job in May. I went to work in a Windows office, using Word to document a business database. I asked software developers questions they hadn't thought of. I wrote down the answers in English, for grateful end users. I had my own desk and my own voice mail. Ten years out of college, I was finally making a living using my intellectual skills.

The story does not end there. The job folded in early August, and I am looking for work again. In the interim, I am teaching myself FrameMaker. I take my time at it, reminding myself I am on no one's clock. I refer to the product literature and call customer support as often as I need to. When I'm not practicing at Frame, I call around about jobs. I work out at the Y downtown. I hike in Tilden, I socialize, I listen to music, I read, and I plan my upcoming trip.

I will be going to Greece with money left over from my first tech writing job. I chose Greece as a destination—from a list of places with sunshine, beaches, and history—because of the ruins on Crete. These date from the earliest layers of

As far as telecommunications go, I am more grateful for the fax/modem. I am old enough to remember sending typed-and-photocopied resumes and manuscripts through the mail. I love being able to shoot them off right from the hard disk, instead.

Greek civilization. They glorify nature and fertility. Women seem to have been self-determined in this early culture—and what's struck me, from my reading, is that the figures in the frescoes look joyous. Some suggest that the first Cretans had an egalitarian social order. An idealization, probably—but I want to cherish a time without enslavement or false idols. I grasp what straws I can.

If technical writing seems trivial next to my deepest interests, it does free me to explore these passions, and it is not exploitative work. I like the fluid, wide-open feel of the silicon frontier—the sense that there is room for any intelligent person in it.

Sometimes I feel left-out—among those who keep up with technology—in not having a favorite software to run on about. I don't know why I should. The products are evaluated superfluously, as in the auto market: PageMaker has a rap for being amateurish, best suited to turning out garage sale fliers. Quark is a quirkier package, supposedly for use by the avant-garde and the Very Gifted. Microsoft Office is a steady workhorse, while FrameMaker has caught on because it's regarded as a heavy—a tartar-control toothpaste, as it were, for your tougher documentation needs.

I master the technology that I believe will get me hired. It is cold-blooded.

"What's your Internet address?" a friend asked me.

"I don't have one," I said. There was a pause.

"But you got the bigger computer to make money, didn't you? You need to get online in order to do business. Not having an email address is like not having a phone number. Nobody can call you. Now, go get set up with America Online."

And I did. I installed the free trial software that came with my PowerPC and gave the people my credit card number. I logged on that evening and spent hours checking out "rooms," and taking part in "chats." On the Web, I toured flickering "sites" set up by people like me.

Since then, I've accomplished little in cyberspace that I could not have done as easily another way. I've been known to browse online during odd moments—but in truth, it seems so remote and so impersonal. I'd rather be ruffling a cat's fur.

As far as telecommunications go, I am more grateful for the fax/modem. I am old enough to remember sending typed-and-photocopied resumes and manuscripts through the mail. I love being able to shoot them off right from the hard disk, instead.

I am a heritor of "user-friendliness," the non-geek who gets around with a personal computer. I course the roads programmers and engineers have so smoothly paved—but I don't live in front of the computer, and don't call me a virtual tourist. Instead, I am grateful for the chance to do a job, and then go "home," where my heart is. I am a tech business traveler.

Karen Armstead has freelanced for the Montclarion, the West County Times, and other publications. She joined BMUG in August 1995.

Eine Kleine Mac Musik

By G.D. Warner

It's not in the Bible.

(That's *The Macintosh Bible*, any edition—well, 1 through 5, anyway!)

It's not in the Encyclopedia.

(That's *The Macintosh Encyclopedia*, also any edition).

You won't hear about it from The Audible Macintosh, either.

What is "it" you ask? Simply a way to make music on your Mac, without the use of expensive MIDI gear, or even QuickTime 2.5's QuickTime Musical Instruments extension. "It" is a mod tracker.

"I know what a 'mod' is," you say, "but what's this 'tracker' stuff?" Good question...but before I explain what a 'tracker' is, I should explain what a 'mod' is, simply because everyone in the world *doesn't* know—as indicated by all those books which don't mention them at all. A 'mod' (short for "music module") is a musical file format invented on the Amiga sometime back, by a fellow named Karsten Obarski, for a program called "SoundTracker". It was intended to be a compact way of storing music inside games and "demos"—especially useful as background music.

> A "demo" is a program consisting of computer animation and music which originated on the Amiga. Now they are all the rage on the PC, and even the Mac has a couple (available at ftp://ftp.amug.org, in the directory /pub/demos/). Look for Chrystar Demo, Harassment and RAiD Intro. I haven't been able to connect to download them, though....

Mods consist of samples (strings, bass, piano, vocals, etc.) and information similar to that in MIDI files, such as tempo, notes, velocity, etc. A mod player takes this information and plays the instruments and data back, note for note. No need to assign any instruments as you would with a MIDI file—no annoying (and expensive) extra gadgets, either! A mod *tracker*, on the other hand, allows you to add that important information (pitch, duration, vibrato, etc.) to a batch of sounds you select yourself, thereby (um...hopefully!) creating a song.

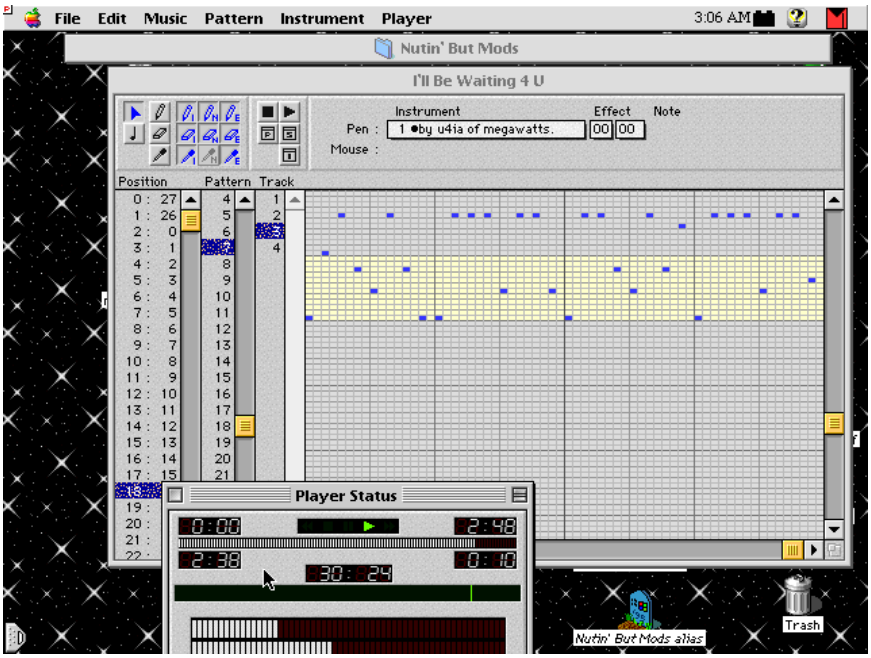


Figure 1. Meditor

While the Amiga is all but dead—a slow resurrection is taking place in Europe, with plans for a PPC (CHRP compliant) version in the works—the PC has pretty much taken over the mod creation front, with several different editors available...and, of course, several different formats: MTM, XM, S3M, etc. S3Ms and XMs are the most popular formats.

The original mod format was limited to four tracks, or *voices*, all of which could sound off at the same time. The newer formats may contain as many as 64 tracks.

There are several applications capable of playing mods on the Mac: SoundApp 2.1, Mod Player 2.0.2, SoundTrecker 2.x, etc. Of these, only SoundApp is capable of playing S3Ms, MEDs, and a few of the other more esoteric IBM "PeeCee" formats.

If you wanted to make your own mods prior to 1993, you were stuck with only two options: (a) buy an Amiga and use ProTracker or (b) buy a "Windoze" box and use Scream (or Fast) Tracker. It was sometime back in 1993 that Antoine Rosset's PlayerPRO 4.0.6 hit the Internet (well, that's the first version I saw that could create mods). A mere three years later, you can use Meditor 0.1 Δ (that's "Delta") 63, MacMOD Pro 4.2, and PlayerPRO 4.5.2 (PlayerPRO 4.5.3 is due out in a week or two as I write this) to create your own mods.

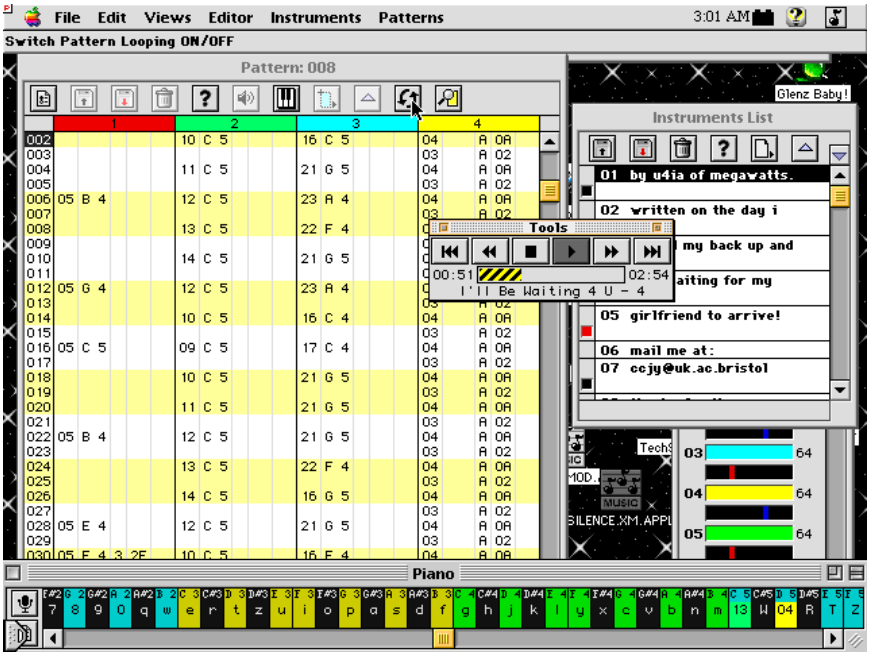


Figure 2. PlayerPRO

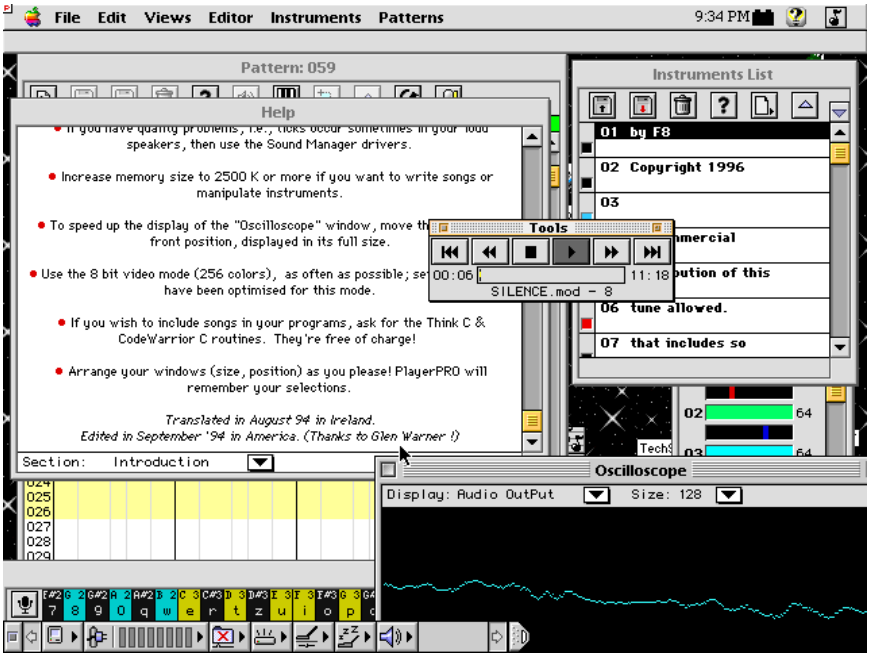


Figure 3. PlayerPRO—Der Help

I should point out that I haven't been able to make the new version of MacMOD Pro run on my PowerBook 190cs, so no screen shots; sorry!

The differences between the three: Meditor is free and is fully functional; MacMOD Pro expires after 30 days (whether you use it or not); and PlayerPRO won't let you save your music or open anything other than mods or songs, whose samples were compressed with PlayerPRO's own compression scheme, MADG. It also puts up a dialog box after 20 minutes which says "20 minutes is a long time to run an UNREGISTERED program, isn't it? Please register your copy of PlayerPRO!" On the other hand, the author's support (via an email mailing list) and responsiveness to bug reports is impressive.

Both PlayerPRO and MacMOD Pro allow you to create self-running applications of any mod you wish; these typically run in about 300k of RAM, though they actually use about 100k. I've got about 45 of these on my system; I use them to listen (through headphones) to music while I'm working; in fact, I'm listening to U4IA's "I'll Be Waiting For You" as I write this—one of my favorites.

"Well, this is nice," you say, "but where do I find mod files to listen to?" This is a good question...

Mods are available in several different places: local BBSes (don't forget to check those alien platform BBSes!), commercial online services, web pages, ftp sites, and the newsgroup alt.binaries.sounds.mods. If you read my article "Who's Afraid Of The Big, Bad Net?" you have (or know what to get, and where to get it) all the utilities you need to download and decode binaries from newsgroups. For those of you who neglected to read my last article, here's a brief recap of what you need: StuffIt Expander, Base64, and uuUndo. These are required to decode the binary files which are posted either in UUencode format, or the fairly recently developed Base64 format (Ahh, the miracles of copy-and-paste...).

'Who's Afraid Of The Big, Bad Net?'
by G.D. Warner
BMUG Fall 1996 Newsletter

Compression/Decompression Blues

In your forays for mods over the Internet, you may come across a mod with the extension ".lha". This is an Amiga compression scheme. To decompress these type of files, you need MacLHA (the latest I've seen is MacLHA 2.13). Get it from the below-mentioned Info-Mac Archive Web page, or the U4IA page (also mentioned below).

"Hey, wait a minute! How come my mod player doesn't open this thing after I decompress it?" Another good question. You have to either: (1) open the file from within your mod player (which doesn't always work), or (2) change the type and creator code (STrk and SNPL, respectfully). Now, before you rush out and beat your head against the wall in fear of doing anything with ResEdit, relax. Simply download

a copy of Snitch. This extension will allow you to change type and creator codes from the Get Info box. You can do several at once simply by Shift-Clicking the ones you wish to change, plus one you wish to match the type and creator code for. Do your "Get Info" and click the "Change All" button, and you're all set.

Another good source for mods are mod CD collections. I've got four: the original PlayerPRO CD (Yep, that's right—the *original* PlayerPRO CD. This is the one that only cost $20, not the current one that costs $100.), the Music Mod & Sound Effect CD, the double CD set Sounds Teriffic, and the four CD set Mod Anthology. Of the four, I most recommend Mod Anthology. It's got over 18,000 pieces of music in all types of formats, interviews with the authors (Sorry, no U4IA. Read my interview with him in TraxWeekly #67 for his thoughts on CDs distributing his music.), unreleased tunes, players for each platform, etc. All this for $48.95 (that's $45.00 plus $3.95 s/h).

The PlayerPRO CD, in contrast, is $100. That's right: $100. It is one disk, with 3500 mods on it. I asked Antoine Rosset, the programmer of PlayerPRO, why his CD was so expensive. He told me it was the only way he could get US distribution (through a company called Quadmation. Their email: quadmation@iwe.com... not to encourage spamming or anything like that, of course!). I emailed them: "How come you're selling the PlayerPRO for $100 when it should only cost $20?" I asked. Needless to say, I haven't heard anything from them. He's written to EduCorp, per my suggestion, but they didn't answer his letter.

Got mine (the Mod Anthology CD, that is) from these folks:

Cronus
1840 E Warner Road #105-265
Tempe, AZ 85284
email: info@ninemoons.com
web: http://www.ninemoons.com

The only problem I have with this CD is that the Mac apps are saved as executables (as in "PlayerPRO.exe"). They don't run on my Mac, either.

Sounds Teriffic is, as I mentioned earlier, a double CD set containing mods, S3Ms, MIDI files and instrument samples (IFF, WAV and VOC formats). This is an Amiga/PC disk, so while it will

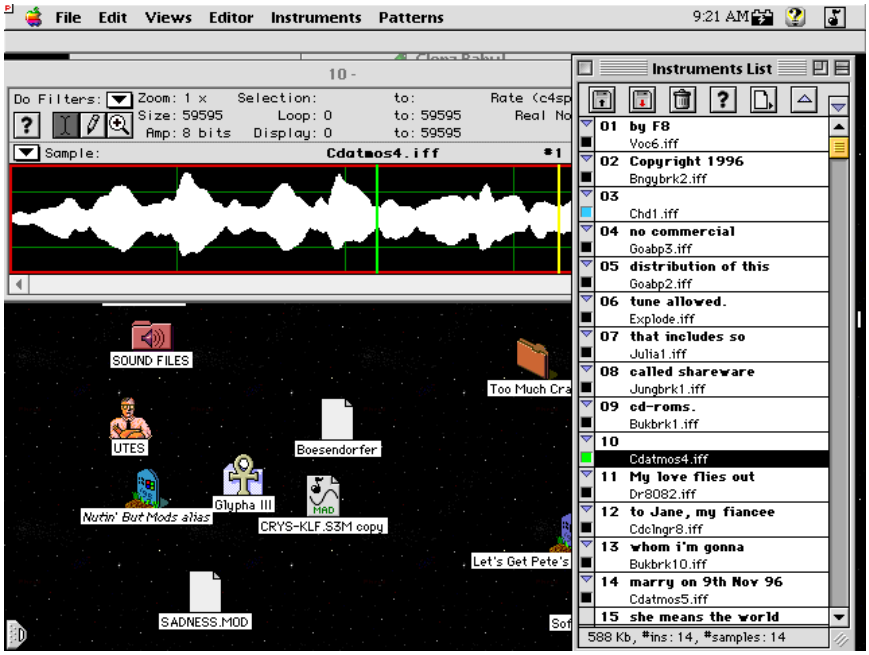


Figure 4. PlayerPRO Sample

mount in your system, everything runs rather slowly. Find what you want, copy it to your hard drive and eject the disk; save yourself some frustration! I got mine from these folks (call for pricing):

Software Hut
313 Henderson Dr.
Sharon Hill, PA 19079
(610) 586-5701

Also out is the Music Mod & Sound Effect CD (yes, another Amiga disk. This one is somewhat better behaved than the Sounds Teriffic disk). It has about 2,800 mods, 6,300 samples, etc. I got this one from an Amiga dealer in Bloomington, IN. You might want to write to or call the company that produced it:

BETTER CONCEPTS, Inc.
10 Mandon Terrace
New City (Yes, that's right: New City. I called and asked.), NY 10956
(914) 639-5085

"Okay...I've got the CDs, I've checked the BBSes and newsgroups...whose stuff should I listen to?" you ask. Another good question. Wish I had a good answer. Music is a highly personal thing; what I like, you may hate, and vice versa. A good bet is to go with the more popular authors. Right now, the names bandied about most in TraxWeekly and on the IRC channel #trax are: Basehead and Necros. I have sent Basehead's SMOOTH OPERATOR.S3M (No, not the Sade tune, alas!) and Necros'

Figure 5. Silence Is A Rhythm APP

THE GREY NOTE.S3M (saved as PlayerPRO self-running applications—you won't need PlayerPRO to hear these tunes) for uploading to the BBS. SMOOTH OPERATOR is a rather funky-jazz tune, with...um... "annihilating rhythm". THE GREY NOTE is a pretty interesting straight jazz tune—somehow Branford Marsalis got sampled for this one—a good one. When you listen to these, don't forget those headphones!

Both of these came courtesy of the Mod Anthology CD. Note that these songs' original format was S3M, which PlayerPRO won't play for you unless you are a registered user.

Other authors to check out include U4IA, Heatbeat, Di33y (yep, that's how

he spells it), Brainbug of Alcatraz, and a whole slew of others.

There used to be a "top 100" list published every month. Unfortunately, the last one came out in March of '95.

"Okay, I'm hooked! I'd like to hear these things as I'm driving to work. How do I record them?"

That's fairly easy. You need the following:

(1) your Mac (preferably with stereo output. If yours doesn't have it, borrow somebodies!)

(2) a boom box (or your home stereo) with RCA jacks (you'll just need two of 'em)

(3) an amplifier (hopefully included with the home stereo setup. I found one in a pawn shop for $45.00)

(4) some cables: two pairs of stereo cables with male plugs on both ends; two "Y" adaptors, both with two female jacks on one end and a stereo headphone plug (easily distinguished by the two stripes on the metal portion of the plug) on the other. Make sure you get the right size—the Mac's sound output port accepts stereo miniplugs (3.5mm or 1/8 inch plugs), while the standard headphone plugs are 1/4" plugs.

The Setup:

1. Connect the "Y" adaptors to one end of each of the cables.
2. Insert one of the headphone plugs into your Mac's sound output port.
3. Insert the other end of this cable into the RCA jacks on your amplifier; you'll want to use the ones marked "AUX".
4. Take the other cable and insert the headphone plug into the headphone jack on the amplifier.
5. Insert the remaining end (should be one with two male RCA plugs) into the RCA plugs on your boom box.
6. Set your function switch on your boom box to "LINE IN", and the function switch on your amplifier to "AUX".
7. Start your mod player and start your tape, and you should be recording mods with no problem.

I recommend using headphones in your boom box, though. Keeps the neighbors from complaining (which is good if you happen to live next to Rob and Wendy Whiner).

I've made two tapes in this fashion, with no problems at all; in fact, I mailed a copy to a friend of mine, and she was quite amazed at the quality of the tape, and asked me how I did it. I told her I was just an amazing kinda guy! (After she stopped laughing, I told her the truth. It took a few minutes for her to stop laughing, for some reason...)

"How do I go about writing my own tunes?" you ask.

For creating a song, PlayerPRO, MacMOD Pro, and Meditor share the same data input scheme used by the Amiga and "PeeCees," which looks something like this:

```
05  D 5  9 03
|   |  |    |
Sample Number  Effects
    Note  Octave
```

Hope that didn't scare you too much! If it did, don't worry...both PlayerPRO and MacMOD Pro allow you to use the Grand Staff to enter your song's notes. If you choose Meditor, you work with the style illustrated above. You can also use a MIDI keyboard to play your song in directly into PlayerPRO (couldn't test MacMOD Pro, remember?). I guess I should point out that I haven't tried this, not having a MIDI keyboard...yet.

Fortunately for you, I am not even remotely qualified to give anyone a lesson on writing their own mods—I've got five (count 'em, FIVE!) unfinished mods of my own sitting on my hard drive...somewhere—but I can recommend a few documents for you to get if I haven't discouraged you with that illustration of mod data input schemes. :0).

Signals #1–#5: This short-lived magazine was written entirely (well, mostly) by Necros some time back in the early 90's. Each issue contained several tips on writing your own mods, including how to put together a drum beat, how to use phase shifting for an added stereo effect, etc. Since the web page I got these from was dead the last time I checked (April '95), I have sent them in with the article to be uploaded to the BMUG BBS. Make sure that you use 10 point Courier to view all of these magazines, otherwise the illustrations won't line up properly.

Audiofile #1: This is a fairly recent (July '96) magazine edited by Basehead, a member of the group Five Musicians (along with the aforementioned Necros, Mellow-D, Big Jim and Stalker) loaded with tips by several musicians. I've sent this one, too.

TraxWeekly: This online magazine is, as its title suggests, a weekly; usually has reviews (of mods), news of contests and interviews. Issue #67 has an interview by Yours Truly with mod-god U4IA (my U4IA directory has about 100 items in it. Thanks to Kelly Fregien for downloading them for me...). I've also sent this issue to your friendly neighborhood editor for uploading to the BMUG BBS.

"Wow, cool beans!" you say. "Do you have any web addresses I should look at?" Actually, I do (um... "cool beans"?!!?). Bear in mind that some of these may not work, but here goes:

Players/Trackers:

The latest version of PlayerPRO can always be found here:
ftp://ftp.eskimo.com/~wormey/PlayerPro/

The ZSS Player (a mod/S3M player) should be here:
http://www.islandnet.com/~voltaire

Author of SoundApp (with latest version):
http://www.bitnova.com/franke/SoundApp

Authors:

U4IA's stuff is here:
http://sw.cse.bris.ac.uk/public/u4iamods.html

A U4IA mirror site:
http://www.warped.com/~u4ia

Sidewinder's stuff should be at this site:
http://nverenin.extern.ecsd.edu

Heatbeat's stuff should be here:
ftp://ftp.mpoli.fi./pub/starport/music/heatbeat

Necros' site:
ftp://ftp.mpoli.fi/pub/starport/music/necros
(note there should be a lot of authors represented here, each with their own directory)

The TimeLord's site:
http://www.phoenix.net/~dspyre/timelord.html

Rage's (mod writer interviewed in TraxWeekly #60) homepage:
http://lokki.edutec.pori.fi/~hablom/

Miss Saigon's site:
http://ubmail.ubalt.edu/~jsmith/jackie.html

Lizard King's site
(requires at least Netscape 2.0):
http://www.informatik.tu-muenchen.de/cgi-bin/nph gateway/hphalle4/~brandtf/lizardking.html

BlackWolf's page:
http://www.dave-world.net/~bwolf

This is page of the guy who made the "Twin Peaks" theme into a mod:
ftp://pepper.spice.com/pub/music/singapore/zane

General mod info and lotsa links:

http://www.csusm.edu/public/guests/fm
(warning: Graphics Intensive!)

http://www.teleport.com/~smithtl/modpage.htm

http://www.armory.com/~greebo/mod.html

http://www.netaxs.com/~am004d/mod.html

http://www.snafu.de/~madokan/

http://www.ee.ualberta.ca/~faiz/fat/www.html

FAQ for alt.binaries.sounds.mods:

http://www2.gvsu.edu/~behrensm/absm-faq/index.html

Search Engines:

Info-Mac Archives:
http://hyperarchive.lcs.mit.edu/HyperArchive/Abstracts/Recent-Summary.html

Aminet (the Amiga version of Info-Mac):
http://wuarchive.wustl.edu/aminetbin/find

New stuff on Aminet:
http://wuarchive.wustl.edu/~aminet/recentd.html
(NOTE: all of the Aminet stuff is compressed with LHArc. You will need MacLHA to decompress them; get it from the Info-Mac Archives, or from U4IA's page, both mentioned above)

What's that ya say? Ya say ya want more ftp sites? Okay:

ftp.germany.eu.net/pub/comp/amiga/mods

ftp.uni-muenster.de/pub/sounds/

ftp.brad.ac.uk/misc/mods/

ftp.funet.fi/pub/amiga/audio/modules

ftp.geocub.greco-prog.fr/pub/incoming/amiga/mods

ftp.uwp.edu/pub/music/sounds/mods

ftp.cso.uiuc.edu/pub/amiga

ftp.wuarchive.wustl.edu/systems/amiga/incoming/mods

ftp.wuarchive.wustl.edu/systems/amiga/audio/music

ftp.archive.orst.edu/pub/packages/gravis

ftp.wuarchive.wustl.edu/systems/ibmpc/ultrasound

ftp.nctuccca.edu.tw/PC/ultrasound

ftp.theoris.rz.uni-konstanz.de/pub/sound/gus

ftp.archive.epas.utoronto.ca/pub/pc/ultrasound/submit

ftp.archive.epas.utoronto.ca/pub/pc/ultrasound

ftp.garbo.uwasa.fi/mirror/ultrasound

ftp.wustl.edu/pub/aminet/mods

ftp.etsu.edu/pub/aminet/mods

ftp://ftp.amug.org

This was a short introduction to mods...just the tip of the iceberg, really. I didn't mention the yearly gatherings/demo contests/mod contests ("The Party" and "Assembly" both with substantial prizes to the winner), etc. If you're truly interested, you'll find all that stuff out on #trax and alt.binaries.sounds.mods. See you there!

*G.D. Warner has been using his Mac blissfully in his off time from work (aboard the USS CARL VINSON) happy to get away from the ships' LAN which has become the victim of the most recent Microsoft upgrade strategy: Microsoft Exchange (just say "no"!). (He *will* have full Internet access via a modem and his Mac by January, or *else*!")*

The Story of Martin's Surplus Software

How BMUG Inspired, Assisted, and Generally Changed the Life of Martin Fabian

by Michael Patrick Ellard

In early 1996, Martin Fabian was a man with a simple goal. An artist and writer, all he wanted was a copy of Photoshop so that could design some prototype greeting cards.

Martin had joined BMUG so that he could learn more about publishing on the Mac. In return for the help he was getting from BMUG, Martin decided that he would volunteer to help out at the April 1996 MacFest. MacFest is an annual Macintosh exposition hosted by BMUG and sponsored by Apple Computer. Entrance to MacFest is free to the public, but it takes a lot of volunteer power to make the whole thing happen.

At MacFest, Martin ended up working at the "Software Outlet Booth." At this booth, BMUG was giving away unused, shrink-wrapped software for a suggested donation. At first, Martin was pretty dubious—he didn't think that anyone would ever want some of the ancient software that he saw in front of him. And while Martin was able to buy a copy of PageMaker 4.2 from the booth for $30, there were no copies of Photoshop available.

When the doors of MacFest opened, the volunteers at the Software Outlet Booth were overwhelmed. Masses of people descended on the booth, and they wanted software. Spying Martin's copy of PageMaker stowed at the back of the booth, one person asked, "Is that yours? I'll give you $50 for that $30 copy of PageMaker!" Another person countered, "I'll give you $70!"

A couple of days after MacFest, Martin was driving in his car when he saw a sign that said, "High Tech Garage Sale!" Martin pulled over to take a look, and was surprised to see that the person holding the garage sale had some really neat and interesting stuff. Remembering his experience at MacFest, Martin told the man holding the sale, "You have some great stuff here. If you took it to a flea market you could make some good money selling it." The man shrugged his shoulders and said, "I don't have the time to do that myself. Why don't you buy everything and take it to the flea market yourself?"

At this point, the wheels started turning in Martin's head. Thinking back to the frenzy at MacFest, he thought, "If I bought some of this stuff and sold it at a flea market, I could make some real money. If I kept at it for a while, I could even make enough to afford my own copy of Photoshop!"

Martin was hooked. Remembering the software packages that had sold well at MacFest, he bought similar packages from the "High Tech Yard Sale," and later bought some additional software at a Wells Fargo auction. On Martin's first trip to the flea market, he had forty software packages to sell. He sold about half of these, and this made enough money to convince Martin that the flea market was worth a second shot. More importantly, many people came up to Martin asking, "Do you want to buy our surplus software? We bought a bunch of software that we've never used, and we'd love to sell it to you."

At this point, Martin knew he couldn't lose. He would either get enough money to buy his own copy of Photoshop, or someone would come up to him with an old copy of Photoshop that Martin could buy. Martin's goal was in sight.

Over time, however, Martin's goals changed. As he continued to sell software, he realized that he was having a lot of fun doing it. He was selling educational software to families that couldn't otherwise afford it, and business software to people with older machines who couldn't run the most recent releases. He was also learning more about the computer industry, and making contacts everywhere.

Six months later, Martin has an established business selling surplus Mac and PC software. Some of his popular titles have been "1200 Hit Games" and WriteNow 4.0. WriteNow sells for around $50 on the street, but Martin sells it for $14.75 to BMUG members and $16.95 to non-members. "1200 Hit Games" sells for $10.95 to the general public and $8.25 to BMUG members.

Martin has also continued to draw on BMUG's resources to help him in his business. As he says, "If I need to know what features a program has or what machines it is compatible with, I ask BMUG. They've never let me down." Martin has also become something of a BMUG character himself. As he says, "Now sometimes when I come to BMUG, people ask me questions and I find that I can answer them. I guess I'm not so much of a beginner anymore."

And Photoshop? Martin has nine copies of Photoshop now. He's giving a discount to BMUG members if you're interested.

Martin Fabian is a BMUG member and volunteer who runs "Martin's Surplus Software" in his spare time. You can email him at martins@ccnet.com or contact him via phone at (510) 317-1900. The mailing address for Martin's Surplus Software is 3056 Castro Valley Boulevard, Suite 19, Castro Valley, CA 94546.

Michael Patrick Ellard is computer consultant who specializes in providing simple solutions to complicated information technology problems. His clients include Apple Computer and Southern California Gas. He can be reached at (510) 236-3033, at MikeEllard@aol.com, or via his homepage at http://www.mcgi.com/staff/ellard.html. Mr. Ellard has been a BMUG volunteer since 1986. He currently serves as the Treasurer of the BMUG Board of Directors.

Ashes, Ashes… All Fall Down

by Leroy Sprinz

Once there. … Where? … Circuit-here, ether-where. … Cybersurf, that's here, there, where.

Once my ancient Titus connected … . One more mountain? … Chasm? … Maybe imagined figment? … One something or moment fewer. Others surround and in-between abound.

Surfing ruptures the balloons that hardware and software touters inflate. Web site-checking with a MacWeb-ed SE cancels sights and sounds, color and motion, desktop-theatered reality. Word residue approximates some unity and coherence: repetition jerry-builds singularity and ashen remains.

One balloon, bubble, cloud grows ominously. The wall-writing becomes increasingly clear and provoking: "Get a new machine!" It grows so big, expands to transparency, absorbs moon beams.

Computers have rarely complemented my play or work. My first, a Timex, consumed hours of time and energy without yielding commensurate results. A 1982 KayPro 10 did yield pages of tests and commentary for my classrooms. It transcribed many of my serious attempts to write figuratively. And it organized the numbers of a championship high school baseball season. But again and again my focus blurred as dreams of using it to produce graphics confounded my skill. The first Mac appeared just as I despaired. Then I spent a summer pixel-by-pixel forming images that soon-available Clip Art rendered useless.

Thirteen. I've been Mac-ing for thirteen years. … Ah! Perhaps I've discovered the source of my wheel-spinning: thirteen! Thirteen years of slipping, sliding; some advances, many more backslides. … For thirteen years of Mac dependency (first, upon one of the earliest 128k's, eventually upgraded to a Plus; then/now, on one of the first SE's, upgraded in 1990 with an 68030 accelerator and 16 megs of RAM) I've dreamed of Mac-scribing music and word compositions and complementing them with Mac-graphics. The reality has been thirteen years of incompatibilities and rarely rewarded questing for the program that will transform my hybrid into a transparent aide.

That the thirteen becoming fourteen may make a difference has precedent. The second of these fourteen years brought Microsoft Works into my Mac. Almost immediately I decided that tracking finances on a customized spreadsheet would ease number searching at IRS time. It did! Hours spent duplicating the 1040 and its formulas made March a pleasant precursor of April 15. Managing Your Money and hours of data inputting made tax time less threatening; Quicken and more hours of inputting continue my Mac's mastery of April.

Perhaps in my fourteenth year of Mac-ing, I'll resume musicking. Perhaps I'll cease the search for some genie to organize the various beginnings and rough drafts that my hard drives store, for the automatic file saver that does not conflict with something or other. Perhaps I'll give more time to capturing dreams rather than to configuring WebArranger™ or customizing some HyperCard stack.

Cybersurfing has prompted this sanity. Titus, true to his SE genes, filters my Web experience. He mutes multimedia bells and whistles, bares the message to its insubstantial bones. What affects my consciousness suggests that crafted symbols, ingeniously sculpted, promise food for the soul. Titus messages that fastest, newest, everything-est does not host communion.

BMUG Meets MicroTimes 16

by David Morgenstern

Sweet sixteen

There's a rabbinic saying: "Many see, but few understand." Certainly this adage applies to BMUGers. They not only see and understand, but also more importantly, act on that understanding. Without this combination of understanding and deeds, BMUG would not exist.

Over the past twelve years, our group has been a conduit for reliable information and offering a means for people to help each other with computing problems. It doesn't matter if a problem is "simple," or complicated—it's all the same.

This is the energy and spirit that has kept BMUG as a primary force for good, while other groups have fallen by the wayside. Even with the increased virtual connection of users the Internet, our weekly main meeting is still a knowledge and rumor center par excellence. Our office is the crossroads of the Macintosh world.

There are many roads to participate at BMUG. The first and foremost is membership. After signing up, there are a variety of ways to join in the fun: participation on the Planet BMUG at meetings, talking to people on the Helpline, and working on our publications. Some of the crew are newbies, just beginning to use their Macs, while others are power users. It's a great group effort.

For the past eight years, one of my BMUG duties has been to write a column about the Mac in "MicroTimes: California's Computer Magazine," a great 300+ page monthly magazine available for free in newsstands. It covers everything from the Internet to UNIX hacking.

MicroTimes
BAM Media Inc.
3470 Buskirk Avenue
Pleasant Hill, CA 94523
www.microtimes.com. 1
4 Issues, US
1st Class: $65, and 4th Class: $35
Overseas Surface $50 (6-10 weeks)

We thought the column would be a good way to keep California members, as well as non-members, up to date on tips and news in between our semi-annual newsletters. And we were correct. Unlike today with the Net-connected Planet BMUG bulletin board system, in those days BMUG had only a single line for the BBS, which made it difficult to reach members outside the San Francisco Bay Area.

The medieval rabbi Ibn Zabara said, "Before trouble comes, obtain advice; after it comes, advice is useless." This is true, but it assumes a good source of advice.

I was persuaded that the column would be "a piece of cake" to write and all I would have to do is put down verbatim the Thursday nite meeting's question-and-answer session, and explain the problems encountered on the Helpline. Steve Costa said, "It'll only take a couple of hours to write."

As it turned out, the minutes' outline format was not editorially acceptable to MicroTimes, so I had to sharpen my writing and reporting skills.

Almost nine years later, BMUG and the column are still going strong. I am now News Editor at *MacWEEK* and couldn't be happier. Because of *MacWEEK*'s deadlines, I can't attend the Thursday nite meetings, however, I usually can be found at the monthly BMUG West meetings in San Francisco. Long live BMUG and the Mac!

This article is a compendium of the last half year's columns, so some of the bytes and pieces will be passé and old hat to you. We all know how quickly the

[Longtime developers] were more concerned about Apple's commitment to license the Mac operating system, and competition—not from Windows95 as much as from Apple itself.

Macintosh scene can change. Planet BMUG is a great place to check up on the latest and greatest.

It is a great privilege to write under the BMUG banner. The helping and giving that comes from our group embodies the spirit of computing. I thank the many BMUGers that have sent me personal stories and tips for the column—please keep them coming.

My special thanks to Raines Cohen, Lorca Hanns, Ron Hipshman, Stephen Howard, Robert Lettieri, David Schwartz and Fred Swan.

June

This month we take a tour around some of the comings and goings-on at the recent Apple's Worldwide Developers Conference, held in San Jose in May. It was great fun, even though the press was only invited one day. But there were members of the BMUG programming special interest group in attendance, who filled in any knowledge gaps.

But in case someone was home with the flu—or just didn't want to cough up the expenses for a trip to the Silicon Valley—Apple provided a multimedia Web-cast of the event on the Internet. Very nice.

The column will also have a handful of tips and news. Onward.

By the WWDC

While the annual conference is normally a hotbed of activity for Mac codemeisters and an opportunity for programmers to get the latest word on system software and tools, this year's event served a dual purpose. It featured the unveiling of Dr. Gil Amelio's strategy to get Apple back on track.

Dr. G. outlined a new strategy that pushes the Internet and seeks to find new users for the Macintosh. He seemed a bit nervous at first, but soon warmed up. He seems like a solid kinda guy.

In addition to improving the already easy-to-use Mac interface, Apple needs to stress reliability, Amelio said. Last winter the company formed a council to beef up quality and Amelio recently named a new vice president to make sure things get done right. Analysts said that the new veep will also look over everyone's shoulders and coordinate the various technofiefdoms that exist in Apple.

Gregory Miller, an 11-year old student at a Bay Area school showed off a plant life-cycle simulation done by a student and a Pachinko mathematics game that lets kids analyze probabilities. "Even I can become a developer," Greg said. "I'm your competition. Be afraid. Be very afraid."

Apple will follow the lead of the automotive industry, which has cut costs by using fewer custom parts and employing identical parts across product lines. It will also reduce the myriad of board designs and models—over the next year.

As with any new vision comes a reorganization plan. Amelio divided the company into new divisions, most of which begin with the letter 'A.' AppleSoft will be in charge of software (that was a tough one to guess, huh?); AppleNet will tackle the Internet; and Apple Assist will provide customer support.

Formerly Apple's R&D operation, the Advanced Technology Group will also create "concept configurations," which look to be souped-up hot-rod models (another way of saying expensive). The Alternative Platforms division will be in charge of the forthcoming PowerPC Platform designs that can run a variety of operating systems in addition to the Mac, as well as other non-Mac servers, like the Shiner Unix server introduced in February.

The non-letter-A divisions include the Macintosh group, which will develop Mac hardware; the Information Appliances division to handle the Newton personal digital assistants and the new Pippin game/Internet player; and finally the Imaging group for printers, scanners and digital cameras.

But to some longtime developers these reorganizations are old hat. They were more concerned about Apple's commitment to license the Mac operating system, and competition—not from Windows 95 as much as from Apple itself.

Several programmers said they looked forward to Mac clones that will give them a crop of new users and new opportunities for sales. But they also worried that Apple will push its way into their markets with competing software.

The original Mac started out with a bundle of software, and the Performa models come with a load of Apple and third-party titles. But Apple and its Claris software arm have not dominated as many product categories as Microsoft does on the Windows side of the fence.

But the developers are looking over their shoulders and sweating. And whining. Who can blame them?

A Cup of Cocoa

The event was not solely speeches and slides—there was also a bunch of product demonstrations.

One of the best was for Cocoa, previously known as KidSim. The future product is the result of an educational research project by the Advanced Technology Group and lets children create their own simulations and games.

The software is an visual object-oriented language that lets kids cut and paste graphic images, which are governed by rules and properties. It's very easy to understand and provides a drag and drop interface.

Gregory Miller, an 11-year old student at a Bay Area school showed off a plant life-cycle simulation done by a student and a Pachinko mathematics game that lets kids analyze probabilities. "Even I can become a developer," Greg said. "I'm your competition. Be afraid. Be very afraid."

While the crowd laughed at the joke, it really held the germ of truth. This powerful educational tool can introduce programming concepts and get kids involved in the creation of digital content—better than some of the stuff that's being hawked at the trade shows.

In addition, Apple will give schools and the young programmers an easy way to share their work with others. Cocoa will come with a Netscape Navigator plug-in that will let other kids use the simulations on a local network, or over the Internet.

It's the Nose, er Interface.

The unseasonable rain in late spring in the Bay Area restarted the grass-pollen life cycle and sent my allergy-prone nose into overdrive. It also made me appreciate Apple's interface gurus all over again.

My wife, who does not suffer from allergies and has little sympathy for my semi-stoic sniffles, bought a box of Ultra tissues. The Ultra model of kleenex are slathered with a fine powdery chemical goop that is supposed to make your nose feel better after it's been wiped a million times. It works.

But these tissues are not really tissues; rather, they are vehicles for medication. They have the appearance of tissues and even the initial feel of tissues, but they fail when used for some day to day tasks.

True tissues are simply soft paper. And that's all. No goop. If I need to apply some medicinal powder or unguent to my nose, I can daub it on in a separate operation.

How does this rant relate to computers? Here's the pitch: Something can have the appearance of functionality or a great price, but not cut the mustard in real-world use. This is true of computer interfaces and hardware as well as goopy kleenex.

Let's take a long excursion around the Network Computer concept to see this in action.

The Network Computer is Oracle's proposed standard for cheap consumer-market computing devices. The models are expected to cost between $400 and $800.

It's something more than a game machine and less than a regular computer. It can use a television as a display and is aimed at getting more users out on the Internet.

A lot of people pooh-pooh this idea (other than the low cost) even though they have different pieces of audio equipment scattered around the house. Consumers are pleased to purchase small radios for the bathroom and in clocks as well as big systems for the living room. Why not with computers?

Apple already has a box that fits the Net Computer bill: the Pippin. It's a low-cost consumer Mac clone that Apple licenses to other companies.

In September, Bandai Digital Entertainment Corp. will sell its $599 Pippin @World, which has been shipping in Japan since March. At the WWDC, Apple's Dr. G said the company will ship its own Internet-oriented version of the Pippin.

Sometimes more is better: there's a primary relationship between performance (how fast you get your finished pages in the tray) and how much dough you're willing to outlay.

Bandai's @World will use a television set as its display and boot off a CD-ROM. The box will have modern Mac look inside the case; it will run a 66-MHz PowerPC 603 chip and come with 6 megs of RAM.

In addition, it will come standard with a pair of input devices: a game controller in the shape of a boomerang and a folding keyboard that offers an integrated graphics tablet.

However, some PC clone vendors are piggy backing on the Net Computer excitement and will offer very cheap Windows boxes. I pity users that pick up these machines thinking they are getting a bargain. Instead, they will buy the computer equivalent of the powdery tissue.

Windows is not an interface designed for a consumer product. But neither is the Mac, you may say. That is true, but the Pippin doesn't really offer the full Mac interface.

Pippin boots off a CD-ROM and lets developers present users with an application-oriented approach to computing. This is perfect for Web browsing, games and educational titles. Most of the time, users will not really experience the Mac side of the Pippin operating system; although they will benefit from all of the underlying technology, such as QuickTime.

Even better for developers (and users), the CD-ROM scheme lets authors test programs on a stable platform and reduce costs for technical support. Since a title must run off a locked volume instead of a hard drive, users can't screw things up with extensions and RAM resident programs. This will likely not be the case with cheap Windows boxes.

I bet the low-cost Windows set-top units will run fast, but they will suffer from the same usability problems as their desktop cousins. Good luck with technical support—but then typical PC customers don't expect much in the way of support.

We will see if "typical" applies to the new audience for these computing thingamabobs.

Tip City

Here are a few tips that floated my way on Planet BMUG, our bulletin board system:

- There are a batch of new cross-platform macro viruses for Microsoft Word

6.0. The new trio is Imposter, Concept Francais, and Wazzu. These viruses are mainly benign, but can screw up data or interfere with usual Save commands.

The Imposter virus is based on the DMV macro virus. When the macro runs it creates a message box named DMV.

The Concept Francais macro is the French version of the widespread Concept macro virus, also known as Word Macro 9508. Fortunately, the Wazzu virus, which rearranges words in a document, does not spread on Macs.

Many commercial antivirus products deal with these new macros, so make sure you're running the latest versions and get the updater to deal with these pests.

- If you're running QuickDraw GX, you will enjoy OnPage GX, a new printing utility from Computer:applications Inc. of Raleigh, N.C.

While the standard GX package can handle most PostScript printers, it can't access the goodies that many mid-range and high-performance network printers offer. These features can include multiple input trays, sorters, collators, envelope feeder and more.

With OnPage GX you can access these features if there's a PostScript Printer Description file (usually called a PPD) for the printer. PPDs are used by the LaserWriter 8 driver. The company said the driver understands the PPD information about the special features and makes it available in the GX dialog box and GX's desktop printer.

It also lets users fool around with font substitution and create custom tables. It takes a look at the fonts installed on the system and the those built into the printers and stored on a font hard drives. Users can set which fonts will be downloaded or substituted, which can speed up output times.

Computer:applications Inc.
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fax: (919) 846-1412;
http://www.caidesign.com/

It's great to carry your PowerBook everywhere, but there's a big difference between the four to seven pounds for a notebook system and the one pound weight of a MessagePad.

July

This month is printing month for the BMUG column, with a look at the latest specialty driver and utility software. A pair of the products extend the usefulness of Apple's QuickDraw GX technology that comes with System 7.5, while another works with an ordinary GX-less installation.

In addition, I'll run down a tip from the BMUG Helpline and give you some news from PC Expo, a New York show held in June.

Mindful Output

Years ago, printers were one of the big headaches for Mac users. While everyone had a pioneer forgiveness about the tendinitis induced by the endless swapping of floppy diskettes needed to use the first generation of Macs, few people could understand how such a ubiquitous technology could cause so many problems.

Every BMUG meeting had a section devoted to printer problems. This was the era of impact printers with pin-feed paper, which caused many difficulties, but there were also growing pains with some PostScript laser printers.

Today's laser and inkjet printers offer such strong performance and value that there are few complaints—other than the timeless complaint about slow print times. Sometimes more is better: there's a primary relationship between performance (how fast you get your finished pages in the tray) and how much dough you're willing to outlay. A laser printer almost always faster than an inkjet. And more expensive.

But hardware is not the only part of the equation for print performance. Software also has a place.

I recently saw a demonstration of LaserMerge Electronic Paper 2.0, a new printing utility from MindGate Technologies. It has a boatload of interesting features, many of which are found in QuickDraw GX.

While the GX printing architecture has gained most of the attention of developers over the past year, the $95 Electronic Paper works with any Mac running System 7.x.

The software lets you scale and rotate text from any application, even in a simple editor or database program. You can also put "watermarks," which are gray or colored words or an image that floats behind the primary text on a page.

Electronic Paper works by creating a special software layer between the Mac a printing device, including a fax modem. The layer holds print templates that can apply effects to just parts of a page, or simple adjustments to the whole. If you're working with a database program or mail merging a list and can't seem to get certain text placed exactly in the right place, you can make the small tweaks in the Electronic Paper template instead of with the application.

In addition, the templates let you create pamphlets or layout text automatically for day-planners. These are capabilities found in some personal information manager applications, as well as standard and QuickDraw GX utilities.

It also supports a caching feature found in PostScript Level 2 printers that can store an image or text (like letterhead) and then stamp it on subsequent pages and jobs. This caching can really speed up print jobs since the images usually need to be resent each time they're used. Time is cash, they say.

LaserMerge comes with a designer application that lets you create the printing templates. It sports about 40 commands for fooling around with text formatting, including automatic bar-codes and serial numbering.

If you have a competing print utility, you can pick up LaserMerge for $40.

MindGate Technologies Inc.
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fax (615) 937-6801
sales@mindgate.com
http://www.mindgate.com

Oops. I also now see that I repeated myself from last month's column with the OnPage GX driver. daviD

Gee Whiz GX

GX is coming on strong nowadays. It doesn't require as much memory as it once did and its starting to be used by non-printing applications, such as a forthcoming low-price video editing package from Digerati Multimedia Inc. of Santa Cruz.

Computer:applications, a vendor of printer drivers for Macs and PCs, recently extended the usefulness of GX with a neat addition to the company's $129.95 OnPage driver package.

OnPage GX takes the PostScript Printer Description (PPD) settings used by LaserWriter 8.x and lets users select them in the standard GX print dialog box.

This utility fixes a problem that GX users face—they can't access many of the cool features found in some PostScript printers, especially high-performance network models, unless there is a GX-specific driver. So if there's a PPD for a printer (and there's almost always one), OnPage GX users can select from all the features that are available, such as built-in envelope and specific paper trays, stapling, collation, and booklet printing.

The company also makes a GX driver for HP PCL-compatible laser printers. Its MacJET GX driver, priced the same as OnPage GX, knows about various flavors of HP GL, a common language used in PC-market printers instead of PostScript. These printers are usually cheaper than PostScript versions.

In addition, both the MacJET and OnPage GX drivers give users better control over fonts via custom tables for font downloading and substitution. For example, you can tell the printer to use a built-in font for a one that is usually downloaded.

Standing tall in the Big Apple

As one might expect from its moniker, PC Expo is not the highlight of Apple's yearly calendar—even though it's held in the Big Apple. The show is focused primarily on business computing with PC running some Intel-ish processor.

Ignoring the usual summer doses of hot rain and traffic snarls, more than 130,000 attendees turned out for the show. The global Internet buzz drew many walk-ins, but most of them were discouraged by long check-in lines that required a wait of more than two hours.

Even after making it through ú⁄v-eral queues to pay and register for the Expo, the newbies were then faced by the usual bewildering jumble ò¤ booths in the multilevel Javits exhibition center. Much like the Internet's actual widespread physical makeup, the Net-centric products were to be found in almost all booths. But it's a wunderful town—er, tech!

Apple, IBM and Motorola showed a working PowerPC Platform machine, previously called CHRP (Common Hardware Reference Platform). It ran Win NT and then could immediately reboot with the Mac OS (System 7.5.x.). I was told these machines will ship from several vendors in the late fall.

The Apple product that gained a lot of respect from this PC-oriented crowd was the Newton. The pavilion was packed with attendees checking out the personal digital assistant. Hello!

After the Newton's original over-hyped do-it-all marketing approach was nixed, Apple has tried a vertical-market focus for the Newton. It seems to be working with the business-oriented PC Expo crowd. Several companies with client-server databases are using the MessagePad for remote connections; some of them do not offer a Mac client and use the Newton's Windows-based software for synchronization with desktop systems.

Apple took the opportunity to release its Newton Internet Enabler 1.0 (NIE); which lets devices running Version 2.0 of the Newton OS hook up with TCP/IP networks for services such as Web access and e-mail. Many vendors showed wireless connections via PC Card modems. Very cool.

There were a number of demonstrations of email applications let people pick up and send their mail from the Newton. The combo of the MessagePad 130 and the vastly-improved Newt OS 2.0 is sharp. It's great to carry your PowerBook everywhere, but there's a big difference between the four to seven pounds for a notebook system and the one pound weight of a MessagePad.

There were also a number of Web browsers for the Newton. Of course, a small monochrome screen isn't going to

Fortunately for the neighborhood and my stomach lining, attending BMUG meetings and connecting with fellow Mac fans on the Planet BMUG online service puts me in a better mood. These are the universal antidote for grumpy Mac-philes.

rival a desktop machine with a color monitor, but the new products let you remotely access Internet-based resources or corporate intranets.

I was really impressed with the beta of Newt's Cape Version 1.3 browser, a shareware product from the team of Steve Weyer and Greg Simon. The $35 software lets users create and save Web pages in NewtonBook format for viewing later. Newt's Cape Version 1.2 is available at http://www.netaxs.com/~weyer/newton/newtscape.html.

Apple's NIE is available at http://dev.info.apple.com/newton/tools/nie.html.

Sony Electronics Inc. made a big splash with VAIO, its first computer systems aimed at the U.S. consumer market. The machines are a pair of minitower Windows 95 systems priced between $2,000 and $3,000 that have multimedia monitors. Both sport a high-style gun-metal gray enclosure as well as a software interface called VAIO Space (VAIO stands for video audio integrated operation). Catchy.

The boxes also offer a rich assortment of names, which may lead to confusion on the retailer front. In addition to the VAIO sobriquet stamped on the case, the models are called the PC by Sony as well as the PVC-70 and PVC-90.

It will be interesting to see how Sony finds handling a support operation for Win 95 computers, rather than just consumer products and computer peripherals. This is a big leap for Sony and it's easy to misstep.

Beautiful industrial design for enclosures is great, but usability for computers is primarily found in system and application software interfaces. Integration of software with hardware is icing—an area where Apple continues to hold a lead.

EDOs and Don'ts

There's a popular type of memory called EDO (extended data-out) memory that can boost performance in some PC systems. At the moment, Macintosh computers cannot take advantage of EDO DIMMs, but several forthcoming Mac models will be able to.

However, the Power Mac 7500, 7600, 8500, and 9500 models can handle EDO memory, even though there's no performance gains. But what is good for one Mac is not good for all models and EDO can damage a computer.

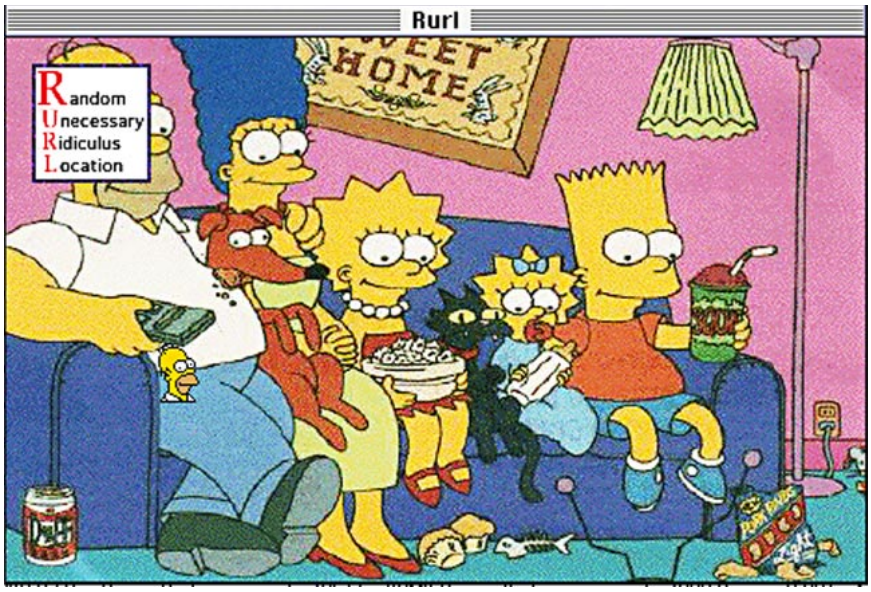

Figure 1. Hungry Homer, by Sean Harper and Jesse Boettcher, is a hack game that uses Apple Events and Netscape Navigator. You maneuver the small Homer head to floating boxes, which then will send you to different pages on the Web, such as Apple's home page.

As you can see, the Power Mac 7200 is missing from the approved list. Beware! Apple said EDO memory can screw up the motherboard and any non-EDO DIMMs in the machine. The Performa 5400 is still being looked at for compatibility, so it's better to play it safe right now and not install EDO in flavors of this model.

August

The month of July can get under the skin. If you're living almost anywhere but in San Francisco, it's hot. Way hot. And this summer, even the City by the Bay was much too toasty for cold-blooded comfort.

And then there are the neighborhood kids, who seemingly yell all day and all night. Am I in a curmudgeon funk? You bet, but I can't help it. The waiting is driving me batty.

But contrary to expectations, I'm not waiting for the start of school—rather, for August's Macworld Expo in Boston.

Fortunately for the neighborhood and my stomach lining, attending BMUG meetings and connecting with fellow Mac fans on the Planet BMUG online service puts me in a better mood. These are the universal antidote for grumpy Mac-philes.

This month we've got some news from MacHack, the recent Macintosh programmers conference. We will also take a look at some of the latest entry-level Macs and clones that will be on the shelves in the fall semester. Onward!

Hack Talk

Every year a few hundred bright Macintosh programming stars trek to Michigan for MacHack, a conference put on by the MacHax Group. This 11th annual get-together was held in Dearborn.

The code-meisters have evolved several semi-ritual activities over the years: the Bash Apple session, where the developers give management and an earful; the creation of a wish-list for Apple top brass; a trip to see a summer blockbuster (imagine a Mystery-Science-Theater-3000-like visit to a cinema with a hundred rowdy Mac geeks); and a contest of hacks, some of which are thought up and coded at the event.

The contest is called the Hack Show and this year lasted about five hours, due primarily to the large number of entries—fifty-eight. Previous winners have gone on to become products or to be incorporated into larger programs, such as NetBunny, Oscar the Grouch, and VideoBeep.

Some of the hacks are useful, while others are less so. The third-place prize was awarded to Dave Johnson for FinderFlocks. It automatically groups the icons in the front window and then lifts them off the window as if they were a flock of birds. Then the icons fly around the display. Cuckoo!

Fourth place went to Power Windows, a nice user-interface feature by Greg Landweber. When you drag a window it turns translucent.

Matt Foster reportedly wowed the crowd with BreakArt, which took second prize, a red clay brick purchased along with the rest of the "prizes" in a local hardware store.

BreakArt is a set of Adobe Illustrator 6.0 plug-ins that turns the graphics program into the classic video game of Breakout. You can turn an image into the wall of bricks and apply different transform effects.

Booting Gallery, a group effort from Jorg Brown, Bill Hubauer, and John and Sheila Wallace, took the first-place prize. The software takes the icons of extensions that checker the screen at boot time and tosses them into shoot-em-up games, Duck Shoot and Asteroids. According to Scott Boyd, partner at The Mac Group of San Mateo, Calif., it followed the pattern of some previous winners. "It looked good, it was very seriously hacked, the authors gave an excellent presentation, and it directed violence at inanimate objects," Boyd said.

BMUGer Eric Slosser, a coding guru at Apple, showed off the PowerBreakfastBook. After the overheating battery and bug problems with the PowerPC-based PowerBook 5300, he said Apple had retrofitted the models to do dual duty for computing and cooking. …

BMUGer Eric Slosser, a coding guru at Apple, showed off the PowerBreakfastBook. After the overheating battery and bug problems with the PowerPC-based PowerBook 5300, he said Apple had retrofitted the models to do dual duty for computing and cooking.

The notebook was reportedly outfitted with Teflon keys, which let it cook waffles or pancakes, of users use the griddle module.

Eric demonstrated the feature by pouring waffle batter into the laptop and closing the lid. Seconds later, he opened the top and took out a cooked waffle. Eric also said the PowerBreakfastBook includes a Cereal port. Fabulous!

The group will publish a $50 CD-ROM from the conference that includes many of the hacks as well as source code. Further ordering information is available at cd@machack.com.

Backup to school

Parents are looking forward to the kids heading back to school, and perhaps adding a new Macintosh to assist in the education of the little, or not-so-little, darling.

But this year, families can better hold to a budget and still buy a Mac. Just in time for the fall semester, Apple and several clone companies will introduce new lines of low-cost Mac OS systems in August. Most of the computers will come with software bundles aimed at kids in grade school, high school students or collegians.

All of these new systems use the latest version of the PowerPC 603 processor, which was initially used in the PowerMac 5200, Apple's all-in-one education-market computer introduced in 1995. The chip is designed to use less power than the high-performance PowerPC 604 flavors used in the Power Mac series.

The new 603 versions have been tweeked for better performance and have an "e" for "enhanced" after the numeric. Even better, the new processors, or CPUs (central processing unit), have much faster clock speeds than the previous generation.

Eric demonstrated … by pouring waffle batter into the laptop and closing the lid. Seconds later, he opened the top and took out a cooked waffle.

Clock speed is the measure of how fast a computer crunches instructions; it is counted in megahertz , or millions of operations per second. The original 603 was around 75 megahertz; the latest enhanced versions are from 140 to 240 megahertz.

However, don't confuse the logical operations of a processor with actual commands by users, such as clicking on a file icon and opening it. An operation is a tiny event, one very small step for silicon-kind; even the smallest user-initiated action is constructed from thousands of operations.

Un-ivory towers

The new low-cost systems will come from Apple, Power Computing Corp. and UMAX Computer Corp. In addition, Motorola Computer Group is reportedly developing several models in this class.

[M]initowers give an impression of power; they look like buff workstations. Some users think they take up less space on the desktop, however the monitor is usually the determining factor for what can go where.

While everyone will recognize the low-slung, pizza-box look of some of these machines, several vendors will also have configurations in tower-style cases. You might ask if a minitower case is any better than a slim-line enclosure or a mid-size desktop style?

Of course not, other than some of the smaller enclosures cannot hold as many PCI cards, or must use half-size boards. However, most Mac users haven't added these expansion cards to their systems—but this pattern may change as the prices for add-ons fall. For example, Iomega recently said it will offer a Fast SCSI-2 PCI card for $99.

But the minitowers give an impression of power; they look like buff workstations. Some users think they take up less space on the desktop, however the monitor is usually the determining factor for what can go where.

Apple will take the wraps off a pair of new minitower systems: Performa 6400 models with either 180- or 200-megahertz 603e processors. Code-named Instatower, the faster box will cost about $3,000; the other will be about $2,400.

At the Boston Expo, mail-order vendor Power Computing, based in Round Rock, Texas, will take the wraps off PowerBase, its new family of computers.

The PowerBase systems will cost about $1,500, $1,800 and $2,200, respectively, for models with PowerPC 603e processors running at 180-, 200- and 240 megahertz.

The systems will offer three PCI slots and purchasers can choose between minitower or low-profile desktop enclosures.

Well known by longtime Mac users as a scanner company, UMAX Computer Corp. of Fremont, Calif. will introduce a quartet of low-cost Mac-compatibles. The models are expected to ship in September.

UMAX's new SuperMac C500 models will come in slim-line cases and run 140- and 160-megahertz chips; they will cost $1,600 and $1,700, respectively. The smaller case can hold one full-length and one 7-inch PCI cards.

The minitower SuperMac C600 systems will cost $2,200 and $2,600, respectively, for 180- and 200-megahertz processors. The minitower box will hold three full-length slots.

Many of these new Mac OS systems will come from the vendors with 16 megs of memory. It's a good idea to add more and RAM is inexpensive right now.

In addition, most of these systems will come standard with an 8x CD-ROM mechanism. The low-end models usually have a 1-gig Enhanced IDE disk drive; the higher-speed configurations may have a 2-gig drive. The Integrated Drive Electronics standard is used in most PC computers for hard drives and last year started showing up in low-cost Macs and some PowerBooks.

So which one is the best to buy? The fastest? The cheapest? The Mac with the tony case? Or the demo model that little Johnny tips over on the store?

Buy whichever system you want, in the manner that makes you the most comfortable. They all appear to be good machines and each has its share of pluses.

Some users will choose the PowerBase and order by mail. I like to buy computer hardware from a store, so I'd find Apple and UMAX models in the distribution channel.

When you compare any system don't just look at the processor speed. Check out the complete package, including memory, keyboard, monitor. and software bundle.

Also, the Apple Performas and the company's recently announced faster models of the PowerMac 7600, PowerMac 8500 and PowerMac 9500, will be offered at nice discount for higher education students. Families should look closely at these prices.

As I mentioned in a column last year, there's a dilemma with deciding the Mac that college students should buy. Some kids will pitch the PowerBook, which has the mobile advantage of being able to be carried into the library or classroom. Notebooks also have the mobile disadvantage of being easy to steal. Don't get carried away!

However, the choice may be moot this fall. Apple has been having trouble getting its revamped PowerBook 5300 and PowerBook 190 notebooks into stores.

Bytes and Pieces

Here are several items that recently crossed over the electronic transom:

- What's in a word? I appreciated the thought, but not the exact expression

When you compare any system don't just look at the processor speed. Check out the complete package, including memory, keyboard, monitor. and software bundle.

[T]here's a dilemma with deciding the Mac that college students should buy. Some kids will pitch the PowerBook, which has the mobile advantage of being able to be carried into the library or classroom. Notebooks also have the mobile disadvantage of being easy to steal.

in a recent editorial supporting the Mac platform. It came from Cheryl England, editor in chief of Mac Addict, a new publication of Imagine Publishing Inc. in Brisbane, Calif.

"For those doomsayers out there who predict the Mac is dead, we say the Mac isn't going anywhere and we're living proof," England said in the editorial, which was bandied about on the Net and even in a press release.

I'm certain that she meant to say that the Mac wasn't going away and that the publication of a new Mac rag was proof that there is plenty of users who support the platform. BMUGers agree.

- Mail-order house APS will start adding "climate controls" to its hard drives this fall. The company's new Integrated Climate Control Electronics, or IC^{2}E, is a small circuit that controls how fast a drive's fan rotates.

If the drive is cool, then the fan moves more slowly and if it gets hot, then the fan really gets moving. APS said the technology also reduces the noise coming from a drive, since the fan will move slowly when the room is cool.

Users with older APS drives using its SR-2000 enclosure can upgrade for $69.

APS Technologies
(816) 920-4109 or (800) 235-2753
fax (816) 483-3077
http://www.apstech.com/

Shareware spotlite

Newer Technology Inc. of Wichita, Kan., recently released a set of freeware utilities, called the Newer Technology Gauge Series. The gauges are little programs that give you a readout of how a specific part of your Mac is running.

The Clockometer tells how fast the computer really running. Newer sells clock-enhancing clip-on accelerators, so it answers questions they've often had to address. The software also tells what kind of processor is installed.

The Cache-22 gauge lets you know how much Level 2 cache memory is installed in a Mac without opening up the lid. Some systems come with L2 cache soldered on the motherboard, while others can be upgraded.

RAMometer tests the RAM in a system and SCSI Info can let you know what's up with the SCSI buses on a Mac. Newer said this tool can cause some Macs to freeze, so use it with caution (or even better, don't).

The Slot Info gauge provides information on certain items in hardware on the motherboard, such as the version of the Mac ROM and the video controller.

The software can be found on Planet BMUG and other electronic services.

September

Beantown was the place to be for Mac users in August. Was it the heat that they craved, or the humidity? Or perhaps the traffic snarls that make the L.A. freeway seem like a deserted country road? Nope. It was Boston's Macworld Expo, the semi-annual lovefest for Macintosh aficionados.

We will take a BMUG tour of events on the show floor and give a run down of some new hardware and software.

A leap of faith

While the BMUG peanut gallery contains some of the most hard-core Mac fans, its rare to find them jumping around with excitement over products, especially at trade shows. The reasons are clear: Been there, done that. They have usually seen new products demonstrated at BMUG meetings or sifted through the fine points of any technology via a long online threads of messages on Planet BMUG or the Internet.

But even the most jaded know-it-all onlookers were behaving like high-school cheerleaders over the new products introduced at the Expo this summer. More than 430 vendors rolled out their wares and almost all of the goodies—new and old—were great stuff.

One of the big stories was the sheer number of new computer systems introduced at the show. These machines were not just from Apple, but from a raft of clone vendors, including DayStar Digital Inc., Motorola Computer Group, Power Computing Corp. and UMAX Computer Corp.

The new models covered the waterfront for prices and capabilities. As mentioned in last month's column, the high-end will use speedy PowerPC 604e processors and new entry-level models will run 603e chips. Several vendors are now using the MacBench 3.0 processor test ratings to let users compare speeds between different models with different chips.

However, chip speed is only one measure of performance and users should keep in mind the applications they expect to run on a system, standard graphics features, software bundles and price. The BMUG office has a small $5 booklet about purchase considerations called the BMUG Guide to Buying Macs.

Apple showed off speedier versions of its high-end Power Mac 8500 and 9500, including its first multiprocessing model. With the family in mind, the company will trot out the high-speed Performa 6400.

Unlike most of today's applications that give you a fixed group of features, when you need a special feature in OpenDoc, you can simply add a small piece of code called a part or Live Object. . . .

It was hard to miss Power Computing at the Expo; it had machines in scores of booths and ran a loud game show demonstration that packed the aisles. It showed its new PowerBase line of PPC 603e-based clones.

Power also gave attendees a chance to test their faith in the high technology with a bungee-jumping tower at the World Trade Center. Mac daredevils queued up in front of a logo-encrusted crane and entertained passersby as they fell towards the Boston Harbor.

UMAX Computer Corp. took the wraps off new lines of SuperMac systems. The models have very stylish enclosures, especially the new top-of-the-line S900 tower.

DayStar showed off its $1,499 nPower 360+ dual-processor upgrade board for PCI models. Some graphics applications have been rewritten to use multiple processors; QuickTime 2.5 is optimized for this technology. Other varieties are coming on board with support for MP, such as games and scientific applications.

Motorola decided not to announce its lines of PPC 604e- and 603e-based clones, rather it gave a "technology demonstration" of its new systems. The units are expected to ship in November. It also showed a prototype of its PowerPC Platform (PPCP) model that booted both Windows NT and the Mac OS.

Be Inc., the Menlo Park, Calif.-based startup headed by former Apple executive Jean-Louis Gassée, gave Expo attendees the opposite demonstration from the cloners. It showed BeOS, the Be operating system, running on a Macintosh. The company makes the BeBox, a multiprocessor computer aimed at games and multimedia.

BeOS takes over the Mac hardware after the user launches a Mac application called OS Doubler, which points the system to files on a Be-formatted hard drive. The setup can't run Mac and Be applications at the same time.

BMUGers were drooling at the performance of the Be software. A Power Computing PowerCenter 120 was able to simultaneously play several QuickTime movies in real time without dropping frames.

Be said it has about 700 third-party developers working on applications but wouldn't provide any specifics of who or what. The company expects to make a splash at the San Francisco Macworld Expo, next January.

There was a rumor in late August that Apple will buy the company and make BeOS a major component of Mac OS 8, also called Copland. Both Be and Apple denied that there was a deal, but industry insiders said where there's a denial, there's fire.

Going Soft on Wares

Attendees at the Expo were treated to a full plate of new software technologies. As you might expect many were in the hot topics: the Internet and OpenDoc.

OpenDoc, now called Live Objects, lets you use special software containers that can hold data as well as the means to manipulate the data. Unlike most of today's applications that give you a fixed group of features, when you need a special feature in OpenDoc, you can simply add a small piece of code called a part or Live Object.

The scheme is similar to the ways that some current applications accept plug-ins, but is not tied to a specific, proprietary program or product category. The hope is that small developers will be able to make money offering small (or large) parts and users won't have to pay for the truckload of features in a program that they hardly ever use. There's a good article on the subject in the latest BMUG Newsletter ("Good Cyberdog! Apple's Whiz-Bang Internet Tool Knows Lots of Neat Tricks," by Derrick Schneider, BMUG Fall 1996 Newsletter).

Of course, BMUG has a new CD-ROM that features the technology: the $12 Cyberdog/OpenDoc disc, which comes with Apple's Cyberdog Web browser container and other software. In addition, BMUG has a bunch of new CD titles, including the $24 Roadside Resources 3.0 disc of Internet goodies; the $29 Fall 1996 PD-ROM collection of shareware; and the QuickTime 2.5 disc that costs $10.

A pair of Live Object companies that wowed the Expo audience were Adrénaline Software Inc. and Digital Harbor.

Digital Harbor demonstrated Wav, its OpenDoc-based word processing

[T]he hope is that small developers will be able to make money offering small (or large) parts and users won't have to pay for the truckload of features in a program that they hardly ever use.

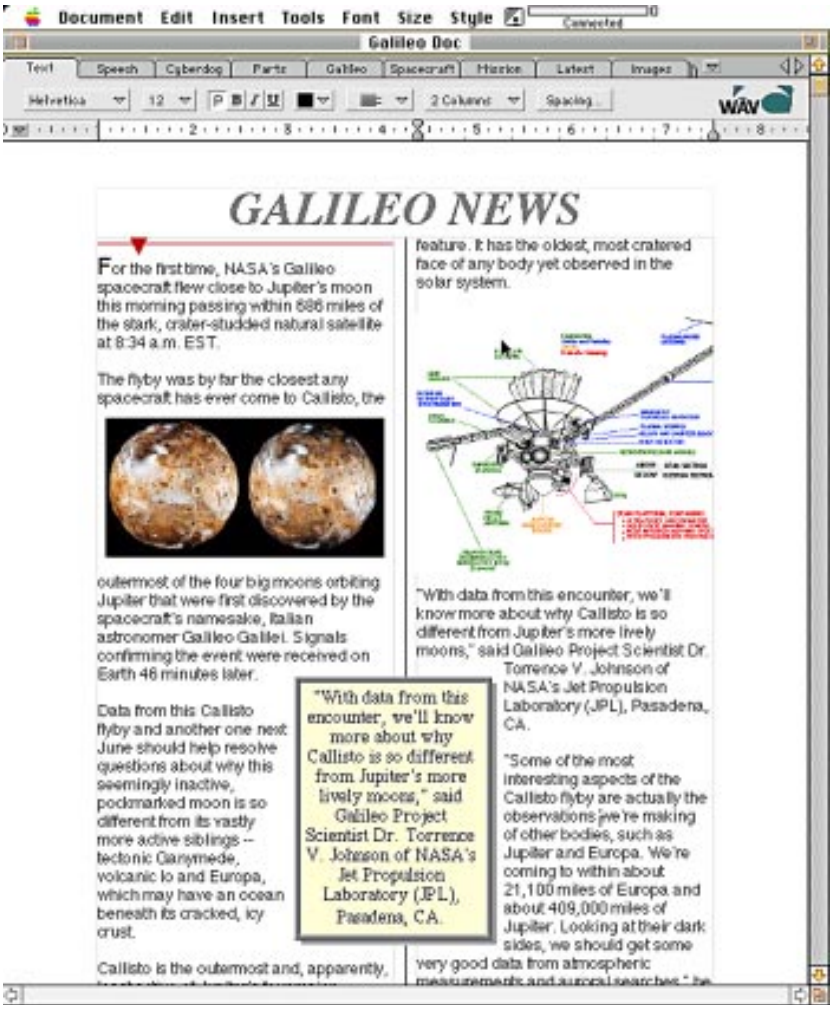

Figure 2. WAV is Digital Harbor's OpenDoc-based word processing application.

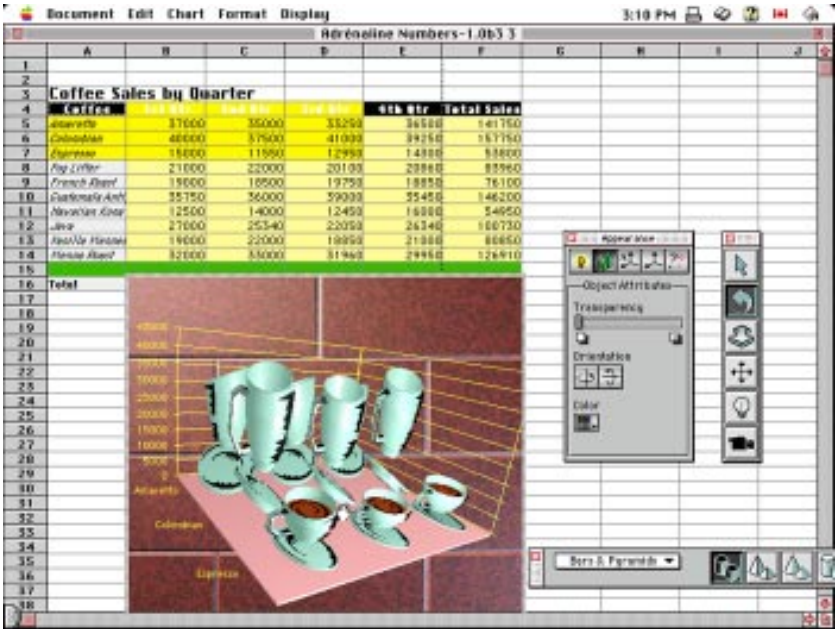

Figure 3. Can you say wow for 3-D charts! It's Adrénaline Software Inc.'s OpenDoc spreadsheet.

application (Figure 2). Even David Schwartz, BMUG's interface cop, thought highly of the software.

Wav has a bunch of neat features, including dynamic text wrap around graphics, text to speech, and the ability to add hyperlink buttons to connect to other documents or Web address.

It also offers a set of tabbed folders that sit above the toolbar that give easy access to parts, components and documents. You can even drag folders filled with documents straight into the toolbar.

The Sainte-Foy, Quebec-based Adrénaline showed its Numbers and Charts software, which are parts that provide common spreadsheet functions. The 3-D charts that the software produced were snazzy and the parts will support Excel 5.0 spreadsheets (Figure 3). The programs will ship next year, the company said.

While not on the cutting edge of system-level technology, I really liked the demo of DiamondSoft's Font Reserve 1.0 font management system. Like other font utilities, it lets you open and close groups of fonts on the fly, but it also has a full suitcase of features.

The $119 utility can match up PostScript outline fonts and their bitmap counterparts and check for corrupt fonts. The company said the software handles all kinds of fonts including PostScript, TrueType, MultiMaster and QuickDraw GX standards.

Font Reserve lets you automatically classify fonts by their style, such as uncial, serif, sans serif, script and ornamental. The software also lets you assign different labels to fonts and group them by jobs or clients. This is very useful for people in desktop publishing.

Hardware heaven

Were you and I were strolling down the aisles of the Expo, I'm sure your eyes would be drawn to the many fine digital cameras and printers. My head turns for any hardware, including the smaller hacks and even storage.

Olympus Image Systems Inc. unveiled a new 230-meg magneto-optical drive: the Sys.230. The drive cost $299 and $359 for internal and external SCSI models, respectively.

While this is a low price for the traditionally high-cost MO technology, the drive is almost twice as expensive as an Iomega Corp. Zip drive. But Olympus recently lowered the price of MO cartridges to $10. That's much less expensive than Zip disks and the MO cartridges hold twice as much data. If you buy a bunch of cartridges to back up you hard drive and archive data files, then the MO technology becomes very cost effective.

In addition, MO media is known for its stability; analysts say that data stored there will last longer most other media.

The drive also has a slim, streamlined design reminiscent of the Zip, unlike the older Olympus enclosure that was solid, but a bit of a snooze.

Herb Dang, longtime BMUGer, pointed out Contour Design Inc.'s set of mice. Instead of a single mouse to fit all mitts, the company makes four differently-sized mice that run from small to large. The $79.95 devices sport three button and offer users support for both palm and thumb.

Bytes and Pieces

Here are a couple of fun items from the Expo:

- A San Francisco group is offering users a novel way to own a piece of Apple or about fifty other companies. Its name tells almost the whole story: One Share of Stock Inc.

  One Share sells you a framed stock certificate for a single share. The company said that its $99 price is about a third off of the costs when a user pays the price of the stock, a minimum commission, certificate fee and framing. The stock certificate has the multi-colored Apple logo and some other frills.

- Frank Casanova, director of Apple's Advanced Prototyping Laboratories, showed the crowd at the Expo keynote event a number of software and hardware projects from the think tank.

  Several of the technologies will help users handle large amounts of data. He demonstrated Apple Data Detectors, a system utility that can run through a document and pull out user specified information, such as a Internet URL, snail-mail address or phone number. It then offers a pop-up list of options to copy the mailing address to a contact manager, open the URL with a Web browser or automatically paste the contact information into a letter.

  After all the attention given to Cyberdog, Apple gave cat fanciers in the audience a treat with Apple SPIDI, a technology that combines text-to-speech and animation. Casanova showed an image of a cat in a Web browser that was able to talk a text file.

  The presentation also unveiled some wild hardware designs, most of which Casanova said will not be made into products. However he held up a brightly colored clamshell-shaped device with a built-in handle. Sources said it may be a word processing system aimed at education.

[T]he Internet has changed the picture and scope for betaware. Releasing software bit-by-bit is common with Internet software. When developers add a new feature, a new version is tossed out immediately over the Net for users to try. The update is then promoted on the company's Web site.

Contour Design Inc.
Salem, N.H.
(800) 462-6678; fax (603) 893-4558
http://www.contourdes.com

DiamondSoft Inc.
Mill Valley, CA
(415) 381-3303
http://www.fontreserve.com

Digital Harbor L.C.
Lindon, Utah
(801) 785-2115; fax (801) 785-2414
http://www.dharbor.com

Olympus Image Systems Inc.
Melville, N.Y.
(800) 347-4027; fax (516) 844-5339
http://www.olympusamerica.com

One Share of Stock Inc.
San Francisco, CA
(800) 742-7311; fax (415) 777-1677
http://www.oneshare.com

October

This month the BMUG column will take a look-see at some recent events around the Mac world, offer some tips and bring news on system software updates.

In addition, I'll offer a brief flame on the recent rise in the release of beta software by developers. Light the burners. Onward!

Please Release Me

Apple planned on shipping a System 7.5.4 update software in the middle of September; however, some "last-minute quality issues" (er, bugs) cropped up with the release and it was delayed until the end of the month. Unfortunately, some of the boo-booed updaters found their way into the world, so the company instead decided to number the corrected version System 7.5.5.

The update will improve performance with virtual memory on new and older Macs. It especially will speed the time it takes to switch between large applications and documents.

The new version also will fix a problem that wouldn't let some programs load and then would report inadequate memory—even though the About This Macintosh box under the Apple menu showed that plenty of RAM was available. In addition, the update will cut down on memory-related Type 11 errors that have plagued Power Mac models.

Apple said that the new version will require programs to use a bit more memory—23 Kbytes. If you install the update and then get an error message complaining that an application needs more RAM, you can change its allocation by running the Get Info command and boosting the Preferred size number by at least 23 Kbytes.

In addition, the update will fix some bugs with PCI-based Mac systems, including the random freezes that happened sometimes when accessing files on the hard drive. It also will improve performance and reliability with Ethernet, especially on 5400 and 6400 series machines.

System 7.5.5 will also incorporate the code found in the System 7.5.3 Revision 2 update. The most important of these were fixes for the SCSI drive problems mentioned in the column a few months ago; and performance and reliability gains for PowerPC PowerBooks. In addition, it takes care of the trouble users had waking up PowerBooks that had Connectix's RAM Doubler versions 1.6 and earlier.

Apple took the release as an opportunity to explain its numbering scheme for future system software versions. Amazingly, it follows a sensible pattern.

If an update features major architectural changes, the first number after the decimal point will change. If the updates bring only improvements in reliability and performance, the third digit will be tweaked.

The new numbering convention replaces old Software or Hardware Revision naming styles, which were very difficult to keep track of.

In case you need to track the many flavors of System 7.5, here's a run down of its history.

- System 7.5. This was the original shrink-wrap version sold in stores.
- System 7.5.1 was what you found after adding Update 1.0
- System 7.5.2 was the version that shipped with the PCI desktop Macs and PowerPC-compatible notebooks: the PowerBook 190, PowerBook 5300 and PowerBook Duo 2300 systems.
- System 7.5.3 shipped on some desktop Macintosh computers and resulted from adding Update 2.0 to previous versions.
- System 7.5.3 Revision 2 came standard on some Macs and also with the Revision 2.0 updater.

More better ßetas?

In 1988, I wrote a piece for the BMUG Newsletter titled "Bad Vibes in ßetaville." It described the then recent practice of selling prerelease software to users.

This practice is now glorified by the entire computer industry and called: faster "time to market." This means companies should get products out the door more quickly.

Now, if you bought a Performa or Mac clone that comes bundled with a bundle of software, you may not even be aware that there's a mountain of titles in stores, on the Net and in shareware. Traditional shrink-wrapped software and formally released Internet programs are the "real" versions; the beta versions are supposed to be for the final stages of testing.

I didn't like the idea back then of paying for betaware, and guess what? I still don't.

The old article's title paid homage to the classic French science-fiction film "Alphaville," directed by Jean-Luc Goddard. The 1965 film showed the adventures of Lemmy Caution, played by Eddie Constantine, in a city of conformist robots ruled by a dictator. Not that I would ever make such a comparison to todays situation!

At the 1988 Macworld Expo in San Francisco, Silicon Beach sold several hundred beta copies of its SuperPaint graphics application. While users were eager to run the program, the company had a financial reason to ship the product early; it needed an influx of cash, since a distributor had just gone bust owing Silicon Beach a bundle of dough.

The verdict by BMUGers and industry mavens was mixed. Some users thought that the betaware releases were fine since they brought needed capabilities to market more quickly. Others thought that the practice should be confined to the cognoscenti, power users that knew what they were getting in for and could guard for the inevitable crashes.

Beta software releases are great for developers. The action expands the testing base for both hardware and software; and it can uncover bugs or incompatibilities that might be difficult or impossible to find with an in-house or small testing release.

But the pioneers of betaware had to struggle with a primitive software distribution system: regular shrink-wrap sales; floppy-based demo versions and shareware; and bulletin board systems. These early efforts were well before CD-ROMs became standard equipment and electronic services were cheap enough for the masses.

Nowadays, the Internet has changed the picture and scope for betaware. Releasing software bit-by-bit is common with Internet software. When developers add a new feature, a new version is tossed out immediately over the Net for users to try. The update is then promoted on the company's Web site.

This practice is now glorified by the entire computer industry and called: faster "time to market." This means companies should get products out the door more quickly. This is a worthy goal and a great idea.

But it can come at the cost of user productivity, when the beta software installations rack up a constant series of crashes. Hard, hard crashes. And the actual culprit may be hard to identify, since users my run several pre-release programs at a time. Support of the prerelease versions by the vendors is often spotty.

Developers should try to realize that a variety of users will run prerelease software, some of whom will not recognize the difference between beta and final versions.

Users need to recognize that with increased number of systems and applications, and more and more complex software, quality will take a hit. The Pandora's box of betaware is very attractive, but may hold a dark side.

Bytes and Pieces

Here are a few small items that floated into my emailbox this past month:

- Motorola's Computer Group division recently took the wraps off several new lines of Mac clones that it will ship in November under the StarMax label.

  The entry-level StarMax 3000 desktop systems will be based on 160- or 200-MHz PowerPC 603e processors and come standard with three PCI slots, 16 megabytes of RAM, 8x CD-ROM drive and a 1.2-Gbyte hard drive. Systems with a minitower enclosure will offer a 2 Gbyte hard drive and five PCI slots. The models will cost from $1,595 to $2,395.

  Based on 160- and 200-MHz PowerPC 604e chips, the StarMax 4000 models will also come in both desktop and minitower versions. The machines will have a price tags from $2,395 and $3,595.

  Motorola said it will target SOHO and small businesses with the models, which will be sold in retail stores, under private brands and mail order.

- The Mac rumor groups were recently still rife with speculation over reported deals between Apple and Be Inc. As I mentioned last month, the startup company in August showed BeOS, the Be operating system running on a Macintosh clone. Be expects to release its software for some PCI Macs early next year.

The public's wavering confidence in Apple's corporate health and the future of the Mac platform is still bedeviling the Cupertino company. Some people feel that one of the causes for this concern is the trouble users sometimes have in finding Mac software, especially in the large superstores.

The speed and Unix capabilities of Be's operating system have captured the imagination of many BMUGers. Since it takes complete control of the Mac's hardware, users would have to reboot to switch between Be and Mac systems.

As you can see in Figure 4, the Be interface comes with a icon application launcher and an integrated Web browser. While the screen shot shows a video running in the background, the Be operating system does not currently support QuickTime.

I've heard that some BMUGers are forming a new special interest group for the operating system.

- Most Mac users have a set of the Apple logo stickers that come with Macs. Apple now has special versions for car rear windows. The new stickers are static-cling, zero glue decals for the inside window and don't leave a mess like the previous flavors. A pack-of-five is available from (800) 373-0877.

Figure 4. The Be interface.

There's a plenty of Mac software titles available, however much of it is sold primarily in Mac-only stores, or via mail order catalogs. New users or potential users don't necessarily know this fact and when they wander into stores dominated by Windows computers and software, they question the Mac market.

November

This month the BMUG column hits the road, or rather its writing site shifted from my apartment to a coffee shop. The combination of an early editorial deadline for the copy and the pressing need of our car for new whitewalls, caused me to pack up the PowerBook and take a cross-town trip to the tire store. I then hiked about dozen blocks to a java joint.

Sitting in a chic urban setting while using the Macintosh operating system on a color notebook display and sipping a café latté is a world-class combination. But with a rickety table to hold the PowerBook, as well as a berry scone, I was lucky not to spill the coffee into the keyboard. One of the standard hazards of on-the-go computing.

The sunny venue isn't preventing me from giving you plenty of tips and news of events around the Mac world. Onward.

Get with the program

The public's wavering confidence in Apple's corporate health and the future of the Mac platform is still bedeviling the Cupertino company. Some people feel that one of the causes for this concern is the trouble users sometimes have in finding Mac software, especially in the large superstores.

There's a plenty of Mac software titles available, however much of it is sold primarily in Mac-only stores, or via mail order catalogs. New users or potential users don't necessarily know this fact and when they wander into stores dominated by Windows computers and software, they question the Mac market.

Even in these large stores, there are many more Mac programs available than rest on the shelves of the small Mac section. The titles are hiding behind Windows clothing: many vendors package both Mac and PC versions of a software title in a single box (this is called a stock-keeping unit in marketing lingo). The vendors also can put both versions on the same "hybrid" CD-ROM. Unfortunately for Mac users, the programs are placed on the PC shelves.

Apple this fall will start its "All Great Software Wears this Face" promotion in some of these stores. Instead of pushing its own software, the campaign will highlight third-party titles.

Apple will place banners, posters, and floor decals that point out that the programs Mac users want may be in the Windows section. The materials will remind people of the blue Mac OS logo and point them to certain hot hybrid titles in the store.

In addition, the company will have a toll-free number—(800) 500-4862—that gives the names of nearby Mac software stores; or information about mail-order companies; or a fax-back list of some products.

Apple has also added a new Web page for Mac software; the address is http://www.macsoftware.apple.com/. The site will have information about over 12,000 third-party Macintosh products, Apple said. The page will also describe software that is not sold in stores, such as scientific and technical applications.

There are Mac applications or database/spreadsheet templates for almost any task—from dog grooming to dental office management. But people don't know how to find the specialty software.

Another such Web site was recently formed by AIMED, the association of independent Macintosh engineers and developers. It provides a database for some products and links to member pages. The site is at http://aimed.org.aimed/.

Of course, all the marketing programs in the world will not stop the familiar nonsense found on the shop floors.

Scott Beamer, BMUG's longtime business-software guru, recently recounted the tale of a recent visit to a superstore. He overheard a salesman talking to some new Mac owners about spreadsheets—the sales guy didn't know of any. "If only they had a program like Microsoft Excel," he said.

Beamer added his two cents to the conversation and said that Excel did run on the Mac. The salesman said Scott was right, of course—users could run the Windows version under Insignia Solutions Inc.'s SoftWindows 95 emulator software!

It's a topsy-turvey world that forgets that Microsoft Excel was offered first more than a decade ago—on the Macintosh. The Windows 1.0 version of Excel didn't ship until sometime in 1987. Sigh.

Hanging in there

In late September, the Boston Computer Society folded its tents. The group had thousands of members, groups for almost all computer platforms, several bulletin board services (BBSes) and many special interest groups.

In a press release, Arthur Nelson, Chairman of the Board, said, "The Boston Computer Society has succeeded in its original mission of helping thousands of early adopters and new users understand and use computers. For almost twenty years, the BCS has occupied a pivotal and influential position in the history and growth of personal computers, both in this community and nationally."

However, insiders said the organization kept losing money and had tied

itself to an expensive office and administrative structure.

BMUG has had a First Class BBS in Boston for many years and our East Coast group recently created its own Web page. It also will now hold local meetings.

To BMUG, the work of helping people with their computers is as critical now as it was 12 years ago when we held our first meeting. Have users stopped having problems? Are there fewer users and fewer difficulties? No way!

Nowadays, the technical and support situation for Mac users is much more difficult than it was years ago: there are several generations of hardware and software that need support; and there are also more new users buying systems, who hold some unrealistic expectations of what a computer can do (or what their model can do).

Another critical issue for our community today is the growing polarization of computer haves and have-nots. This is not just due to the still high costs of computers—Macs and others; it is also because most computers and peripherals are still too hard to set up and use reliably for many non-technical people.

Our group has always accepted donations of older Mac hardware and found homes for them; this effort is increasing. In addition, Ann Wrixon, BMUG's director is expanding our connections with other non-profit organizations.

While many users can get somewhat over-involved with their silicon companions, BMUG has found that computers can be a great way to bring people of different political, social, and age backgrounds together. With the pressures in our current society seeking to divide people, BMUG provides a daily lesson that users can find a place that lets them help and learn from each other.

Here's a brief pitch: If you or your company can help BMUG with a donation (cash or services), please send a message to Colleen Miller at colleen_miller@bmug.org. Any assistance will be gratefully accepted. Thanks.

Bytes and Pieces

Here are a few items from Planet BMUG, our BBS service, around the Net and my stream of consciousness:

- BMUG and other user groups often sell paraphernalia to support themselves. CD-ROMs of shareware and other programs were popular sellers; however over the past couple of years, the sales have fallen off. This is due to the increased use of the Internet.

  Many people believe that it's cheaper to download software and they can get more recent versions from the Net than from a CD. But as we discovered years ago with Planet BMUG, the more you rely upon something, the more unreliable it becomes.

  When we understood that the online service was influenced by lunar cycles and Star Trek episodes, we were rather forgiving when it failed. But as its reliability increased, our patience was tried with each crash and failed message or download.

  The same psychology is now true for current Internet services. Everyone on the Net keeps running into down times, terrible transfer rates, overloaded servers and reduced productivity while recovering from crashes due to Web browsers and odd-ball plug-ins. And we keep coming back for more.

  How many hours in a month would we total if we counted up the minutes waiting for some Java applet to run or Web graphic to load? Perhaps this time has a cost.

  When the Web is acting up, the "slow" data transfer speeds and convenient access of CD-ROMs can look pretty good. Now may be a good time to take another look at commercial CD database titles of frequently accessed information as well as the software collections in BMUG's disc catalog.

- Judy Stern and Robert Lettieri, several of BMUG's multimedia gurus, have created a Web page with news on QuickTime and related products. It also includes a weekly how-to tip that shows off some cool feature. The duo said the page is aimed at beginners, but also has good information for advanced users.

  Judy and Robert's Little QuickTime Page is at http://www.bmug.org/Services/qt.

- Apple and third-party utilities make it easy to turn on and off extensions and control panels. Thank goodness, since in the past you had to go into the System Folder and move them one by one. However, it's also easy to turn off something you might actually want on.

  Case in point: WorldScript Power Adapter, an extension for Power Mac systems. Most of us would figure the component relates to Apple's WorldScript I and II support for non-Roman languages, such as Japanese and Chinese. But the extension is also used for English language files. It holds the PowerPC-native code for a number of text-handling operations and if it's turned off, the Mac will use emulated code that's slower.

- Here are some interesting figures. According to Ontrack Data Recovery Inc., only seven percent of data losses in the PC market occur from computer viruses. I'm sure that the figure is lower for the Mac, since our platform has fewer viruses overall, and few Mac viruses are really malicious.

  In addition, the company said that human error accounts for 32 percent of all data losses. This certainly highlight's the need for regular backups and archives.

  Safe data habits such as frequent Save commands and backups must be incorporated into each of our computing habits. It should be taught to children, just like looking both ways when crossing the street.

David Morgenstern is a longtime BMUGer and News Editor at MacWEEK. He is the self-proclaimed BMUG Cheerleader, and with Lorca, Ron and David S., helps run the monthly BMUG West meeting at the Exploratorium science museum in San Francisco. It's held on the last Monday of the month. You can reach him at david_morgenstern@zd.com

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CyberLaw • Cyberlex

by Jonathan Rosenoer

Cyberlaw Coded Speech

I. A Two-Edged Sword

The communications revolution made possible by the advent of the personal computer and the development of online systems and the Internet is clearly a two-edged sword. On the one hand, individuals across the world are able to communicate with each other and to publish their ideas to a wide audience with very little delay and at a very low cost. On the other hand, governments have the power to monitor and review an ever-broadening range of facts and details on the daily lives of citizens. The popular media is now reporting with increased frequency about security and privacy issues. Even members of the U.S. Supreme Court have recognized that aspects of modern communication systems represent a threat to individualism and, ultimately, to democracy.

One technology that promises to relieve these concerns is encryption. Happily, this technology is embraced by both individuals and businesses. But the Government stands opposed—classifying robust encryption technology as a defense article that may not be imported or exported without a license. The effect of these restrictions is that U.S. companies are both hampered in providing U.S. citizens with the benefits of encryption and handicapped in competing against industries abroad that have grown up under the protection of U.S. restraints on its own companies. Attempts to reverse this situation have not been welcomed by the Clinton Administration, and there are efforts to move Congress to change the status quo. But the most promising progress appears to be in the courts. A federal court in San Francisco recently allowed a suit filed on behalf of a Ph.D. candidate in mathematics who was blocked by the State Department from publishing an academic paper describing an encryption system he developed and its source code. In so doing, the Court ruled that the source code is protected by the First Amendment (the State Department conceding it erred in restricting publication of the academic paper). __Bernstein v. U.S.__, No. C-95-0582 MHP, Slip Opinion (N.D. Cal. April 15, 1996).

II. Snuffle & ITAR

While a graduate student, Daniel Bernstein developed a zero-delay public-key encryption system. He expressed his mathematical ideas in an academic paper, "The Snuffle Encryption System," and in source code, titled Snuffle.c and Unsnuffle.c. In June 1992, Bernstein asked the State Department to determine whether the three items are covered by the International Traffic in Arms Regulations (ITAR).

Even members of the U.S. Supreme Court have recognized that aspects of modern communication systems represent a threat to individualism and, ultimately, to democracy.

ITAR implements the Arms Export Control Act, which authorizes the President to control the import and export of defense articles and services. Restricted items are placed on the U.S. Munitions List. They cannot be imported or exported without a license. When doubt exists about whether an article or service belongs on the Munitions List, an ITAR "commodity jurisdiction" procedure allows the State Department's Office of Defense Trade Controls to determine coverage. The Arms Export Control Act plainly states that designations of defense articles and services are not subject to judicial review.

Cryptographic systems, equipment, and software are covered by the Munitions List, with exceptions for applications in automated teller machines and certain mass-market software. In August 1992, the Office of Defense Trade Controls informed Bernstein that Snuffle.c and Unsnuffle.c are defense articles subject to ITAR and subject to State Department licensing prior to export.

Following much correspondence and still unsure if his academic paper was included in the August 1992 determination, in July 1993 Bernstein submitted a second commodity jurisdiction request for "1) the paper, 'The Snuffle Encryption System,' 2) Snuffle.c, 3) Unsnuffle.c, 4) a description in English of how to use Snuffle, and 5) instructions in English for programming a computer to use Snuffle." In October 1993, the Office of Defense Trade Controls notified Bernstein that all five items are restricted defense

articles. Only after Bernstein filed suit did the Office write to "clarify" that the commodity jurisdiction determination only applies to Snuffle.c and Unsnuffle.c.

III. Judicial Review & Constitutional Claims

Bernstein sued the State Department for relief from enforcement of the Arms Export Control Act and ITAR, on the grounds they are unconstitutional restraints on speech, vague and overbroad, and infringe rights of association and equal protection, among other things. The Government replied with a request that the Court dismiss the case on grounds the claims are nonjusticiable.

The Government characterizes Bernstein's suit as an attempt to obtain judicial review of the commodity jurisdiction determinations placing his cryptographic items on the Munitions List. Neither side disputes that the Arms Export Control Act precludes judicial review of commodity jurisdiction decisions. But, the Court notes that, "the issues before [the] court do not necessitate a factual inquiry into the [commodity jurisdiction] determination, but a legal one into broader constitutional claims…."

According to the Court, the Arms Export Control Act does not preclude judicial review of colorable constitutional claims. The Ninth Circuit Court of Appeals has ruled that "a constitutional claim is not colorable if it is clearly immaterial and made only for the purposes of jurisdiction, or 'is wholly insubstantial or frivolous.'"

Seeking to define the items at issue, the Court observes that, on the one hand, the Government claims only Snuffle.c and Unsnuffle.c are controlled by the Munitions List and subject to licensing requirements. On the other hand, Bernstein claims his paper, "The Snuffle Encryption System," remains on the Munitions List and that he cannot publish it without a license. Reviewing the evidence, the Court acknowledges that the paper was placed on the Munitions List in 1993, but that the Government disavowed that decision as of June 29, 1995. The Court adds, "[i]t is disquieting that an item [the Government] now contend[s] could not be subject to regulation was apparently categorized as a defense article and subject to licensing for two years, and was only reclassified after [Bernstein] filed this action."

IV. Speech Not Conduct

Bernstein's academic paper, ruled the Court, "is speech of the most protected kind." The Government does not contest this. It asserts instead that the source code for Snuffle.c and Unsnuffle.c are not speech but conduct—looking to a Supreme Court decision holding that conduct must be "sufficiently imbued with the elements of communication" to fall within the protections of the First Amendment. "[T]he source code as a functioning cryptography product," says the Government, "is not intended to convey a particular message"—its purpose is functional not communicative. But, the Court observes, Bernstein's system is written in English and "there is little about this functional writing to suggest it is more like conduct than speech." The Court continues,

The Court adds, "[i]t is disquieting that an item [the Government] now contend[s] could not be subject to regulation was apparently categorized as a defense article and subject to licensing for two years, and was only reclassified after [Bernstein] filed this action."

> Nor does the particular language one chooses change the nature of language for First Amendment purposes. This court can find no meaningful difference between computer language, particularly high-level [computer] languages,... and German or French. All participate in a complex system of understood meanings within specific communities. Even object code, which directly instructs the computer, operates as a 'language.' When the source code is converted into the object code 'language,' the object program still contains the text of the source program. The expression of ideas, commands, objectives and other contents of the source program are merely translated into machine-readable code.

At this stage in the proceedings, says the Court, whether code is functional or not is immaterial. Snuffle is speech, just like do-it-yourself manuals and technical information about hydrogen bomb construction.

The Government argues that a description of software in English informs the intellect, but source code actually allows someone to encrypt data. The Court comments that the Government thereby appears "to insist that the higher the utility value of speech the less like speech it is." But, continues the Court, "[t]he logic of this proposition is dubious at best. Its support in First Amendment law is nonexistent."

The Court observes, by way of analogy, that "copyright law also supports the 'expressiveness of computer programs." Under copyright law, computer software programs are classified as "literary works," and also as "a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result." Copyright protection extends to both source and object code. According to the Court,

> Copyright protection, designed to protect original expression, supports the likeness of a computer program to speech as defined by First Amendment law.... An encryption program expressed in source code communicates to other programmers and ultimately to the computer itself how to make the encryption algorithm ... functional.... While copyright and First Amendment law are by no means coextensive, and the analogy between the two should not be stretched too far, copyright law does lend support to the conclusion that source code is a means of original expression.

V. Colorable Claims

Characterizing Snuffle as conduct, the Government argues that the standard for assessing conduct regulation under First Amendment is whether:

> 1) [I]t is within the power of the government, 2) it furthers an important or substantial government interest, 3) the government interest is unrelated to the suppression of free expression and 4) the incidental restriction on speech is no greater than is essential to further that interest.

As noted above, the Court rejects the contention that Snuffle source code is conduct. The suggested standard is, therefore, inapplicable. Even if it were applicable, regarding parts 3 and 4 the Court cannot say Bernstein's contentions are frivolous. He has stated facts sufficient to present a colorable First Amendment claim.

The Court rules that Bernstein's prior restraint claims are also colorable. Licensing schemes such as the Arms Export Control Act and ITAR "come with a heavy presumption against their validity when they act as a prior restraint on speech. Prior restraints have even been struck down in the face of national security concerns." As Snuffle is speech, it is potentially subject to the prior restraint of licensing. Since licensing under the Arms Export Control Act is unreviewable, Bernstein's claim is colorable.

Bernstein argues that provisions of the Arms Export Control Act and ITAR are overbroad. The Supreme Court finds that "where [a] statute unquestionably attaches sanctions to protected conduct, the likelihood that the statute will deter that conduct is ordinarily sufficiently great to justify an overbreadth attack." Bernstein's claims, at this stage, are colorable, as "the [C]ourt cannot say that [Bernstein's] claim that enforcement of some provisions of the statute or regulations could significantly compromise the protected speech of third parties is frivolous."

Bernstein claims the terms and provisions of the Arms Export Control Act and ITAR are impermissibly vague, in that they fail to give notice of the regulated conduct and have a chilling effect on speech. The Government, in reply, argues that both the definition of cryptographic software and the exemptions from the definition are clear to a person of ordinary intelligence. "This seems to be a bit of dissimulation, unless it is a confession," chides the Court, "since the [Office of Defense Trade Controls] itself mistakenly classified Bernstein's academic paper as a defense article under [ITAR]." Accordingly, and with the exception of a claim against the willful standard for criminal violation of the Arms Export Control Act, the Court finds Bernstein's vagueness claim to be colorable.

The Court concludes by emphasizing that its only substantive holdings are that source code is speech for the purposes of the First Amendment and that Bernstein's case is justiciable. In light of the above, the Government's motion to dismiss was denied and Bernstein allowed to continue to press his claims.

CyberLex

Notable legal developments reported in May 1996 include the following:

The White House again proposed that Internet users make digital encryption "keys" available to law enforcement authorities, who could obtain them via a warrant, in exchange for greater security (using public-key encryption) when doing business online. The White House also calls for foreign countries to keep copies of their citizens' keys and for governments to be able to access keys in other countries. *Marin Independent Journal*, 5/25/96, A1.

Although the Government agreed to refrain from investigating complaints about online indecency while a challenge to the new Communications Decency Act was being decided in Federal court, the F.B.I. looked into whether CompuServe had violated the law after receiving complaints from the American Family Association, a conservative Christian group in Tupelo, Mississippi. The group accused CompuServe of failing to provide adequate safeguards to prevent children from viewing sexually explicit pictures and movies in an area of CompuServe named MacGlamour. During closing arguments on the Communications Decency Act before a panel of Federal judges, the incident was repeatedly cited by one of the judges as a possible indication the Act could be flawed. Judge Dalzell said fear of prosecution could well prevent services from publishing information they might otherwise offer. Judge Dalzell barred the F.B.I. from beginning similar inquiries until the panel can rule on the constitutionality of the Act. *New York Times*, 5/11/96, p.8; 5/19/96, p.8.

In protest over a French police raid of the Paris headquarters of FranceNet and WorldNet, in which the services were shut down and their top executives briefly jailed as part of a crackdown on child pornography, France's top Internet providers agreed to block access to the Usenet portion of the Internet for one week. The strike was defused after France's telecommunications minister, Francois Fillon, agreed that Internet providers should not be held liable for words and pictures placed on the Internet by users. FranceNet's Rafi Haladjian and WorldNet's Sebastien Socchard still face up to three years imprisonment and $100,000 in fines in connection with carrying pornographic images of children. *Marin Independent Journal*, 5/10/96, B7; 5/15/96, B7.

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Women & Technology

Intro to Women & Technology

by Hoai-An Truong, Women & Technology Coordinator/Éditor

I am delighted to bring you this array of articles. Originally entitled "Mac Women", this section quickly became the "Women and Technology" section, because it covers much more than the role that computers play in women's lives.

Here in this collection is an update of the Computer & Telecommunications Skills Center (CTSC) started by the Women's Economic Agenda Project featured in the January 1996 newsletter. The CTSC is an exciting new computer & Internet literacy program attempting to address the gap between the technology "haves" and "have-nots" in the desolation of downtown Oakland.

This section includes an article about a company that's about making technology fun for girls by creating electronic toys and games specifically for girls—a sadly neglected market. Several other articles also cover computer-related activities and outreach projects for girls.

This section also features careers, technology-related social issues, and community, online and off.

Two articles by women programmers are like night and day. One of the programmers, Grace, comments on how having talents and expertise in lots of different areas as a programmer often got in the way. This is an observation I've heard from other women programmers before. It's something to keep in mind in seeking work as a programmer, or in hiring. Should you change your style to fit expectations, or should those expectations change?

This section is about changing one's expectations.

What Planet BMUG Has Done for Me

(YMMV*)

by Jean Sirius

I FIRST MET JEAN SIRIUS one day years ago when she walked in to visit the BMUG Helpline and Betsy, former manager of the Helpline. She utterly charmed the both of us (no mean feat with Betsy, who was a hard sell) that day, and each time she visited — a rare pleasure. Jean used to volunteer on the Helpline before she went back to school. As fate would have it, after she completed a bachelor's in Computer Science, Jean was stricken with a compulsion to create art, which she has been doing ever since. For several years now, Jean has been on the "fire brigade" of Bay Mac Women's online conferences. That means that she and other volunteers put out any online "flames" or heated arguments that occasionally arise in these otherwise quite peaceful conferences.

For those of us who regularly log onto Planet BMUG or BMUG Boston BBS, the online community is often far and away the best thing about our membership. Here is Jean's story.

—Hoai-An

Here on the Planet, where we are required to use our actual names, not only are we accountable for our words, but we are touched and affected by the stories and situations of others.

I bought my first Mac, a sweet little Plus, in 1989. I named it Suzanne Plus-ette. The first thing I did after I ordered my Mac from the Scholar's Workstation was join BMUG.

Back in those bad old days, the BMUG BBS was run off (gasp!) a PC, and had a command-line interface. It was ugly, but it became a kind of home for me. I never ceased to be amazed at how smart, and how kind, the people there were. I could ask any kind of a bonehead-ed question at any hour of the day or night, and within 4 hours tops (and often within 20 minutes) somebody had an answer for me, and an explanation. And nobody ever made me feel stupid for not knowing.

When I went back to school (at the age of 40, but that's another story), I kept up my membership in BMUG, but dropped out of the BBS. By the time I returned, FirstClass software had been installed, and it was a whole beautiful new world, with a charming new name: Planet BMUG. I fell in love with the community, the conversation, even the conflict.

One of my little hobbies was to notice when, about every six months, some seriously clueless guy would track mud into the Women's conference, demanding to know why there wasn't a Men's conference. I was often the first to invite him to take the discussion into Gender Issues, where I was happy to explain about the contribution the Women's conference made to the unassailable goal of gender parity in BMUG (and tomorrow the world).

Planet BMUG is a fairly small pond, as ponds go: a few thousand denizens at most, and merely a few hundred regular contributors. In such a small pond, speaking up with any regularity makes one a presence. The interactions there yield history, nuance, and depth, over time. Here on the Planet, where we are required to use our actual names, not only are we accountable for our words, but we are touched and affected by the stories and situations of others.

In the Romance & Friendship conference, for example, a young woman once posed a question about the relationship she was having with a somewhat older man. What she wanted, I think, was a reality check, and what she got was several weeks of observations, cautions, anecdotes, and affectionate concern. In all the responses, people revealed themselves. I don't know if we helped the young woman much, but we sure got to know one another a lot better.

I make collage out of magazine paper, and when I mentioned that I'd be happy to recycle magazines, I was overwhelmed and inundated with years' worth of Macworld, MacUser, and even Sunset Magazine. Some of my best work contains pieces donated by Planetary citizens. (By the way, I've gone through all those magazines. If you have some you were just going to throw away—and you're

near Berkeley—send me email, and I'll take 'em off your hands.)

At the opening for my very first solo art show (at Ann Kong's World Famous Bleach Bottle Pig Farm, over on San Pablo in Berkeley) at least half of the people there were from LesBiGay, Woman to Woman, and Romance & Friendship. I got to introduce Planeteers who didn't know each other on sight, but were quite familiar in every other way.

When it was time to take slides of my work, so I could start trying to get into galleries and competitions, a friend from Woman to Woman (whom I'd never met) gave me permission to call her up and ask her questions about the process all night. She was working late, and repeatedly assured me that she didn't mind, but it was an extraordinary kindness. When the slides came back and it turned out the camera I'd used was slightly out of alignment so that all the slides were horribly off-center, she told me that it was fixable, and how to fix it. She helped me maintain my tenuous grasp on reality. I will always be in her debt, especially since she also more recently gave me a one-on-one seminar on 4x5 camerawork, for the next phase of my art career.

It was because of the Romance & Friendship conference that I got my Web page (www.bayscenes.com/ac/sirius/). I'd known for awhile that the most efficient way to show my artwork was on the World Wide Web, and I'd digitized a few pieces, but wasn't making much headway otherwise. A discussion arose in R&F (I forget the pretext) in which several people who'd seen my work advised the rest of the conference to take a look if they got the chance. The BMUG member who runs bayscenes.com sent me email asking if I'd like to have a presence there. He had an area called Arts and Crafts, and so far nothing in it. He was incredibly kind and patient, and prodded me occasionally to get moving until I finally had the page up.

So the next thing I had to do was get more of my work digitized. I had (through the grace of my friend from Woman to Woman) dozens of slides, and so I asked around (Art Talk, Desktop Publishing) to see who had a slide scanner they'd be willing to rent to me. I got a couple of nibbles, both very reasonable, but then a very kind professor and Mac enthusiast offered me the use of his office slide scanner in exchange for the privilege of picking my brain on the subject of Web creation. (Can you say "slim pickings"? I knew you could.) He was very gracious when it turned out that the project was going to take several hours, and the best thing I could offer him was a copy of BBEdit Lite and the advice to steal whatever he liked the look of.

After a few weeks, I noticed (I'm a teensy bit slow on the uptake) that the aspect ratio (the relationship between height and width) of my work on the screen was not quite what it was in real life. In Desktop Publishing I asked for theories about what might be causing this: a defect in the scanning process, a quirk of Photoshop… what? Over a period of days, it finally became clear that it was a feature of my monitor. A little more time passed, and it looked like it might be something fixable. Finally a kind soul from LesBiGay sent me a few squares I could use to recalibrate the monitor's aspect ratio. Was there no problem the Planet couldn't solve?

More recently, I found myself in a situation of uncertainty and stress completely unrelated to computers. My partner kept fainting, and I kept having to retrieve her from the emergency room. I turned to my friends on Planet BMUG (in Woman to Woman, LesBiGay, and Romance & Friendship) and asked them to hold us in the light, or mention us in their prayers, or whatever it was they did along those lines. For several days, I received public and private messages of support and concern, which warmed my heart and lifted my spirits. Then one of the moderators in LesBiGay posted a note saying "light and good thoughts are all very well, but perhaps there's something more concrete Jean needs in the way of help." She volunteered to compile a list of volunteers and what they were willing to do.

While it's obvious Planet is a place to come for advice on matters Macintosh, it's clearly also a community with a big heart, and a lot of willing hands.

As it happened, I was pretty close to being overwhelmed, and the help (which I hadn't had the wit to ask for myself) was a goddess-send. Planetary people have run errands for me, done the shopping, fixed the plumbing, even shampooed the carpets. (My partner has a lung condition, and the carpets made her cough; now she can sit in the living room and not cough. This is a tremendous improvement.) Medical information has been made available. Food has been delivered, a regular cookie-drop scheduled, all while I was getting the benefit of Planetary prayer and meditation. This time has been made much easier for me, because of the kindness and community spirit here in this virtual world. (As an added bonus, I got to find out what some of the denizens look like. In general, we're a pretty good-looking bunch, I must say.)

While it's obvious Planet is a place to come for advice on matters Macintosh, it's clearly also a community with a big heart, and a lot of willing hands. My gratitude and appreciation go to: Ben, Bob, Carol, Carolyn, Charles, Chi, Dale, Gretchen, Hoai-An, Ian, Joris, Joyce, Karin, Laura, Laura, Lisa, Lori, Matt, Megan, Michael, Pat, Rebekah, Sam, Scott, and probably a dozen more whose contributions I'm temporarily forgetting. Forgive me.

** YMMV: Internet-speak, from "your mileage may vary," what it says in the tiny print in automobile ads. It means: this is what happened to me, I have no idea if anyone else will ever duplicate the experience.*

Jean Sirius is an artist with a degree in computer science, who so far doesn't use a computer to make the art, but only to display it. Her Web page is at www.bayscenes.com/ac/sirius/ and email reaches her at sirius@bmug.org. Got (shiny paper, colored pictures) magazines?

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Das Internet und Ich

(The Internet and I)

By T. T. Mai-Linh

THE WOMEN IN OUR FAMILY have had a long and involved history with computers.

Often hampered and harried by traditional roles of Vietnamese society, our mother thoroughly embraced modern attitudes, conveniences, and futuristic trends of the Western world. As a businesswoman back in the early 70s, our mother actively invested in computer technology, and for a brief period even ran a small mom and pop computer start-up ("Cosmotech") out of our home, specializing in foreign language translation by computer, first in Middletown, New York, which moved to what was then called Saigon and which had to be abandoned after her death in 1974.

She had three daughters. Each of us has used computers for years.

I've been involved with computers the longest. Daydreaming in high school about a computer I could use to write, containing the data of an entire encyclopedia that I could toss into my backpack along with my textbooks, I later took a couple of programming classes, and decided it wasn't for me. However, I couldn't stay away from computers. I was the seventh person hired at 800-Software (a software mail order company) back in 1982, and watched it grow to some thirty-four employees by the time I left a year and a half later. It was pretty exciting. But I didn't really find out what I wanted to do with computers until I joined and helped run a couple of Women & Computing groups a few years ago. Since 1992, I've been using email and the Internet for online activism. I've now been working with computers off and on now for close to fifteen years.

My older sister Nhu is a journalist who, unable to avoid the technology revolution, regularly modems her articles to the office, and spends time researching articles by logging onto various computer systems from home. I've always found this astonishing. To this day Nhu treats technology—all technology, including the innocent fax machine sitting on her desk—gingerly, and at times with genuine terror, as if they were all temperamental machines that might go kablooey at any moment if she pressed the wrong key, or pressed something at the wrong time. But that is another story, for another day.

My younger sister, Mai-Linh, a "Noise" musician* whose band has now released two CDs—oeuvres that our family cannot listen to even for five seconds—blithely sails through the most complex of computer systems, as if it were no more difficult than working on a suntan on the beach. (Actually, getting a suntan in Germany is *much* harder.)

Mai-Linh is a German language buff who went to visit her boyfriend on his junior year abroad in Heidelberg one Christmas some eleven years ago, promptly found a job and a place to stay in Berlin and has been there ever since. After a stint as a bartender (she doesn't drink), and several years as a cook (she didn't know how but told them she did), Mai-Linh, who at the time was a punk musician who typically wore a heavy leather jacket, blue nail polish, torn tights, torn T's, leather minis, carried a set of keys heavy enough to give someone a concussion, and cuts her hair so that it stands on end (quite chic actually), got a job as a civilian working at the U.S. Army base in Berlin. Interestingly, they had no problem with the way she dressed. They needed someone to work on their Unix computer system, working with some difficult staff members, and she was willing to do it.

Mai-Linh's latest job is at Font Shop International, and as it is heavily graphics-oriented, it is one of the few Mac-centric companies in Germany. After taking to the Macintosh like a duck to water, she set up a complex FileMaker database and the company's FirstClass system for inter-office email and file transfers between their many offices throughout Europe. Not bad for someone who's never touched a Mac in her life, or even watched over someone else's shoulder while they worked at a Mac. Mai-Linh never ceases to amaze me. She has what appears to be quite minimal support, documentation or any other resources (user groups, for example) in dealing with any computer or technical issues, and as far as I know none of her friends in Berlin use Macs, and yet she manages just fine.

Mai-Linh's latest project, connecting her company to the Internet, is what she talks about below. If there is a conspicuous absence of computer jargon, it is due to the fact that she either (a) only knows the German words for the concepts, or (b) never learned the proper terminology at all. Here is her story, kind of like a German's-eye view of connecting to the Internet.

—Hoai-An

Far be it from me to give a scientific account of how the Internet works in Germany.

First, to understand where I'm coming from, you should know I'm one of these totally computer-illiterate people with no formal training who've somehow stumbled onto the computer industry by accident, just in the same way that you might trip over a large rock while ambling through an overgrown backyard. I've been fortunate to have gotten by mainly through a combination of intuition, logic, creative problem-solving, and some willingness to

learn by being playful and making interesting blunders. And, of course, I've survived with the aid of pure luck.

I haven't the faintest idea how this came about, but, despite my total lack of education in computer-related matters, I've been earning a good income and have had plenty of fun working with computers for a good seven or eight years now. I figure I must be doing okay, since I just got my third raise in two-and-a-half years at my current job. I am now working for Font Shop International, a respected software company in Berlin which specializes in producing PostScript Type 1 typefaces for Mac and PC, with a strong emphasis on aesthetic and creative quality.

At my last job I started out as kind of a glorified, multilingual secretary but, once I made friends with all the computer systems and learned to do all kinds of neat tricks with them, I was soon crowned queen of the databases, and won a whole stack of awards for superior performance in the five years that I worked there. So who knows, maybe I'm good at what I do—or maybe the Great Almighty Computer God figured I could use a break and decided to take me under his or her wing. Whatever.

Anyhow, it happened that, after years of hemming and hawing, my current employer decided one fine day that we simply couldn't do without a Web site, or Internet access for everyone in the company (not just the techies), so they asked me to figure out a quick, cheap, reliable way to hook us up to the ole Net. Well, well. Just my kinda job. I'm a great proponent of those pioneering kinda jobs where none of my supervisors has the faintest idea what needs to be done, but they give you a big project, a tiny budget, a scary deadline, a friendly Mac to keep you company along the way, a couple of emergency telephone numbers, and an encouraging pat on the back. Then they leave you pretty much to your own devices and drop in on you like six months or a year later to check the results. So I accepted.

First thing I discovered is that, if you live in Germany, you should not ask yourself "Who is the best possible and most affordable Internet Provider I can get my hands on?," but rather you should ask something more along the lines of, "Which of these bozos sucks the least and costs under three thousand a month?" That's 3,000 *Deutsch Marks*, about $2,000 U.S.

Sad but true—the connectivity in Germany is not all that great. To say nothing of the expense. Being a self-professed dunce in such matters, I'm a little hesitant to venture to explain this phenomenon, but from what I gather, it seems that the meager handful of main providers in Germany all hook up to the Net in ways that are supposed to optimize connections to the outside world but, in doing so, make for lousy connections inside the country. If you are in Berlin and are connected to provider A, for example, and you want to send an email to your friend Hans Wurst, who's connected to provider Z, say, in Hamburg, it might well happen that your mail zips up to Sweden, wends its way back down to the E-Bone (the European Backbone: the main backbone or net connection within and to/from Europe), crosses the ocean, gets routed through some server in the .com domain, say, in California, and then comes limping back to Germany by an equally complicated and improbable route. The logic behind this, so I am told, is that some German providers believe the connections are better and faster in the United States, so it's best to have a server over there in addition to your connection here. Other German main providers, at the same time, have nice, fast connections to God knows where for the same reason, though not necessarily to the United States, so the result is that they all have better access to everywhere in the world than to each other.

Surfing the Net in Germany is like trying to ride the waves while perched anxiously on the back of a large refrigerator. With a couple of millstones tied to your feet. Then, of course, you have a tendency to wipe out frequently as well.

Some people have to learn the hard way, I guess. I must admit that things are certainly beginning to improve as the Germans grow more and more conscious of the commercial advantages of the Net. Still, the so-called "Datenautobahn" or "Information Highway" is still largely plagued by lots of annoying traffic jams.

Surfing the Net in Germany is like trying to ride the waves while perched anxiously on the back of a large refrigerator. With a couple of millstones tied to your feet. Then, of course, you have a tendency to wipe out frequently as well.

On top of this, it gets really bad at about three to six in the afternoon, Central European Time.** This, I speculate, is the time of day when everybody over in the States is starting to mosey into the office and dig around for their email or check out what's new on the Internet. Rush hour, I call it. It's like, heaven help you if you're in a hurry to get anything done online at that time of day here. At certain times of the day in Germany, sending data through the Net is comparable to squeezing a large tube of toothpaste through a tiny paper drinking straw. You squeeze and you squish and you squoosh patiently for thirty, forty, fifty minutes, and just as you're about to send the last little dollop through, the paper straw gives out on you, rips open, spills its guts all over the floor, and you have to start all over again. This, my friends, is what we call the miracle of modern technology.

So much for connectivity. Once you've finally managed to zero in on a

few potential providers who seem reasonably well-connected and fairly trustworthy, it may suddenly dawn on you that you can't afford any of them. Strange as it may seem, it takes an enormously long time to arrive at this conclusion because they all have such abstruse, convoluted and utterly labyrinthine pricing structures that you need to have a double Ph.D. in higher mathematics and nuclear physics to be able to estimate what your costs will be.

Fortunately I was restricted by fairly considerable budget constraints, so that pretty much ruled out all the main providers and left me with a bunch of several slightly overpriced sub-providers to choose from. Ultimately I settled for a local sub-provider with reasonable prices and decent connectivity, and I think they were a good choice under the circumstances. One important consideration was that this particular provider happened to be heavily Mac-oriented, unlike most other commercial enterprises in Germany. Apart from their irritating habit of changing prices and having to be bargained down again and again, and a few other minor complaints, I guess they're basically satisfactory.

There were of course other related hassles to deal with, like the day I called the German telephone company to find out if they'd finished processing our application for an ISDN line which we'd sent in months in advance. "Application? What application? What company? Who are you?" was the answer. What a nightmare. Or the day we finally got the ISDN line and eagerly hooked up our brand-new router to it, only to find out that the router had been dead on arrival the whole time. No amount of RTFMing could have prepared me for this, I tell you.

If you happen to be an ill-educated, aspiring webmaster in Germany, I suggest you consider moving to another country.

Fortunately things eventually did work out. We now have a very nice Web site and we can finally all revel in the joys of email without the exorbitant cost of several shared CompuServe accounts. Still, my advice to you is: if you happen to be an ill-educated, aspiring webmaster in Germany, I suggest you consider moving to another country.

FontShop International's web site: http://www.fontfont.de

**I asked my sister what a "Noise" musician is, and this is what she said:*

"Noise" is the American/English spelling and it means "noise." This is a special brand of music that began I believe some time in the mid to late 1980s and is considered to be the ancestor of "Grunge". In the same fashion as "Grunge," "Noise" is heavily guitar- and drum-oriented and tends to be "hard." Some "Noise" bands have added an extra element of noisy samples in the background, but by and large it's all about sweaty guys with baseball caps and electric guitars. Best known perpetrator of "Noise" is the Amphetamine Reptile record label in the U.S., who were the first to specialize in this type of music and feature most of the best known Noise bands. These include bands that you probably never heard of like Helmet, The Jesus Lizard, the Cows, Tar, Unsane and Gastro del Sol.

***On the east coast, this is roughly equivalent to about 9 am to 12 noon, and on the west coast it's about 6 am to 9 am.*

A note about our names: In our immediate family, Mai-Linh, along with our older sister and our father, uses the Vietnamese convention of putting the family name first, and her first name last, hence: "T. T. Mai-Linh". My mother and I westernized our names, putting the family name last.

Chat with a Web Mistress

by Grace Sylvan and Hoai-An Truong

WHEN I PUT OUT A CALL FOR ARTICLES by women programmers, Grace Sylvan (also known as Tigger) stepped forward. I'm very pleased that she did! Grace is a mother, a programmer, a seamstress, she has had a strong interest in child rearing and development for many years now, and more. At her suggestion, we did an interview by email. As you will see, she is a good writer, with many talents. In answering interview questions, Grace anticipated many potential difficulties in this form of communication, so that her responses flow very well, such that they required a minimum of editing and clarification. For example, when clarifying some details, Grace wrote: "I'll try to make these pieces so that they can be easily cut and pasted in…" It was a real pleasure to work with her—and everybody else!

—Hoai-An

Q: How and when did you first get involved with computers?

I was a freshman at Rutgers University, and a new friend told me she had this great place to hang out. It was air conditioned, and we could use the terminals (which connected to an IBM mainframe of some sort) to play games like Robots. We played on a terminal that had no special graphics capabilities—all the images are represented in ASCII text—so it would just repeatedly display the new screen.

Q: Why did you pursue programming as a career, and what kinds of obstacles, or support, did you come across along the way?

My career began as what they called working "Aid Station" where we had to babysit the computer rooms and help the students use the computer to debug their programs. This was a part time job for students at Rutgers, New Jersey. I then got a full time job doing the same at a community college.

I wore many hats those days, everything from system administrator of their VAX, to user trainer, to the debugger of the students' programs, to documentor. I eased into those many responsibilities during my years there. When I tried to find another job the fact that I had so many abilities sometimes got in the way.

When I moved to California, I found a job at a business that designed and critiqued user interfaces. This was a small business, where the owner attended many of the meetings with the clients, and a few employees worked with him in the office designing the interfaces and writing the corresponding reports. We used a small group of networked Macs to create the illustrations and reports. With so few employees, my varied technical experience, writing experience, and artistic talents were all valuable assets. Eventually, my husband Kayvan and I wound up living in San Jose, and the hour-plus commute to Berkeley was very tiring. After we got married, I left that job, and continued doing part time seamstress work.

As for support, I always had people in my family (like my parents, who were happy when I got good grades, didn't knock me when I liked math and science better than English) who were generally supportive of me. Kayvan, too, is obviously instrumental in my going back into the technical field. It is still sometimes a challenge to juggle all of our different responsibilities and goals. As with any family that has two parents working, finding a balance is an ongoing effort.

Q: Why did having many abilities sometimes get in the way? Can you give me an example?

Sometimes when I interviewed, like for a systems administration position, prospective employers wanted someone who had specialized in that area, and they weren't quite sure what to make of me.

Q: What was interesting about your work/ or being involved with computers?

I was technically oriented, I really liked my math and science classes as a kid, and I got to help other people. I also appreciated being able to edit my text online and edit my artwork the same way. Erasing artwork on the computer doesn't damage the paper. I could tweak and experiment to my heart's content.

Q: After you left programming to become a seamstress, what made you decide to return to programming, and are you basically happy with the decision?

Well for a while, I did neither. My active and inquisitive daughter kept me very busy and I referred to myself as "retired" [laughs]. As Katherine grew older, my sewing activities shifted to children's clothing, costumes, and gifts. I also continued reading email and some news-

Erasing artwork on the computer doesn't damage the paper. I could tweak and experiment to my heart's content.

groups. And we had Robin two and a half years later.

One fateful evening 2 years ago, Kayvan, my husband, asked me what I wanted to be doing with my life in addition to raising the children—because he wanted to support me in whatever I wanted. The children were 2.5 and 5 years old at the time, so parenting demands were easing up a bit. I'd been looking at Shareware and commercial children's programs for years, and had ideas for what I'd like to create. So I answered, "make some children's Shareware." We knew I'd need some tools, so I did some research (using the Net), and two weeks later we purchased SuperCard. I wrote a Christmas program that year instead of sewing gifts. I was very excited—both for the fun of making a neat children's program, and because I guess I've got some disease that has me think that programming is fun. I definitely enjoy beta-testing my children's programs and coming up with fun ideas.

Then I got connected to the Web's graphical interface (I'd seen the Web with Lynx, but that never really excited me). I immediately went searching for a site for children's programs. When I didn't find anything that fit the bill, I decided to begin my own. But without the support of my family, who sometimes got dinner late, I would never have been able to do it. My Web pages are now well known, have gotten many awards, and will soon be generating income. The Shareware programs I've written have been well received. I have more program ideas, but it takes longer now that I am juggling my Web site with programming.

Q: How will your Web site be generating income?

I'm working with an ad agency. My Web site will be generating income with ads. In addition, the Web site does serve as a good showcase for my programs. My three most recent programs have been Freeware, but I have some educational programs planned which will be Shareware.

Q: What were the advantages of using SuperCard?

I chose SuperCard because I needed a program that I would be able to get quick results with. I still was caring for my family full time, and did not have months to spend learning how to, for example, make calls to the Mac toolbox. SuperCard is similar to HyperCard, except that it has added graphic and animation abilities, and integrated color support. In a month, I had the first version of my Christmas program ready for release. It had a tree that could be decorated, played some Christmas music, and had animated click points and a Nativity scene that could be arranged

Q: What's a typical day for you, and how do you use computers in a typical day?

A typical day. First I read my mail, including homeschooling lists—I am homeschooling my two children. I am on and off the computer all day, taking some time for the children, then back to work. After mail (which includes answering questions, bug reports on my site, and so on), I will work on my current project, which might be tracking down broken links, downloading programs to test, writing up the mini-reviews, creating a kid activity for our holiday pages, or doing some programming. I try to keep goals small so that I can focus my attention on this small goal (i.e., fix all broken links and review three programs for each platform) and finish up before going on to the next. There is always more to do now than hours in a day.

And we use the computer as a resource for almost any question we might have. Recently Kayvan brought home jumping beans, and we found a Web site that answered the question, "What is inside a jumping bean?" We even use the Web to make airline reservations. I definitely use the technical lists I'm on whenever I get stuck—and usually within 24 hours someone has responded with help!

Q: Where did Kayvan get the jumping beans? :+)

I think he got them at the local Walgreens!

Q: You told me once that you liked to keep in touch with other parents via email lists. Have you continued to stay in touch? What role has this contact played in your life?

I definitely use the computer to contact other parents. One parent who I'd known from misc.kids was also on the homeschooling list when I joined it 3 years ago. She answered a lot of my questions, plus we get together from time to time, and our children would play. Unfortunately, I could not continue my participation on misc.kids, I just didn't have enough hours for it and the homeschooling and some technical forums I'd added. I've gone on fabric shopping trips with parents I met on alt.sewing, traded children's patterns—and our children played together.

Over the years, I've been able to find support and help from people on the Net for almost anything I've been involved in. For example, recently Katherine and I were trying to fix a few missing pieces from a game that belongs to our homeschooling program. I needed some missing text and instructions—and asked on the homeschooling lists. Another parent had the game and emailed me all the information.

Q: What's misc.kids?

A newsgroup that is mostly read by parents. There are also teachers,

aunts, uncles, and grandparents. They discuss all sorts of parenting issues from discipline to TV shows to cute things kids do.

Q: What are your current projects?

Primarily my Web site, "Children's Shareware and More!" I still consider the main thrust of my site the Shareware/Freeware section where I list programs that my family, other families, or teachers have recommended. I also list interactive demos and sites with reviews of commercial software. There are other well developed areas of my site—like a page of links and tips for Web development and graphics, an area that has over 600 icons and graphics for kids, our holiday pages, and Katherine and Robin's page, where we list some of our children's favorite sites.

I usually help Katherine and Robin surf because large pages of text are a bit intimidating for them to navigate. Still, they learn quickly, and Robin was able to go to the Power Rangers site (when it existed) and download his own QuickTime movies. Although he couldn't read, he's got a great memory.

Right now, the only holiday pages I have are Halloween and Christmas, but I'm planning on adding a spring and summer area next year. Between working on the site I work on children's programs. I've got four released so far—ChristmasTime, and three small Freeware programs that were a joint venture with Loraine Wauer, the creator of Billy Bear Storybooks. They can be played online by Mac users. There is also a downloadable version.

Q: What new programs are you thinking of doing next?

First I'll be adding a new game to my Christmas program. Next, probably a reading program with an assortment of games. I also have friends, family over the years and across the country I'd like to see.

I've got old friends in New Jersey that I speak to from time to time on the computer. My family is still in New Jersey. My brother has sent artwork, sound files, and little notes to my children. My sister was on only briefly, hopefully she'll be back soon. And my father is thinking of getting online. My folks were pretty amazed to hear that my pages were getting over 2,000 visitors a day. (Those numbers are climbing rapidly. I just found out that I'm getting about 3,500 visitors a day). When I recently visited them, I was able to show them Katherine's artwork and screen shots of my program on their PC. My father-in-law is also on the Net, and he writes to us and Katherine, who has her own mailbox.

Over the years, I've been able to find support and help from people on the Net for almost anything I've been involved in.

It is always easier to get a hold of me via email than with a phone call. I can read my email any time, day or night. I can read a message, think about it while doing something with the kids, and then respond when I get a break. I can also type while they are playing noisily in the next room, and stop if they need me.

Recently I was able to join forces with Loraine Wauer, who writes children's storybooks for the PC, to create some online children's games. This happened through email and the Web—we live in different states. We had already been becoming friends via email before we did the joint programs.

Q: Anything else you want to tell us about?

There are people who talk about cyberspace as if it isn't the real world. But I get real messages from real people all the time, such as a note from a school teacher who was overjoyed that I have an "old Mac" area on my Web site which is bringing new life to their machines. Or someone who wrote that his 2-year-old daughter "had almost worn a hole into the screen by clicking on the wreath" in my Christmas program (clicking it makes it spin around with a "boing" sound). Notes from daycare providers, parents, teachers, and even sometimes the children themselves, all saying how my work has affected their lives. This is very powerful. And it's more people than I could ever contact in person.

Q: How has computing made child-rearing easier for you?

Well, I can work at home. This is also due to Kayvan's high-paying consulting jobs… Then again, computing made this all possible. I lived in New Jersey, and Kayvan lived in California. Once we had connected (at a gathering in New Jersey based on an email list—yes, some people flew in from California just to attend this week-long event) we emailed and "talked" back and forth every day.

In a more day-to-day sense, I can seek out the people with my interests—be it homeschooling, respectful parenting, or doing crafts with children—and get information, ideas, and even reassurances during those challenging parenting moments. I'm not limited in where I look for support. Many of our favorite books, our favorite Play Dough recipes, craft projects, and more have come from my "Net friends."

Children's Shareware Pages:
www.gamesdomain.com/tigger/ (US)
www.gamesdomain.co.uk/tigger/ (UK)

Tigger (Grace Sylvan)
Mom of Katherine Yelena, 7
Robin Gregory, 4
tigger@satyr.sylvan.com
www.sylvan.com/

A Computer Person in a Woman's Body?

by Muffy Barkocy

So, I got this note in email saying that someone wanted an article about what it was like to be a woman in computers. What's it like? In a way, I can't say—after all, I haven't been anything else, and I can't imagine living any other way. It is a way of living, certainly.

Like most of the men in computers that I know, I was a shy, introverted, socially inept child who read a lot of science fiction and tended to think of myself as alien and "weird." In fact, after I became a programmer, I was having dinner with my mother (a manager) and she turned to me and said, "You know, you're weird." She didn't understand my addiction to computers.

In computers, though, I'm not weird. I was unusual for a long time in being one of the few female computer people around. Not just someone studying computer science, but someone who sat up all night in the computer lab working on programs for myself because I enjoyed it so much. Someone who emailed a friend across the computer lab or across the city to ask if they wanted to have dinner. But I was accepted. People only noticed my being female in that I got a lot of offers of dates. But from day to day, we were just people who shared an obsession.

Indeed, until I got into computers, I didn't really have anyone to have dinner with. Once I got into computers, I had a whole network of people to talk to at all hours, on a talk program that was nowhere near as complex as IRC. Everyone socialized, but as one of the very few women, and usually the only one who was actually addicted to the things, I never lacked for people to talk to, people to go out with. And it was much less scary to talk to people over the computer and only meet them in person once I got to know them.

I learned a lot of computer languages; I learned to think in several of them.

So, for me, the first thing about computers was that they were fun, exciting, absorbing, and a great way for a terribly shy person to learn to socialize. I learned a lot of computer languages; I learned to think in several of them. I wrote interactive games to play with my friends over the network. I lived much more on the computer than I had in the world. All in all, I was pretty typical. Except for being female. Every once in a while, a man I knew would want to go out with me. They almost always said "You're the only woman I know who really understands me." Of course, it wasn't that I understood them as individuals, but that I wasn't about to say "You love the computer more than you love me", or even to object if the first thing they did in the morning was check their email—after all, that's the first thing I do in the morning, too.

When I was in college, I kept meeting people who had "heard of" me. I thought that was strange for a long time, until I realized that I was pretty high-profile, as one of very few women who was always in the computer lab. That's even more true now—I meet many people who tell me they've heard of me, or read my Web page. Usually it's fun, but once, while in college, I met this woman who had strong feminist views, and she apparently had developed expectations about me—she thought I should be some sort of role model, when all I wanted to do was live my life and play with computers. She was very disappointed in me. I didn't understand why until much later, because I knew very little about feminism and role models at the time.

In college, my favorite language was LISP. It was the easiest language to think about problems in, and I was lucky enough to get a job programming in LISP for a start-up in Berkeley when I got out of college. I was the only female programmer for the six years I was there. During that time, I learned something about feminism, and about the pressures and life I was supposed to have had, if I had been a typical woman, by talking to people (mostly male feminist friends, since most of my friends were male), and then on the Net. I was never a typical woman, though—just a typical computer person.

I was always amused when we'd be in a meeting and someone would say something that could be regarded as sexist. They'd immediately apologize to me. I think that was the only time I ever felt that anyone even noticed that I was "different." I thought they were over-sensitive, and I would have rather not ever been treated as different, but it was nice of them, all the same.

In meetings, too, women are supposed to have trouble getting listened to.

Especially if everyone else is male. I don't think it ever occurred to anyone to disregard me in any way. Some of that was "sensitivity," but a lot of it is that I have always been very confident when I'm among computer people. I think being a woman really helped with that—it makes me feel just enough different, special, without being an outsider.

I got a call from a headhunter one day… and she said there was this cool Web startup in San Francisco… and I should talk to them. So I did, and now I work as the Webmaster for a cool Web startup in San Francisco.

I burned out at the start-up and went to work for a small corporation for a while. Very relaxing, but not much to it. I finally got bored with that, just about the same time I got into creating Web pages. Like everyone else, I found it easy and entertaining; and, after all, there aren't a lot of things more fun than writing about yourself, adding sound and light, and publishing it. A guy from Geffen Records wrote me and asked if I'd like to do Web pages for them on a contract basis. I said sure, quit my job, and started working from home.

Speaking of home, my current setup is a SPARCstation 5 connected to the Internet via a T1 shared among four sites. I also have a Mac PowerBook for working on images and playing games, and a 486 PC for driving devices like the printer and scanner, and for doing my finances and taxes. It was a good setup for working on Web pages, and I did that for a year. I enjoyed doing something more "creative," although I have always felt that programming is, or at least can be, a creative endeavor.

However, I'm a programmer, not an artist. I'm also not much of a contractor. I don't like pursuing work. So, I got a call from a headhunter one day (they seem to go in cycles), and she said there was this cool Web startup in San Francisco (where I live), and I should talk to them. So I did, and now I work as the Webmaster for a cool Web startup in San Francisco. It's called Greet Street. We sell greeting cards over the Web. We'll be offering electronic greeting cards ("E-greetings") soon. It's cool because the people here are all very "San Francisco"—when I interviewed, one of the people said, "we should hire her, she's got a cool tattoo" (a large pair of purple eyes, on my upper back). It's also cool because there are a lot of artists here, which is a fairly alien profession to me, and it's fun to see them work. They, of course, think being a programmer is really strange and wonderful.

Once again, I'm the only woman in the department (I was the second programmer; we now have five). Once again, no one really seems to notice that I'm different. I don't feel different. For me, it's not about being a woman, who is, in addition, a computer person. Being a computer person is much more central to my life—being a woman is usually pretty incidental, except when it comes to intimate relationships—and I'm afraid I spend much more time on the Net than I do having intimate relationships. Much like most of my male friends.

Muffy Barkocy is a computer addict and programmer, currently working as Webmaster at Greet Street in San Francisco. If you want to know more about her, check out http://www.fish.com/~muffy/.

Not Exactly Child's Play

by Bronwyn Fryer

NEW ASSOCIATIONS OF WOMEN in computers are being created at a rapid pace. They provide support for women in various computer fields (multimedia, web design, Internet consulting, etc.), and much encouragement for women who are just getting started in those fields by creating electronic mailing lists, holding workshops, meetings, and special events to exchange advice, contacts, and experience, and by creating the increasingly ubiquitous Web site.

Girl Tech, a company that makes electronic games and toys for girls, is forging into the relatively uncharted market of games for girls, to stimulate the interest and confidence of girls using technology. The following article talks about Girl Tech's multi-faceted approach and aggressive marketing strategies to get girls involved in technology.

This article not only discusses gender issues in the toy industry, it's also the story of an underdog—a great rags-to-riches story about an entrepreneur who helped bring to the market the best-selling game *Where in the World is Carmen Sandiego?*, and who is also a single mother.

Enjoy.

—Hoai-An

About a year ago, toy inventor Janese Swanson was idly watching Saturday morning cartoons with her then 8-year-old daughter, Jackie, when a string of toy commercials blasted into the living room. One ad touted a voice-recording toy called Yak Bak—a hugely successful product that Swanson herself invented, with the help of Jackie.

As Swanson recalls, the boy in the commercial wouldn't let his younger sister play with the Yak Bak, though she kept trying to touch it. Eventually the little girl threw up her hands in resignation.

"My heart dropped through the floor," says Swanson. "And Jackie was crushed. She asked, 'Mom, why did the boy get to play with it, and the girl didn't?' "

Jackie's question told the whole story of girls and technology. That Saturday morning lit a fire in Swanson's belly. The 38-year-old inventor—who earned her stripes at Broderbund as a producer for hugely popular children's software titles like *Where in the World is Carmen Sandiego?* and *The Treehouse*—gave up her job as president of Kid One for Fun, Inc., the company that had developed Yak Bak. "That commercial made me say, 'That's it,' " says Swanson. "I knew it was time to do something for girls."

Today, Swanson is the founder and CEO of a new company: Girl Tech, a San Rafael-based firm that wants to make technology interesting, exciting and fun for girls. Girl Tech's many-pronged plan of attack: to develop and license a line of "cool" technological toys, software and Internet products that appeal to girls' brains, while improving their self-esteem. In addition to developing products, the company has set up a "Club Girl Tech" site on the World Wide Web (http://www.girltech.com/), and is the driving force behind a new Girl Scout technology patch or merit badge. Girl Tech is even working on a hip, independent, powerful girl cartoon character, Tech Girl, who the company hopes will be picked up by Hollywood.

The toy business is no fun

How successful Girl Tech will be is hard to say. But even if her politically correct toys are 20 times cooler than Power Rangers or Teenage Mutant Ninja Turtles, Swanson won't have an easy time getting her products to the shelves—and keeping them there. The toy industry can be brutal, even for conformists. "The toy business is tough and insular, and channel issues like shelf space, advertising and promotion are bloody," says Bill McDonaugh, president of Broderbund Software.

During the past 25 years, mergers and acquisitions have been a modus operandi in the industry, with smaller companies getting eaten, Pac-Man like, by multibillion-dollar companies Mattel and Hasbro.

The $11 billion toy market is notoriously conservative and slow-moving, making it a nasty place for small players. During the past 25 years, mergers and acquisitions have been a modus operandi in the industry, with smaller companies getting eaten, Pac-Man like, by multibillion-dollar companies Mattel and Hasbro. "Billion-dollar corporations aren't as fast-moving as small companies," says Ann Pitrone, senior vice president of advanced research and development for Toy

[U]nfortunately for small, ground-breaking companies like Swanson's, retail buyers at big chains like Target and Wal-Mart tend to be unsympathetic 20-year-old males…

Biz, Inc. in New York, a $270 million toy company whose line includes the Marvel action figures, Gerber pre-school products, and Apple for Kids electronic toys. "They rely on classical marketing expertise, not gut instincts, in getting products to market."

At the same time, the industry is as susceptible to constant and frivolous change as the fashion business—or the fantasies of a fickle 7-year-old. Kids—and the manufacturers trying to tap into their collective psyche—want the latest, greatest, hottest thing, but what's hot today won't be hot tomorrow. Pitrone has firsthand experience of this problem: Coleco's Cabbage Patch dolls—a product line with which she was involved—were once a monster hit, but are hard to find now. "You can sit there with $200 million in sales of a product one year, and the next year sell only $50 million of the same product," she says. "After three years with Cabbage Patch, I didn't know if we were going to get a year out of it. We couldn't sit on our laurels: we had to start investing in new toys to make up the $150 million somewhere else. We call it 'feeding the monster.' "

The grindingly competitive retail channel presents another huge challenge. The largest toy retailers, such as Kmart, Wal-Mart, Toys R Us and Target, are under constant pressure by consumers to offer a wide variety of low-priced products, as well as good service. Toy stores pressure manufacturers to invest millions in print, media and in-store advertising when the product launches. If toys don't sell fast enough, the stores put the pressure back on manufacturers to guarantee that they will buy back unsold product. "Retailers say, 'Your stuff is sticking to the shelves, what are you going to do for me?' " Pitrone says.

In addition, Swanson's firm faces special hurdles. The vast majority of toys for girls fall into the doll category; in this arena, Barbie has always been the 500-pound Girl-illa. And cracking the technology-toy market with a toy for girls will be a tough go. Shoot-'em-up video games—92 percent of which don't include any female roles—and electronic toys already tend to be heavily weighted in favor of boys.

Exacerbating the problem is the fact that no one has yet produced successful girl-targeted products that don't fall into the pretty-in-pink trap: Even the very successful Sky Dancer, one of the few girl-gadgets around, is a kind of flying mini-Barbie. Most developers who try to depart from Barbie wind up pandering to the stereotypical clothes-and-boys obsession: Witness "Dream Phone," a pink telephone toy on which girls can call cute guys ("phone sex on training wheels," quipped Naomi Klein in the Toronto Star), or *McKenzie & Co..*, a software game from American Laser Games that teaches girls, among other things, how to shop for prom dresses.

Finally, and perhaps most unfortunately for small, groundbreaking companies like Swanson's, retail buyers at big chains like Target and Wal-Mart tend to be unsympathetic 20-year-old males, according to Sean McGowan, a toy industry analyst with the Wall Street firm of Gerard Klauer Mattison. "Getting a new toy on the market is pushing a rock uphill, even if you have the hottest toy in the world," says McGowan. "And if you don't have a product that turns those guys on—and I don't use that term loosely—it can be very difficult to get shelf space for any new product."

A Dickensian story

Still, Swanson believes in her products, and for good reason. Many parents of girls, eager to offer positive role models to their daughters, want someone—anyone—to come up with an intelligent alternative to Barbie. And in the Information Age, parents also want their girls to warm up to technology. Indeed, Swanson argues that the market potential for "cool" girl toys (read: technology-based and not obsessed with clothes or boys) is enormous: "There's a virtually untapped market of 10 million girls aged 6 to 10 who will buy electronic products if they are specifically designed for them," she insists.

Swanson, an education specialist armed with a doctorate in leadership and organization from the University of San Francisco, backs up her case with reams of statistics: there are over 19 million girls between the ages of 7 and 17 in the United States. This year, six million households that have PCs also have girls between the ages of 6 and 10. Over $45 billion is spent by girls this age in retail purchases every year. And so on. On the strength of this kind of evidence, Swanson has built an impressive business plan and attracted highly placed supporters at a major toy company, online service providers, the Girl

Many parents of girls, eager to offer positive role models to their daughters, want someone—anyone—to come up with an intelligent alternative to Barbie.

Scouts of the USA, IDG Books Worldwide, and Microsoft co-founder Paul Allen's Interval Research of Palo Alto.

Over a long lunch at a tony San Francisco restaurant, Swanson can barely pay attention to her crab cakes as she recites a litany of experiences that strengthened her resolve to improve the lot of girls. Her own childhood bordered on the Dickensian. The second-oldest of what would eventually become an extended group of six children, Swanson describes her family as "dirt poor." After her Vietnam-veteran father left the family for good, her mother worked as a beautician to keep Swanson and her brothers and sisters alive. Swanson remembers sharing a single potato with her siblings for dinner, "living on oatmeal, and cutting out pictures of mouth-watering food from magazines. If we couldn't eat it, at least we could look at it," she says, laughing. One summer, the family was homeless. "We lived in the back of a truck. It was like camping out every night. It was kind of fun for us, but it was awful for my mother."

As a girl, Swanson loved mechanical things. "Ever since I can remember, Janese tore machines apart to see how they worked—phones, typewriters, you name it," recalls Swanson's mother, Jenna Plein, who now helps Swanson in the business. At 10, Swanson took apart a typewriter, developing a secret code by switching around the letters on the keys. Especially intrigued by voice-recording, she took a screwdriver to a tape recorder she bought with trading stamps donated by neighbors. "The only doll I ever wanted was a straight-haired, bookwormy talking doll from Mattel called Chatty Cathy," Swanson recalls, with a shade of wistfulness. "You pulled a cord in her back and she would say silly things like 'Do you like pickle ice cream?' But we were too poor to buy it."

As she approached puberty, the tall, athletic girl cleaned houses and baby-sat to help out the family. She applied for a job as a newspaper carrier, but was devastated when the newspaper refused her because she was a girl. By the time Swanson was in high school, she had developed a teeth-gritting determination, as well as a deep interest in scientific and technical subjects.

"I wanted to be a doctor, but I was told I was 'not meant' to take chemistry," she recalls. Instead, a high school career test prophesied a future for her as a model, a retail sales clerk, a flight attendant, or a teacher. "I was discouraged, but I just gave up and did what they told me," she recalls. "I figured they must know better than me."

After a brief stint as a model ("I loathed cattle calls," she says), Swanson sold electronics at Sears, where she became a top salesperson. By then, she'd decided to return to school at San Diego State. She spent the next 10 years in academia, earning a teaching credential and graduate degrees in education at Palomar College, UC Berkeley and the University of San Francisco, while holding down full-time jobs. (She gave birth to Jackie while working as an educator.) Not long after Jackie was born, Swanson was hired at Broderbund Software in San Rafael. There, she worked as a senior product manager, helping to produce best-selling, gender-neutral children's software products like Carmen Sandiego.

"She was the quarterback of the development team," recalls Broderbund president Bill McDonaugh, one of Swanson's supporters and an investor in Kid One. "She has wonderful ideas, and a kind of winning attitude that permeates those around her."

The long, hard working hours away from her infant daughter led her to begin experimenting with sound and software. "I found this chip that could do simple voice-recording, and I thought about how neat it would be to put this chip on two picture frames—one on a picture of her on my desk, and another on a picture of me at her day care—so that when we pushed a button we could hear each other's recorded voices," she says.

Swanson tested the way children played with the voice-recording technology, and found that they loved playing with the sounds. The idea for a product based on the chip nagged at her. In 1992, she left Broderbund to found her own company, Kid One, where she developed and licensed electronic talk toys like Yes! Entertainment's Yak Bak, a small, palm-held recording device, like a tape recorder without the tape. Enclosed in a clear plastic case, the Yak Bak lets children see the

The long, hard working hours away from her infant daughter led her to begin experimenting with sound and software. "I found this chip that could do simple voice-recording, and I thought about how neat it would be to put this chip on two picture frames—one on a picture of her on my desk, and another on a picture of me at her day care—so that when we pushed a button we could hear each other's recorded voices…"

transistors inside; they can record six seconds of any sound, then play it back. Yak Bak sold 800,000 units; it and other Swanson-designed products like it have pulled in over $50 million in retail sales—an unusual success for a first product, according to McGowan. But when Swanson saw the disappointing ad for Yak Bak, she switched companies again.

The breakthrough

Swanson is positioning herself to make it in the toy industry. Last year, armed with a business plan and prototypes of her technology gadgets for girls ("that doesn't necessarily mean pink," she says with a smile), Swanson began garnering industry support for her work. Fathers of daughters were especially sympathetic. In January, analyst McGowan, impressed by what he had seen and heard of Swanson's product ideas, wrote a letter of introduction for Swanson to the chairman and CEO of a major toy company, urging him to learn about the company and lend Girl Tech its support.

Recently, Swanson took a trip to Hong Kong to scope out toy manufacturing facilities. … She surprised the male Chinese plant supervisor by insisting that a woman supervise the manufacture of her products. "He told me that women weren't the same there, that all they wanted was to get married and have children…"

Swanson champed at the bit for the chance to show this CEO and others in the industry her prototypes. But she couldn't afford the fees for booth space at the Toy Fair trade show in New York—the toy-industry equivalent of the giant Comdex computer show. So Jeff Braun, president of the Walnut Creek-based software-game company Maxis, loaned her the $10,000 she needed to set up a booth. "One day she called me, and said she had to go to Toy Fair, but she didn't have the money," Braun says. "I wrote her a check, because I have a lot of respect for her. In this industry, I meet so many people who think they're God's gift; she's just the exact opposite. I told her, 'When you get your act together, you can pay me back.' "

Buoyed by the loan, Swanson flew to New York, then set up her color laptop on a table and passed out brochures in a tiny 10-by-10 booth at the huge trade show. "We had our prototypes up against the wall, like they were going to be executed," she recalls. "Big companies like Mattel had these million-dollar, three-story buildings, and there we were in a popcorn stand."

At an inventor's party during the show, Rus Edmisson—a well-known toy designer who invented the enormously successful Care Bears and Strawberry Shortcake for General Mills—introduced Swanson to the CEO, who singled out a surprised Swanson for special attention. As a result, by spring of 1997, Girl Tech products should be on store shelves, bearing the toy company's name. The hookup with this company, according to experts like Pitrone, is very smart. "A lot of small companies don't have the resources to do the promotion necessary to get and keep a product on the marketplace," she notes. "Janese can play with the big boys because her ideas are very good. Selling her ideas to other companies with the distribution and bargaining power with retailers, she can still be running her own company."

Recently, Swanson took a trip to Hong Kong to scope out toy manufacturing facilities. She was appalled by the fact that the toys were put together exclusively by young women, working long hours and shoulder-to-shoulder. She surprised the male Chinese plant supervisor by insisting that a woman supervise the manufacture of her products. "He told me that women weren't the same there, that all they wanted was to get married and have children," she recalls. "But I pointed out that if he was as interested in total quality management as he said he was, he'd have to have a woman supervisor, since these products were for girls."

Once Girl Tech's products do hit the shelves, whether they will sell remains an open question. On one hand, in the kids' product world, Swanson's previous products have done well. But even those who believe that Swanson has what it takes to make Barbie move over think she is in for a tremendous uphill fight. Analysts like McGowan feel that Swanson will have to be very careful in marketing the products. Others think that no matter how intelligently the products are marketed, retailers will favor the status quo. "It's simply easier for retailers to promote a unique doll in pink than an electronic item for girls," says toy designer Edmisson.

Beyond Barbie

Meanwhile, Girl Tech is not putting all its eggs in the toy basket. Before any products hit the shelves, Girl Tech is seeding the ground with an awareness-raising campaign on the Internet. In April, the firm launched its online Club Girl Tech, where girls play interactive games, hear from women role models in dreamed-of professions, learn about women in history, and write to pen-pals all over the world. (A built-in translator will translate from the native language to one of seven others.)

Girl Tech is also reaching out to 3.5 million Girl Scouts. The Girl Scouts of the U.S.A. is considering a proposal by Girl Tech for a technology patch or merit badge: to earn the award, a girl would tear apart a computer, explore the Internet, learn a software program and perform other technology-related activities. Once she completed the tasks, she would receive Girl Tech's cool voice communicator, a half-dollar-size pin that lets her record her voice. "Girls and technology

is a subject we're interested in too," says Nancy Berg, executive director of the San Francisco Bay Area Girl Scout Council. "We're taking steps to get our girls more involved in technology."

Swanson is also going Hollywood, talking to companies including DreamWorks, the Spielberg/Geffen/Katzenberg film studio, about a cartoon character called Tech Girl, a futuristic, bright, inventive, and powerful 9-year-old who learns by doing. In addition, Swanson is writing a book about girls and the Internet for Prentice-Hall. (Plans for CD-ROM games, too, are in the works, though Swanson won't divulge the specifics.) All these efforts are part of an overall effort to reach out to the untapped market of girls. "The goal is to reach young girls, wherever they are," says Girl Tech sales director Linda Halunen. These efforts with the Web site and the Girl Scouts are unusual and educational, but they're also creative marketing.

In April, Interval Research, a corporate technology research organization in Palo Alto, gave Swanson's company enough bridge financing to pay the bills. And Nancy Rhine, director of women's programming at America Online, has pumped for Girl Tech with AOL Greenhouse, AOL's venture-capital fund for innovative new businesses. "Janese has charisma, brains, sincerity, integrity, and a bunch of hot products," says Rhine. "And she has a proven track record. I give her a 90 percent chance of success."

In the face of such accolades, the fact remains that no company has ever been successful in breaking Barbie's stranglehold on girls. "In 1985 or '86, we introduced a business Barbie dressed in a pink suit and carrying a briefcase," says Roberta Jacobs, a former Mattel executive who now works as a vice president for Viacom New Media. "We couldn't give it away. But," she adds, "today the Star Trek Barbie is selling. So things are changing, though slowly."

Even if Swanson's toys prove unsuccessful at first, Jacobs, Rhine, Braun, and others believe her persistence will eventually pay off. "Part of being a pioneer is getting arrows in the back, and that's what Janese is all about," says Braun. "No one's ever had success doing what she's doing, but she has tenacity. She truly believes that whatever doesn't kill you makes you stronger." Swanson's daughter, Jackie, has a lot of faith in her mom, too. "Mom's cool," says the 9-year-old. "She made Girl Tech so girls could have fun with tech stuff, 'cause all the boys have cool stuff and girls don't." For Jackie's sake—and the sake of girls like her—Swanson holds on to her vision like a St. Joan. "People are capable of amazing feats," she says. "I want girls to know that includes females, too."

Bronwyn Fryer is a free-lance writer in Santa Cruz.

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Libraries and Technology

Or, Why I Went to Library School

by Jennifer A. Smith

IN DEALING WITH ISSUES IN COMPUTER and communications technology, librarians play an increasingly key role. In addition to now organizing online resources, they have a key role in dealing with information access, censorship, shaping public policy and other issues—as they have for many years. A long-time online activist, Jennifer Smith has taken time out of her last and busiest semester in grad school to tell her story of the issues that drew her into the field of Library Science.

—Hoai-An

Just as green revolution technologies could increase social stratification, today computers and electronic networks of information have the potential to stratify our society into information "haves" and "have-nots".

In my last year of college, faced with a large BA thesis, I learned to use a Mac in two and a half days. That was my first experience with personal computers. Yet I had grown up less than a mile from Apple, in what was becoming "Silicon Valley"— though I always thought of it as just a valley.

Before the 1980s, Silicon Valley still had big stretches of orchards, grass hills, and oak groves. I still remember Mariani's fruit packing plant on Stevens Creek Road and other agricultural companies in the area. It was strange to watch the area change. To this day I think the confusion and dismay of watching orchards disappear under concrete grounded my interest in how societies develop. In college I majored in Development Studies, an interdisciplinary major that focused on economic development. Notions of "progress" were actively debated. A common example was the pros and cons of green revolution technology and its impact on social stratification in India. Green revolution technologies such as high-yield seeds may not in themselves have increased income inequality but the way they were adopted did. Many, if not most of us concluded that successful economic development strategies nurtured self-reliance and alleviated sharp income disparities between rich and poor. How a technology was developed or used could play a powerful role—positive or negative—in the development of a society or community.

Now I am completing my Masters in Library Science. Entrance into this field was partly by serendipity, and in part an extension of that interest in development. Librarians are dealing with some pretty heavy issues. In many ways they parallel the issues I studied in school. In the variety of environments in which librarians find themselves—public libraries, corporate libraries, Internet service providers, school libraries, academic libraries, archives, or as information brokers—librarians must assess the new technologies in ways that make sense both economically and functionally, and in the midst of so much change, understand their impacts for the common good. They must not only find the appropriate technology for the job and for their users, they must also keep an eye on the big picture.

Just as green revolution technologies could increase social stratification, today computers and electronic networks of information have the potential to stratify our society into information "haves" and "have-nots". In fighting for discounted telecommunications access for schools and libraries and for information equity, advocates including the American Library Association have encouraged grassroots participation in creating social policy to ensure online access for all. Many librarians are also fighting for free access to taxpayer-produced government documents that others want to charge money for. These are only a few of the larger issues librarians are facing.

I had some idea of these issues in the context of the library before I came to library school. I worked in an archive after college, but did not enter library school until several years later. In between, I worked for a multicultural education nonprofit and volunteered and worked with PeaceNet (an ISP focusing on community online activism and non-profit access). These experiences brought me closer to issues of information access, intellectual freedom, censorship and diversity.

Librarians have been dealing with access, diversity, and censorship issues for decades.

Librarians have been dealing with access, diversity, and censorship issues for decades. Those most experienced may be school and public librarians who must respond to diverse community concerns. One difficult issue they deal with is the occasional challenge to library materials by patrons who may feel a book is inappropriate, a danger to morals, racist or otherwise offensive. Librarians need to respond to patron concerns while upholding professional principles of intellectual freedom and opposition to censorship.

Now librarians are dealing with these issues in the electronic realm, navigating between the Internet hype (Internet as panacea for everything) and Internet censorship (exemplified by the Communications Decency Act). Librarians also know from helping patrons with online and CD-ROM databases that basic access may not be enough; online searching skills and how to interpret online information are becoming increasingly important components of basic research competency.

Several months before I started library school, I attended a Bay Mac Women meeting and heard Karen Coyle, a librarian from UC Berkeley, and Sue van Hattum, from IGC networks (home of PeaceNet, EcoNet, WomensNet, etc.). Both had fascinating experience in the technical and policy/human issues surrounding online communications. It was great to hear them talk and it made it even clearer to me that librarianship was where I wanted to go.

I still have a lot to learn but of course that and helping others are the best parts of being a librarian.

Jennifer Smith is a graduate student at San Jose State University and research assistant at the Steinbeck Research Center.

The Role Model Project for Girls

by Judi Clark

"What do you want to be when you grow up?"

How would a 9–16 year-old girl answer that question? How would she know what choices she has?

There is an overabundance of papers, studies, and speeches which illustrate a striking imbalance in how:

- girls and boys are treated in school,
- they are portrayed stereotypically in the media,
- they view themselves differently with regard to career choices, and
- these cultural stereotypes and actions translate into a wide gap in the level and pay of women and men in their professional lives.

A tremendous deficit of role models in our daily lives worsens this situation, making it difficult at best for girls and young women to see a way out of this trap. This project will address the need for role models by offering an "examples" sampler of women professionals in a wide range of non-traditional careers. The project is composed of two parts: a CD-ROM and a supporting Web site.

The CD-ROM

The CD will be arranged to promote easy access to a database of basic information introducing 100–200 careers, viewed in the form of a short (1–3 minute) video of the woman professional answering four questions:

1. What's your first name?
2. What's your job title, and a brief description of your job?
3. What special training or education did you need to get it?
4. Any comments, likes/dislikes about your job?

Additional information about the career will also be provided in appropriate multimedia formats, including examples of the speaker's work.

The Web Site

The Web site will supplement the CD by offering additional information on the featured careers, including links to schools offering training in these areas, alternative programs, mentoring, and other means of access to these professions. Additional funding will support other creative uses of electronic communication.

The Process

The material for this project will be accumulated over three months of field work. We will be scheduling brief interviews with nearly 200 women across the nation. At the interview, we will record the short video and obtain any relevant supplementary material. Our material will be downloaded weekly (more often if we can—net traffic can be so finicky!) via the Internet to a holding site (for the CD) and to the Web site.

The CD will be assembled during and following the research, and will be available for distribution within 45 days after the conclusion of the research. Distribution of the CD will be accomplished in several ways. Many sponsors/donors to the project may specify a particular school or library as recipients of the CD, based on the level of donation. The CD will be made available to libraries, schools and parents at a low cost at their request (phone, fax, mail, or via email or the Web). Other methods of distribution are being investigated. Your suggestions are welcome.

Why and Who Will Do This Project?

Many of us have been asked about our futures when we were too young and uninformed about our choices. This project will help solve that problem.

The Internet offers unprecedented opportunity to network with women in non-traditional fields. The Web supports this type of communication as well. This is an interesting and unique way to introduce alternative career choices to young women, and to share interest and resources among women professionals.

The research and compilations will be conducted by Judi Clark and Reema Tarzi, with fundraising and promotional assistance by Audrie Krause.

Ms. Clark is currently self-employed as a Graphics Communication and Information Services Consultant. During recent years, she has been Treasurer and member of the Board of Directors for Computer Professionals for Social Responsibility (CPSR), and since 1991 has been active as an organizer, coordinator, and Steering Committee member for the annual Conference on Computers, Freedom and Privacy (CFP). Ms. Clark is also involved with social-action groups, co-founding BAWiT (a group of women dedicated to sharing information to assist in formulating policies concerning access to information, network privacy, and usage), and organizer of a free monthly special interest group on Freedom, Privacy, and Technology. Currently, she sponsors an eclectic collection of award-winning sites on the World-Wide Web, including Global Show-n-Tell, fea-

turing children's artwork, and Free Tibet, an information site about the social, political, and living conditions in Tibet.

Ms. Tarzi is currently employed as a Graphics and Multimedia specialist. She obtained her BSc (Biology) and MSc (Knowledge-Based Systems) from the University of Sussex in the United Kingdom, and has worked on multimedia projects for several Internet Service Providers. Projects she has worked on include a Web site for the Family Violence Prevention Fund, and she was Project Coordinator for the Beijing Women's Conference Web pages at WomensNet.

Neither women have female children at this time, but both were asked what they wanted to be when they grew up.

Audrie Krause is the founder of NetAction, a newly-established non-profit organization dedicated to educating the public, policy makers, and the media about technology-based social and political issues, and promoting effective grassroots citizen action campaigns on these issues by providing training to online activists in organizing skills and linking online activists with community-based organizations. Ms. Krause previously served as Executive Director of Computer Professionals for Social Responsibility (CPSR), and as Executive Director of TURN, a statewide utility consumer watchdog group. At CPSR, she facilitated the group's participation as a plaintiff in ACLU v. Reno, which challenged the constitutionality of the Communications Decency Act provisions of the Telecommunications Reform Act of 1996, and helped to establish Community Memory, a highly successful and popular discussion list on the history of cyberspace. During her tenure at TURN, she shined the media spotlight on violations of California open meetings law by the state Public Utilities Commission and advocated successfully against rate increases to fund utility efforts to promote electric cars.

Sponsorship: How You Can Help

We are currently seeking funding for this grassroots project. Most immediately, we are seeking Personal and Corporate donors which will help us demonstrate the viability of our plan. Hotel, rental car, and airline sponsorship (in-kind donation) is also welcome! If you have any ideas, please contact Judi Clark. A projected budget will be available soon.

Contact Info

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(temporary —this may change.)

Language

Introduction to Language Project

by Megan Lynch, Language Coordinator/Editor

This is the second installment of the BMUG Language Project. Let me introduce our history and our future. I have studied five languages in my lifetime. I always wanted to be bilingual, multilingual if possible. To this day, I am not yet fluent in any of these second languages. Since graduating from college, I have not had the time nor money to seriously pursue language study. Software programs for language learning are therefore very appealing to me because they allow so much flexibility and are relatively inexpensive.

The main problem I encountered in the search for software programs was the dearth of programs for intermediate students of language as well as the industry focus on Romance languages. At the time that I conceived of this project I was working in Macintosh retail. Because of all the negative press about Apple's problems, I found myself having to combat a number of myths about the platform. One of the reasons I took on this project was to show that there are more applications for the Macintosh than people think.

The goals that I have set were to give more in-depth reviews, to make sure that the reviewer was as close in level to the target audience as possible and to review as many different products out in the market for as many different languages as possible.

I broadcasted a call for reviewers first on the Planet, then on the Evangelist and other Internet resources. I then began combing the Macintosh Product Registry and other sources for developers of language-learning and language support software. I didn't realize how overweening my ambition was until about one and a half months before the deadline in the last BMUG Newsletter issue. What was slowing me down was finding the right reviewer to go with the right package. We would like to continue the project until we have made a good survey of what is out there, but we are having trouble involving responsible reviewers who will come through on deadline. I also had trouble obtaining participation from some developers. Consequently, this second installment of reviews is still not quite as I envisioned. Rest assured that we will continue this project until we have reviewed everything we can get our hands on.

I would like to thank all of the developers who are participating and all of the reviewers and prospective reviewers for their patience with me.

If you're interested in languages and would like to help, email spidra@sirius.com or megan_lynch@bmug.org.

All reviewers have rated their proficiency in the target language prior to using the software. On a scale of 1-5 tongues, 1 tongue is rank beginner level and 5 tongues is native or near-native.

LANGUAGE TABLE OF CONTENTS

Hablemos Inglés

Let's Speak English

by William D. Thompson, Ph.D.

Hablemos Inglés is a complete language package for learning English with an attractively designed interface (Figure 1). It's laid out so well and so completely that, within the limitations of the chosen study plan, you might even say it's exhaustive—not to mention exhausting. There's a lot of stuff to wade through here. But if the student sticks with this package (and that's a big if, as with most self-study programs, especially languages) they should be ready to at least start learning English! Start, you say? Well, sure—start. Listen, nobody ever said learning a second language was easy. As a matter of fact, learning a second language, especially if you're an adult, is probably one of the most difficult and frustrating learning tasks any of us will ever set for ourselves.

Having praised Hablemos Inglés so highly—complete, exhaustive, attractive, even fun I might add—hopefully it will be evident that subsequent criticisms of the package stem strictly from personal preferences to see things done somewhat differently. (Are you listening, Hyperglot? Let's hope so.)

For starters on the criticism, why do so many learning packages assume that only travelers are interested in learning another language? That's the assumption here—we start our lessons with goodies dealing with Immigration and Customs. In the case of native Spanish-speakers learning English, might not a native Spanish-speaking person already living in the U.S. be interested in learning English as well? (And how many of them do you think would want to relive the Immigration and Customs process, eh?)

Figure 1

A Quick Word About This Review

Rather than simply taking a personal look at Hablemos Inglés, the approach chosen for this review was to select several native Spanish-speaking people to sit down and start using the program with a minimum of help in getting started and in navigating through the program. All the "students" are young adult Mexicans with a high school level education who had expressed interest in pursuing their study of English. All of them would be considered intermediate students of English and none are particularly computer literate. And not one of them is likely to be a world-traveler any time soon.

After a rather cursory explanation of the use of the mouse, your reviewer retired to the other side of the room to observe and take notes, only occasionally intervening to offer help when it appeared absolutely necessary to prevent complete destruction of his beloved Mac.

Getting Started

Hablemos Inglés is a package consisting of two CD–ROMs, a user's guide, and comes complete with a 400+ page text and workbook. That's right, 400+ pages—exhaustive. Getting the program started requires an Installer with its typical installation dialogue.

The Installer then installs another Installer (along with some other goodies) on your hard disk, gulping up some 14.4 megs of disk space. And we've only just begun! The Installer installed by the Installer on the hard disk is an Installer for "personalized installation", meaning

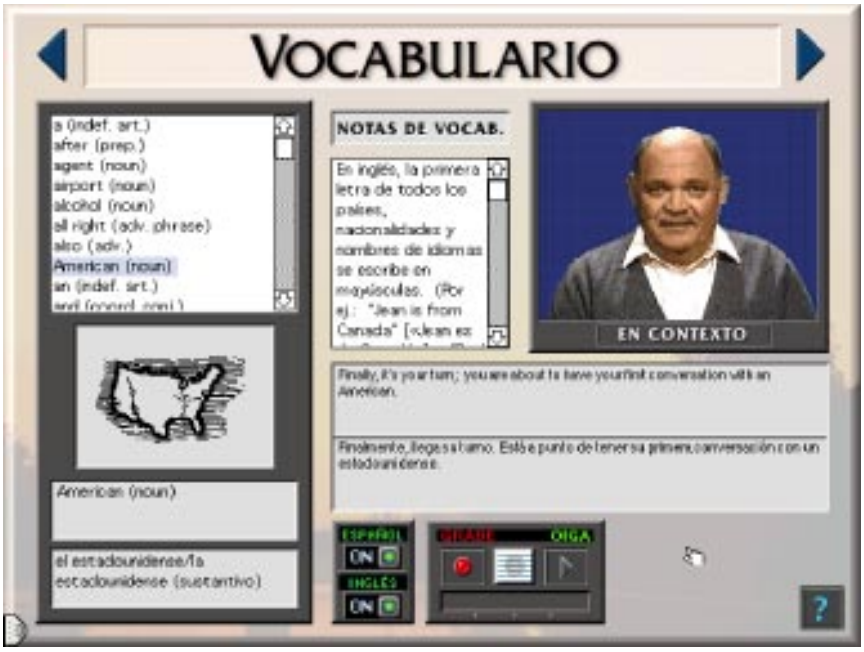


Figure 2

you can now select which lessons and auxiliary goodies you'd like installed. Some hard selection, not to mention a good-sized hard disk with plenty of empty space, is needed here—the first 15 lessons alone (there are 30 altogether) swallow another 56.8 MB of disk space. And you still need the CD–ROM to run them. (Without a doubt, Hyperglot must have called in a consulting team from Microsoft to help them design this installation!)

Confused by all this Installers installing Installers gobbledygook? Me, too, and needless to say, installation did not proceed smoothly. (On top of that, the program was installed under the critical eyes of the first test student. Embarrassing!) After several false starts, finally it was up and running, but only by adhering strictly to a personal Primary Rule for Foolin' with Computer Stuff (Rule #1 for Foolin' with Computer Stuff: When all else fails, read the instructions.)

The Hablemos Inglés Interface—As Mac as Mac Itself (Almost)

After an introductory window outlining what's to be presented in each lesson, the first real window of each lesson is a Vocabulary window which presents the words to be used. And within that Vocabulary window there are no less than ten—count 'em, 10!—sub windows (Figure 2).

The student is given simple instructions orally—thank goodness—as to where to start and what to do. All else failing (there's that Rule again!), clicking on the question mark at the bottom of the window triggers a sort of Balloon Help that is more Balloon Help than even Balloon Help itself—all the windows and what they're supposed to contain are identified.

Later, the student is treated to an introductory drag 'n' drop lesson. Some of the exercises offer a kind of fill-in-the-space exercise in which the correct word is to be dragged and dropped into the appropriate space (Figure 3).

QuickTime movies are used liberally throughout the lessons; dialogues are accompanied by QT movies of the speaker—useful for learning to read lips as well. And Cultural Movies are sprinkled throughout, covering themes about American cities our intrepid traveler is visiting and about American culture.

About the only Mac thing missing is a menu bar. Even at that, a sort of menu bar can be brought up by clicking in the title bar of the lesson. A single click here brings up a button bar for navigation to the different exercises, games, etc., something of an Hablemos Inglés answer to Launcher Items. Why, shoot, there's even a button that lets you quit the program! (Took a few sessions to figure this one out—Rule #1 again.)

The Lesson Plan—And How It's *Supposed* to Work

The words to be used in each lesson are first presented in the Vocabulary window; clicking on a word in the list gives the student 1) the spoken word in English, 2) its definition in Spanish—which is also given orally, plus 3) a graphic representation of the word—good use of both visual and aural reinforcement. In addition, there's also another window with notes on some words about the grammatical use and even some cultural notes on the use of the word (Figure 2).

Figure 3

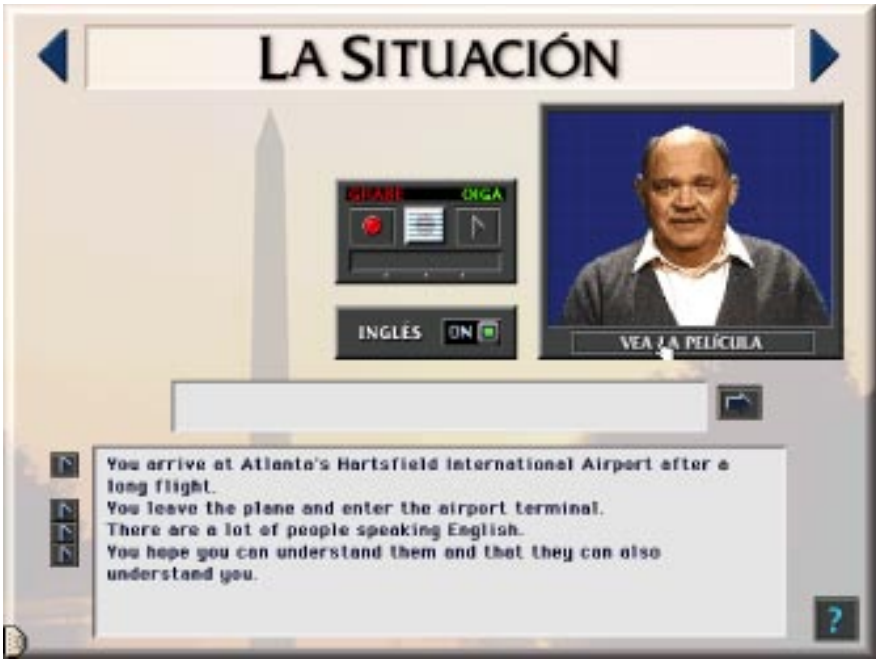


Figure 4

... a private tutor quickly tires of repeating the same word or phrase time and time again, while your loving Mac will just repeat and repeat and repeat and . . .

Each word is also presented in context. From the beginning, relatively complex sentences are used in the context window. And these sentences are spoken at a normal conversational pace—not droned slowly and carefully as so many teachers are wont to do. This can be a little overwhelming to the student at first—complex sentences spoken at a fairly brisk pace. But a written translation is available immediately below so what sounds daunting at first turns out not to be. Well, maybe not quite so daunting.

The packaging of Hablemos Inglés touts the program as being for beginners and intermediates. However, the very first complete sentence spoken in the program—one intended to illustrate the use of the word "a" in context—is: "You arrive at Atlanta's Hartsfield International Airport after a long flight." Huh? Where's the "a" in that sentence? Golly gee, it's darned near hidden, way down there close to the end of that relatively long sentence.

... why do so many learning packages assume that only travelers are interested in learning another language?

And this package is supposed to be for beginners? Even the intermediate students who used the program looked a bit bewildered hearing the sentence for the first time and had to read the translation a couple of times to get the hang of it. The program has yet to be tried on a beginner for this reason—a natural bit of reluctance to spring that one as the very first thing out of the box on a raw, rank beginner!

After listening to the word a time or two—or more—students can record their own pronunciation of the word and compare it to that of the "teacher." Clicking the record button gives, first, a repeat of the word by the teacher, then time for the student to record the word. There's an auto playback with the teacher's pronunciation of the word again, then the student's own pronunciation.

This recording allows students to hear their own pronunciation of each word and compare it to that of the teacher, a technique which begins to build in the student's own feedback filter for self–correction, not only of pronunciation but, later, of content and grammatical correctness.

A good idea, but the danger, of course, is that students can't necessarily *hear* their own mistakes, and may just keep repeating them, reinforcing bad habits. English is notoriously difficult for native Spanish-speakers to learn, in large part because the English sound system is so notoriously difficult for them. We native English-speaking people may not think of it as such, but consider the different sounds of just the letter "a" in some of the words given in the first vocabulary lesson of Hablemos Inglés: *a, all, at, any, declare, card, conversation*. Each of those words contains a distinct sound of the letter "a" and, while we may not consider them so, the differences in those sounds can be devilishly subtle to someone not already familiar with them.

By comparison, the Spanish sound system is extremely simple: the letter "a" sounds like our broad "a" (as in "ah") and—here comes the important point—it always sounds like "ah". The same holds true for the other vowels: they always have the same sound so that the entire sound system for the vowels in Spanish consists of fewer sounds (five) than the total for just the sounds of the letter "a" in English. You think that wouldn't be a bit tough to get the hang of? Especially when there are

no hard rules to help you decipher it all? (Can anyone really explain, when we pronounce the brand name of Nike athletic shoes the way we do, why we don't pronounce the word "bike" similarly?)

An even more critical—if that's possible—problem in pronunciation is that of pronouncing final consonants, such as the "t" in fight or the "k" in fork. One only has to hear a Spanish-speaking singer belt out a popular song like "New Yor, New Yor" (sic) in English to realize the futility of teaching this concept. They don't pronounce that "k" in New York because they just can't even hear it! Spanish just doesn't have words like that—the majority of Spanish words end in vowels. Heck, the letter "k" is not even a letter in Spanish! It's used, sure, but only in words of foreign origin, usually the Greek—such as "kilograma" and if you can come up with one that ends in "k", please let me hear from you.

Short of a private tutor, the approach taken by Hablemos Inglés to helping a student with pronunciation—it also comes with a separate little program, Guide to English Pronunciation—is probably about as good as it gets at the moment, at least until we have true speech recognition and the computer can scold you like an irascible teacher for bad pronunciation. But, on the other hand, a private tutor quickly tires of repeating the same word or phrase time and time again, while your loving Mac will just repeat and repeat and repeat and . . .

[S]entences are spoken at a normal conversational pace—not droned slowly and carefully as so many teachers are wont to do.

After an exhaustive test on the vocabulary—more on that later—the words are then used in two subsequent sections: The Situation (Figure 4) and The Action. A narrator—an Archie Bunker–looking character—sets up The Situation ("You arrive at Atlanta's Hartsfield International Airport..."—there's that sentence again!) that the student is about to encounter. The student then walks through The Action which features dialogues with several actors in QT movies, giving the student an opportunity to see and hear a variety of faces and voices.

Exercises and Games (Figure 5) follow this, each reinforcing the original vocabulary and dialogues. In all, there are 13 different sections to each lesson.

So What's *Wrong* With The Lesson Plan?

With Hablemos Inglés, Hyperglot has obviously done a number of things right. So what's wrong with it? In a word, not much. (I know, that's actually two words, but suffer me a little poetic license, please.)

But, given the opportunity, we can always find some things we'd like to see done a bit differently, no? Yes. (Picky, picky, picky.)

For one thing, students always like to feel they're making some progress—and quickly. It just takes too long to get into the real meat of each of these lessons—dialogues, talking with the people in this program (albeit only with QuickTime proxies of real people). So far, the students involved in this review have taken at least two or three one-hour "lessons" just to get through the vocabulary section and another hour and more to take the vocabulary test. True, not one of them has complained yet, but the question is, how long will they keep this up without losing interest? By the time they get to the heart of things, it comes almost as anticlimax.

So what could Hyperglot have done differently to circumvent this potential problem (and it has to be admitted that this may be just a matter of preference, although it's based on teaching experience)? For one thing, the lessons could be broken up into smaller units. Instead of 122 words in the first vocabulary section—that's right, there are 122 words in the first vocabulary test, a real mouthful/brainful—wouldn't it be more comfortable for the student to have, say, one–third that number to deal with at first? Then they could get on with it, start using what they've learned in the vocabulary and pronunciation help, and feel as though they're having real, honest-to-goodness, live conversations with what they've learned and practiced. Progress,

Figure 5

Where's all the talk about parties and going to the movies and meeting someone later for pizza and window shopping and how do you feel about Saddam Hussein, the things that all of us really want to talk to people of another culture about?

in small bites rather than huge gulps, is one of the first principles of teaching ESL (English as a Second Language).

Just How Good Is Hablemos Inglés?

It's good, and you can feel comfortable recommending it to those Spanish-speaking persons who want to improve their English, especially in the realm of pronunciation. But the question is really best answered by responding to a hypothetical question you might ask personally of me: "Would you use this program at your school to help your students learn English?" And the answer to that question is simple and straightforward—maybe.

Our school has an exchange program with a sister school in the States and we'll be sending twenty students there later this year to spend a month or two. For those students, this program would certainly be helpful in dealing with their one day of travel to the States. But what about the other six to eight weeks they'll be spending there? It's doubtful that they'll learn from this package what they really want to learn—how to communicate effectively with the American students they'll spend their time with. Where's all the talk about parties and going to the movies and meeting someone later for pizza and window shopping and how do you feel about Saddam Hussein, the things that all of us really want to talk to people of another culture about? Once again, that old bugaboo of slanting the whole thing toward travelers rears its ugly head.

And that leads us straight to another question, namely:

Is It Worth 109 Bucks?

The answer to this question is also simple and straightforward—probably. It's certainly cheaper than paying a private teacher. And it has another great advantage—it's always available and willing to teach you what it knows. Suffer from insomnia and can't get to sleep at three o'clock in the morning? Hey! Let's study English. Try that one on your private teacher.

A Dual–Platform Package And Its System Requirements

Hablemos Inglés requires your Mac to have a 68030 processor running at 25 MHz or better which means an LCIII, Performa 450 or something later than that. It also requires at least 4 megs of RAM—for this review it's run comfortably in 5 megs of RAM, using RAMDoubler. It also requires a 2X CD–ROM drive and at least a 13" monitor. And, to take advantage of the recording possibilities mentioned in this review, you'll also need, of course, a microphone. It runs under System 7 and, naturally, you'll need a hard drive—preferably, one with a nice chunk of available space.

Hablemos Inglés is a dual–platform program, meaning it'll also run on Wintel machines—although why anyone would want to do that is beyond me. An interesting sidelight on this point is brought out in the User's Guide: there are some six pages devoted to helping solve problems in running the program on Wintel boxes. By comparison, there's barely a page-and-a-half of problem areas with Macintosh. Doesn't that tell you something nice about your personal choice of computer platform?

More To Come

Still to be answered in reviewing this package are some important questions: Will students stick with this self-learning program? Will they really learn to speak English by using it? Or will they get discouraged and drift off to other things as they have all done before?

A few weeks of reviewing this program is much too short a period to answer these questions. Hopefully, these questions will be answered by continuing this study and we'll be able to report favorable results in a later follow–up review.

Hablemos Inglés 6.01, with Guide to English Pronunciation
Minimum System Requirements
Computer: LCIII, Performa 450, or later, 13" monitor, System 7, 2X CD–ROM drive , and microphone (to take advantage of recording possibilities); also runs on Wintel
Memory: at least 4 megs RAM
Hard Disk space: at least 16.4 megs

HyperGlot
PO Box 10746
Knoxville, TN 37939–0746
Phone (800) 800–8270
http://www.hyperglot.com/hyperglot.html
$109

Hyperglot is a subsidiary of The Learning Company and their products are extremely well–distributed. You should be able to find this product through mail order or your local computer store.

William D. Thompson, Ph.D., is Coordinator of Language and Communication at Preparatoria El Pipila, San Miguel de Allende, Guanajuato, Mexico. He teaches Computer Science and a few English classes. He is a consultant on Macs with a local ISP as well as a consultant and web page designer with Mexico Connect, a Web site devoted to info about Mexico. (http://www.mexconnect.com/MEX/mxc/tour.index.html)

Bienvenue au monde de la francophonie!

Welcome to the French-Speaking World!

by Emeline Mann Sanchez

Il avait, dans les débats épineux, une manière bien à lui de sautiller d'un côté et de l'autre, de battre l'air de sa queue, qui s'avérait en fait très convaincante.

He was a brilliant talker, and when he was arguing some difficult point he had a way of skipping from side to side and whisking his tail which was somehow very persuasive.

—George Orwell
La ferme des animaux

I had a mission. It wasn't impossible. Or so I thought. I needed to learn French quickly. I was planning a vacation to Paris, and since everybody advised against going the travel package route, I was going to need to get along with the *parisienne* natives without the buffer of a tour guide. So the least I could do was learn the language (I didn't buy into the thinking of "Let them speak English," although I'm not above using the old "Parlez-vous anglais?" line).

Given the premise, I was obviously not going to learn the language in the academic sense. I had one month, and I needed to learn enough to get by but not offend anyone in the process. For the sake of expediency, I was willing to forego grammar, and allow myself an American accent in my French.

Out of the BMUG arsenal for the Language Review section, I picked Hyperglot's Learn to Speak French, Version 4.0, the Beginner/Intermediate Level interactive CD-ROM with workbook. It seemed the most comprehensive of the lot. The other language learning applications are worth looking into as well. When I was just poking around in other CD-ROMs, by way of trial and error I discovered that "*sortie*" meant to "exit" or in computerese, to "quit"; I thus, inadvertently learned what directional signage to look for when I get off the subway train at *le métro*.

Hyperglot's little marketing blurbs on the packaging were also persuasive, claiming I would be "speaking and understanding everyday French words and phrases in no time. " Just how much time is "no time" anyways? Those marketing people…

The other appeal of Hyperglot's software was its capability to record my voice (you need some sort of microphone device hooked up to your computer). Anybody who has been horrified at hearing their voice when recording their telephone answering machine greeting will understand the value of being able to hear what you sound like before assaulting foreign ears, or any ears for that matter.

Learn to Speak French works for both Mac and Windows. After scanning the section on how to install for Windows (something to do with typing "d:\setup", the need to know the directory path you want to store the application in, etc.), I was glad I only had to sift through two pages of the Mac install process as opposed to the four pages for Windows. For the Mac, installation is a simple matter of double-clicking the Install icon, hitting the Install button, restarting the computer, and *voilà* —you are on your way to learning French.

The CD-ROM

Upon double-clicking the French 4.5 icon (the icon and Get Info box say version 4.5, but the packaging box and the QuickTime video intro say version 4.0) you are greeted with a ghosted image of the *Arc de Triomphe* that looks like it was put through a painterly Matisse-esque Photoshop filter. Presently some French tune (original composition featuring the accordion, what else?) can be heard as a map of Paris emerges and you're treated to a short (approximately 3 minutes) video tour of scenic spots in Paris—*Musée du Louvre*, *Notre-Dame de Paris*, *Tour Eiffel*, and so on (Figure 1). Clicking anywhere on the window will get you out of the video and onto the Orientation window containing a table of contents which is where you would have ended up at the end of the video clip in any case. Once you get this far, there's no way to go back to the introductory video unless you quit and relaunch the program.

The Orientation window shows the chapters of Learn to Speak French. Three buttons at the bottom allow you to fiddle with the Preferences, look up Grammar topics as presented in the various chapters, or Quit out of the program (the keyboard equivalent, command-Q, works as well).

Each chapter provides a backdrop for practical situations in France, whether you're "Looking For A Taxi," "At The

Restaurant," "Mailing Things," or have "A Run-in With The Law." Clicking on any chapter (thirty chapters in all) brings you to the chapter's first page allowing you to either play that chapter's QuickTime movie—a non-essential movie clip that visually sets the mood of the chapter such as images of produce for the Shopping for Groceries chapter, proceed linearly to the different parts of the chapter via the right or left pointing arrows, or click in the chapter heading title bar to bring up the Navigation Panel of buttons to click into the exact section of the chapter you want to go to.

If proceeding in a linear fashion through the chapter (which is recommended), you go first to the Vocabulary section. The Navigation Panel is best used for reviewing purposes.

Vocabulary

Clicking on a vocabulary listing prompts an audio of the French word and its English definition spoken by native French and English speakers, respectively. *(Editor's note: for the sake of simplicity, both words and phrases in the "vocabulary listing" will be referred to in the rest of this article as "vocabulary word.")* Each vocabulary word is accompanied by a picture to reinforce the word's meaning. The French word and its English definition appear underneath the graphic. For example the word "*à*" means "to, at, in," as in "*Vous arrivez* à *Paris pour un voyage d'affaires*," or, "You arrive *in* Paris for a business trip." The corresponding picture shows an arrow pointing to an "x." While the picture might associate the word to its meaning, as in the sample above, or as in the word "*américaine* " accompanied by a picture of an elderly lady in glasses and a pie (apple, no doubt), the graphics don't aid in the pronunciation of the word. You may remember that *les cacahuètes* are peanuts, but will you remember how to say it in French when you come face to face with a hungry *éléphant* in *le Parc Zoologique de Paris*?

Nonetheless, it's not a bad thing to know what a word means even if you can't pronounce it. When the tongue trips, written communication is the next best step—*écrivez-le, s'il vous plait* (write that, please).

Occasionally, connecting a word to its picture in Learn to Speak French, is like donning 3-D glasses to listen to Edith Piaf's greatest hits—it just doesn't make sense. For instance "c'est à vous?" means "is it yours?" Its picture shows what looks like a magazine or book, with a big question mark on top. *Excusez-moi,* but that's just a bit too *ésotérique* for me (Figure 2).

With each vocabulary word, you can click on the Record button to first, hear the word spoken in French, then record yourself saying that word. Playback is automatic, but you can manually play your recording again and again, as well as record yourself as many times as you like. If you don't want to sound like a *bouffon*, this recording feature can be your best friend.

You can also hear the word spoken in context. Clicking the Hear in Context button runs a QuickTime movie of an actor saying his/her lines of the dialogue. This is useful as the vocabulary word in question may very well carry different intonations when sandwiched between other words. The text of the dialogue—French and its English translation—appears underneath the actor. The dialogue in the Hear in Context consists of words that are a part of the current chapter's vocabulary as well as words learned in previous chapters. Going down the vocabulary list, you may hear the same sentences again, but for a different word. This promotes a better grasp of how the words make up the different parts of the sentences.

The Vocabulary window also contains Vocabulary Notes. For instance *le weekend* is discussed as a word borrowed directly from English, as are other anglicisms including *le pique-nique*, or *le pull-over*. So you anglophiles out there already know a bit of français. By the same token, you can imagine that the French are not surprised that they already know some English—or didn't you figure chef, entrepreneur, and sonnet were French derivatives?

Vocabulary Drill

When you've finished with Vocabulary, you can proceed to the next section, Vocabulary Drill, and drill yourself, either by hearing the English definition and record yourself saying the French word that matches the definition, or hearing the French word and record yourself saying its English definition. Keeping a tally of your answers you go by the "honor system" method, clicking the appropriate buttons, Correct or Incorrect. At the end of the drill, if there are any incorrect answers, you can elect to be redrilled on these words again, or click Done and do the whole drill again or skip to the next

Figure 1

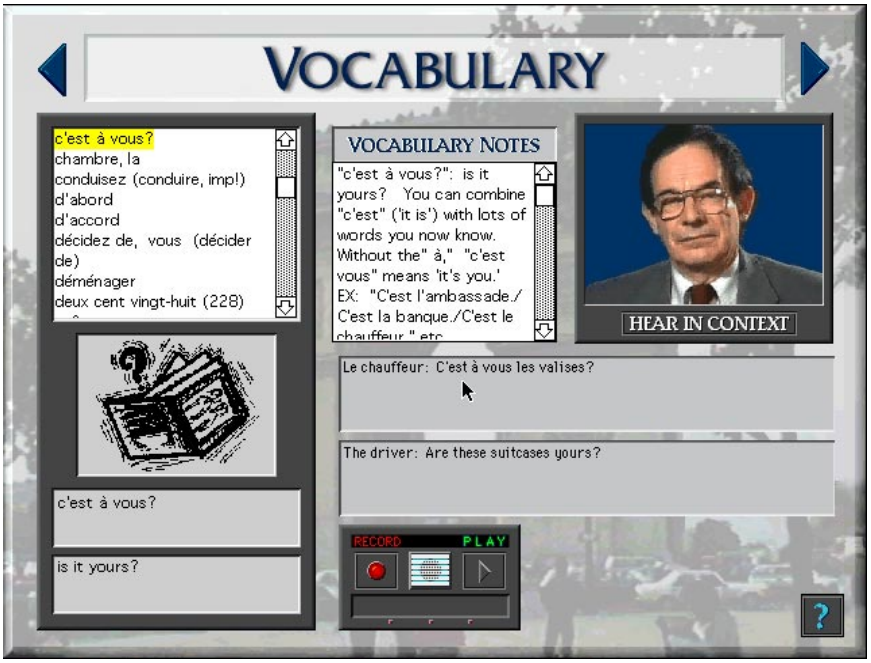


Figure 2

section. Correct answers are greeted by "trés bien," (very good). Incorrect answers get a "désolé" (sorry).

The Story Thus Far…

In this section, you review the chapter's intro narration played either in its entirety, or broken down sentence by sentence as spoken by the narrator. Here, you can record yourself saying whole sentences, as opposed to recording just the *words* in the Vocabulary section. Click on the Play Entire Movie button to hear and watch the actor say her entire intro. The fact that you have the option to listen while reading the text, or listen while watching the actor's face, or listen with your eyes closed, allows you the opportunity to use this CD-ROM in whatever way best suits you—perhaps all the ways I've mentioned or ways you'll discover on your own. Once done with the narration, you can go to the actual story.

The Action

The actual story, or, The Action, is structured like The Story Thus Far… . Here again, you can Play Entire Movie to hear the whole dialogue between the different characters in the scene (e.g. in one chapter, you interact with *le chauffeur* of the taxi, and *le réceptionniste* at the hotel) uninterrupted and in sequence. Even better than the previous section, you can now hear French as spoken with different voices in different inflections, intonations, and speeds.

Cultural Notes can also be found in this section. Trivia such as *la salle de bain*, listed in the vocabulary section as meaning "bathroom," is further discussed here as literally meaning a "room for a bath." It goes on further to say that toilets usually reside in their own separate room. Let's suppose you're having dinner at a *parisienne's* home. You should not ask your host *"où est la salle de bain?"* (Where is the bathroom?); instead, ask *"où est la toilette?"* (Where is the toilet?) Otherwise, you give your host the impression that you want to take a bath in his/her home.

Practice What You Learn

The ten remaining sections of the chapter are different exercises testing what you've learned. Fill in the Blanks exercises tests listening skills, your understanding of definite articles, verbs, and such. In Drag and Drop, match the correct indefinite adjective to its corresponding noun. Unjumble is a mish mash of words you reassemble to form coherent sentences. Type out a variety of responses to questions in Communications Skills.

The Workbook

It is recommended that you go through the CD-ROM first, and then the workbook. This makes sense because French phonetics is distinctly different from English phonetics. For instance, English speakers are used to the "oi" vowel combination in words such as "choice" or "hoity-toity." They may even see the more exotic word, "poi," and pronounce the Hawaiian dietary staple (a tarot root paste) correctly. But in French, "oi" is pronounced like the "wa" in water for the word *pourquoi* (why). Who would have thought?

The French language is full of these linguistic surprises. Take another example. The "e" in comment in typical English enunciation rhymes with ferment (a process Chateau Margaux uses to make its thousand dollar magnums of *bordeaux*). This very same "e" but for the French word, *comment* (how) is pronounced like a long "o" as in mole (the "t" is silent and the "n" is barely heard, so the word actually sounds like ko-mahng).

Just when the novice French learner resigns him/herself to expect the unexpected in French enunciation, then comes the next element of surprise, the French conversation. A typical icebreaker, *comment allez-vous* (how are you) is actually pronounced ko-mahng tah-leh voo. What should be noticed here is that the "t" of *comment* attached itself to the beginning of *allez*. It turns out that for words that go together (noun and article or adjective, or subject with verbs), the consonant of the preceding word will attach itself to its succeeding word if that word begins with a vowel. This means that a final consonant, normally silent, may be heard when linked with a word. For instance *petit* (small) is pronounced peh-tee. The last "t" is silent. *Éléphant* (elephant) is pronounced eh-leh-fa, but put the two together: *petit éléphant* (small elephant) and you get peh-tee teh-leh-fa. The "t" from the last "t" of *petit* snapped onto the front of *éléphant*. So it does help to hear the spoken French on the CD-ROM before studying the workbook.

On one level, the workbook acts as a review of the CD-ROM, containing the Vocabulary List, Vocabulary Notes, Story Narration, Action Dialogue, Grammar, and Exercises. On another level, seeing the words without the distraction of QuickTime movies or the audio, focuses your attention on written French. Getting used to reading French, with the understanding of how French words are pro-

nounced, can be useful when you're putzing around in France armed with a French dictionary and not much else.

Appendices include exercise answers, a grammar index, and conversion measurement tables.

Learning a Language

Pierre Capretz, Director of the Language Laboratory at Yale University, developed the French in Action series for Public Television showcasing his "immersion" method which veers away from learning through the usual rote memorization and drills. His 52-part series shows typical interactions between *parisiennes*, clips of French films, television, advertising, and cartoons, all of which are in French. Except for the introductory video cassette, no English is spoken nor are there any English subtitles.

This sink or swim method is one way to learn a new language. Similarly, moving abroad into unfamiliar linguistic territory can prove to be instructive by learning through active participation and some degree of osmosis. Then there's always the classroom route—many educational institutions, private and public, offer language courses or bilingual education. Private tutors are always happy to take on students. Even the Web is starting to become a medium for learning languages. Check out the French in Action Online Course Information at http://www.learner.org/content/hv/fionline/ficourse.html. The old standby, language audio cassette tapes, have worked for many.

Money-wise, audio cassettes are cheapest if you just want to learn the basics (where's the bathroom?, how much?, etc.), but the comprehensive year-long audio cassettes and workbook program bundles start to put a dent in your pocketbook. I found Living Language's Fast & Easy French (one audio cassette) to be very helpful in learning traveling necessities, while the four cassettes of the Pimsleur 30-minute language learning sessions for beginners, helped with basic French. These audio cassettes in combination with Learn To Speak French were quite complementary, each aiding in the understanding of the others.

Learning French Wish List

Sans Computer

It would speak well of the program's developers to consider the language learning process as an all encompassing process. They did well to include the workbook as an added learning resource for those times not spent on the computer. In addition, it would have been nice to have a key to pronunciation in the workbook when the pronunciation of words was forgotten and a computer was not available nor the preferred mode of learning for the moment. Also, an audio cassette of the vocabulary, story, and action would be an effective review when commuting or enjoying a walk in *le parc*. Viewing a video tape of the action as alluded to on the CD-ROM and workbook could prove to be useful—something entirely in French for review purposes.

Avec Computer

Instead of traditional exercises, interactive games like Jersey Cow Software Company's "Who is Oscar Lake" (a CD-ROM game where you learn French while solving a mystery) serve to hold a high level of interest as games usually do. It wouldn't hurt for Hyperglot to add such game elements to its Learn to Speak language series of programs.

A press release touting Learn to Speak French version 6.0 was received in October. If you hadn't noticed, we've jumped from 4.5 to 6.0. The sales person at Hyperglot says the reason for the big jump is because Learn to Speak French finally caught up in development to Hyperglot's Spanish and German language learning softwares, already in their 6.0 incarnations.

One improvement is actual speech recognition, which is unfortunately only available to their Windows customers (crossing over to the Macintosh platform sometime in spring '97).They've added games to their *répertoire*, including Go Fish, Crossword Puzzle, Matter of Fact, Picture Puzzle, etc. No whodunits, but still, nifty additions it would seem—although I don't have this new version to try out. In fact, you cannot buy the version I've reviewed from the Hyperglot people; they only sell their latest version for $109. (Version 6.0 requires at least 16.4 megs hard disk space as compared to the 2.6 megs for version 4.5.) You can still buy 4.5 from various stores or mail order companies (MacWarehouse sells version 4.5 for $99.95).

Finalement

Learn To Speak French CD-ROM and workbook seems a sensible buy if you're not looking for a crash course lesson and have the discipline to study on a regular basis. Add in the other learning tools such as audio cassettes, a class or tutor, plus liberal exposure to French videos and/or a trip to France and you have the makings of a highly successful campaign. Yes, I know *francs* don't grow on trees. *Mais j'y reviendrai tout à l'heure.*[1]

Learn to Speak French, Version 4.5, the Beginner/Intermediate Level interactive CD-ROM

Minimum System Requirements:
Computer: MacLCIII, Performa 450 or better, 68030/25 MHz or better. System 7.0 or higher
Memory: 4 megs
Hard drive: 2.6 megs
Monitor: 256 color display, at least 13"
Optional.: MacRecorder or microphone (needed for recording purposes)

HyperGlot Software Company
a wholly owned subsidiary of The Learning Company
314 Erin Drive
Knoxville, TN 37919
(800) 227-5609

The Learning Company
6493 Kaiser Drive
Fremont, CA 94555
v: (510) 792-2101
f: (510) 792-9628

[1]*But I will come to that dream later. —George Orwell, La ferme des animaux*

Français Level Ia

Rosetta Stone Language Library

by Chi Tran

The Rosetta Stone Language Library Français Level Ia comes in a CD-ROM with 92 lessons, a user's guide, and a language reference book. The CD is a Windows/Mac hybrid disc created with Macromedia Director. Installation requires copying a folder from a companion floppy to the hard disc. To use the Rosetta Stone program, insert the CD and double click on the Rosetta Stone icon.

Upon launching Rosetta Stone, the student is presented with a variety of lessons (called chapters). Each chapter has ten screens with four pictures each. The course is designed to be a self-contained completely immersing experience, employing such techniques as associating words with objects and ideas. It is suitable for total beginners, also appropriate to the level of high school or introductory college level work. Rosetta Stone contains thousands of color images, phrases spoken by native speakers, and concise text increasing in complexity as the lessons progress.

My sixth grade daughter was able to go through the first six chapters and learn some basic French words, grammar and language. Lessons delve into proper spelling, grammar, and syntax, including twelve "Run modes" which offer different challenges and test the following: listening comprehension, reading comprehension, simultaneous reading and listening, speaking, and finally, writing. Basically, the student is presented with some combination of French words or sentences in the form of voice, text, or picture. The student is expected to listen and learn initially. The program then tests the student on the material and keeps track of the student's score. Testing can be rather informal with just a tally of right and wrong answers, or it can be sophisticated enough to include time limits, even on case sensitive typed-in responses.

There is a workbook which presents the words, sentences, and study questions, including an extremely useful index of each French word encountered and the lessons/chapters where the student can review the meaning and context without resorting to a translation. Indeed, the only English text in the workbook is one paragraph describing how to use the index.

How friendly and useful is the Rosetta Stone? This is a complete and structured course that should not be confused with dreary images of the drudgery of high school drills. The beauty of this CD-ROM is its ability to provide instant feedback—you record and play back your own voice and compare it to a native speaker's. With practice and perseverance, the student can attain the proficiency level of a first year program in French as a foreign language.

Is this CD-ROM worth $395 ? Well, considering the fact that this is a full language course with 92 structured lessons, then the question should be: Is each lesson worth $4.30? My answer is yes, based on the assumption that the student is serious about learning the language. There are other CD-ROM based full language courses, such as the Berlitz Think & Talk ($199), and Learn to Speak ($99) from HyperGlot (at (800) 726-5087), but for some students the approach used in the Rosetta Stone parallels the total immersion courses high school or beginning colleges offer. In such a case, the cost of the $395 package is not unreasonable. The key factor is that it takes time, commitment, and practice to learn a foreign language. Failure to respect that is guaranteed to result in failure to learn any foreign language.

Chi Tran is with the University of the Pacific, SF campus

Rosetta Stone Language Library
Français Level Ia
Available for Macs and Pcs
Minimum System Requirements
Any 8-bit color capable Mac with a 68020 or higher processor or any PowerPC; hard drive; CD-ROM drive; 2 megs of RAM for System 6.0.X or 4 megs of RAM for System 7 Oh yes, and a microphone for recording.
Standard retail price: $395
Fairfield Language Technologies
122 South Main Street, Suite 400
Harrisonburg, VA 22801
(800) 788-0822
(540) 432-0953 fax
email: fairlangtk@aol.com

Claris Swiss German Language Pack

by Yuan-Yuan Sun

First a few words about Swiss German. The main differences between German and Swiss German are:

a) Swiss German has a lot of originally French words (like *Portemonnaie* and *Trottoir* versus the German *Geldbörse* and *Gehsteig*). It also keeps French spellings like *Decolleté* versus the German *Dekolleté.*

b) Swiss German uses German words that have fallen out of use in proper German or that come from local dialects.

c) Swiss German does not have that stupid German double *S* (ß), that looks a bit like the Greek Beta (β) and occurs in lots and lots of very common words.

Swiss German also uses different constructs and different expressions at times. But it would be unrealistic to expect from a spelling module or even a thesaurus to know about that. (By the way, Austrian German is also slightly different from German. But so far I haven't seen any Austrian German spelling modules.)

How I Tested

First I picked up a German dictionary and wrote down a big list of words that were designated as Swiss-only. I also picked the German words they stood for, if they weren't used in Swiss German. This was to check whether there was any difference between the German and the Swiss German spellcheckers, or whether the word was simply too obscure to find its way into the dictionary. Then I took a text I had once written and checked it with both the Swiss and the German settings to have something more like a"real life" test.

Unfortunately I haven't found a way to actually display the contents of the dictionary. The closest I came was using the thesaurus and its suggestions/definitions. So I couldn't truly compare them word-for-word and had to rely on circumstantial evidence like which words it accepted as correctly spelled and which words it complained about. Not a very exhaustive test, considering the thousands of words a language contains.

Claris International Language Pack: Switzerland

My first quibble with the Claris Language Pack starts with the installation. After putting the modules in the Claris folder inside the System Folder manually, you have to actually install them after you've opened ClarisWorks—by choosing Spelling from the Edit menu. (I used a German version of ClarisWorks. It may be named differently in the US.) Why? Couldn't Claris simply scan the System Folder, and check for dictionaries? Then, when it finds several dictionaries and no preference, and only then, it can prompt for your choice, e.g. when you select the spellchecking command.

Another thing, you have to select the spellchecker, the thesaurus, and the hyphenation module separately. Does that make sense? Why should you want to use the spelling of one language but the thesaurus of another? For the same text?

The manual claims that with MacWrite Pro you can use different dictionaries in different languages at the same time. It would be really nice if that was also possible with ClarisWorks. There are people, myself among them, who have to use several languages in one document.

The thesaurus is a funny thing. It finds Bundesrat and Nationalrat, something akin to ministry and parliament, but cannot find Ständerat, which makes up the third part in government.

How to Use It

Once you have installed the Language Pack, you can select one of two functions under the Edit menu—spellcheck the whole document or just the selection. It will give you a dialog box with the word it complains about, six suggestions if it has them to give, and the status. Quite straightforward.

Results

The German and the Swiss German dictionaries seem to have more or less the same vocabulary. The only real difference I could find was the double *S* that I mentioned in the introduction—which in itself is quite a relief, actually. As lots and lots of common words like *must*, *size*, *cup*, etc. have this double *S*, it would result in a huge custom dictionary.

The thesaurus is a funny thing. It finds *Bundesrat* and *Nationalrat,* something akin to *ministry* and *parliament*, but cannot find *Ständerat*, which makes up the third part in government. It contains *Blödling*, something like *idiot*, a word I have never seen in writing before (heard, yes), but misses words like *Birchermuesli* which is a Swiss invention and something of a national specialty breakfast dish.

Whoever picked the words that go into the thesaurus?

Word 6.0

Now, while I do not particularly wish to sing the praise of MS Word 6.0.1, there's a feature I do like immensely: You can assign a certain language to a text or a part thereof—also to just a single word. There are no language modules you have to drag/install anywhere.

If you already have the German spellchecker, don't bother with any of the Swiss German spelling modules, unless having to enter all the words with a double S into the custom dictionary bugs you.

How to Use It

After assigning the language the appropriate dictionary/thesaurus is automatically selected.

Results

The effect is quite similar to the Claris module: the infamous German double *S*. Apart from that I haven't noticed many differences.

General Conclusion

If you already have the German spellchecker, don't bother with any of the Swiss German spelling modules, unless having to enter all the words with a double *S* into the custom dictionary bugs you. Not having to do this is the only thing that makes them worthwhile. Apart from that there's really not much difference between the Swiss and the German versions.

If, on the other hand, you do not have the German spelling modules but need one, go for the Swiss one. It must be hell—especially on an US keyboard—having to enter all the ß, not to mention that lots of character sets will probably not have that character included at all.

Claris Swiss German Language Pack
Minimum System Requirements:
ClarisWorks 2.1 or later,
MacWrite Pro or MacWrite II

Suggested Retail Price: $49
Claris USA
Phone:(800) 544-8554
or (408) 727-8227

Yuan-Yuan Sun, close to being a student by profession, has spent the last 12 years in and around the Swiss Federal Institute of Technology. He's now a post-graduate (architecture) on the doctorate student level. But apart from that he's always had part time jobs. At the moment he's a support technician with an ISP. He's also a rabid Mac fan. He doesn't use the Mac in a very productive way but can spend hours tinkering around with the system and the organization of the hard disk.

German Passive Voice Tutor I and II

by Judith Bode

(Editor's Note—this product is no longer made by Hyperglot/The Learning Company. This review was provided for those of you who happen across the program remaindered or have access to a used copy.)

In the most perfect of all worlds, every software tutorial would be equally wonderful. In the real world, however, some are more effective and others are less so. In my opinion, German Passive Voice Tutor I/II (1989 version) is rather less useful than some of the other programs we are running in our lab. Its basic fault lies in its organization: the screens are cluttered, the directions and pathways and even some icons are confusing, and one easily gains the impression that there is just too much going on.

Passive Voice Tutor I/II is a HyperCard program designed for intermediate levels. It makes a valiant attempt to be a self-standing instructional tutorial; indeed, the review material is actually quite useful. It shows a sample sentence in the present tense, active voice, and then gives an element-by-element explanation in the passive. Selecting the right-sweeping arrow displays the same active sentence, and the student may click on buttons to view it in the passive of other tenses. There is a great deal of information here, and it's quite technical. Such explanations have their rightful place in certain situations, but students may perceive them as stumbling blocks. Also, the reviews are located under the "Go" button, which one would intuitively expect to start the actual lesson practice.

Clicking on the menu icon in Passive Tutor I shows the topics, which include present tense, simple past, present perfect, past perfect, questions, future, modals in the present, modals in the past, and four review sections. Passive Tutor II contains dative/double objects, subordinate clauses, *sich lassen plus* infinitive, *sein plus* infinitive, subjunctive and two review sections. The student selects a topic and is asked to rewrite the sentence in the passive. Clicking on the feedback icon displays either a reward message or locates the student's error. They have the opportunity to correct their work, and may choose to hide this feedback box or leave it open. If one types the sentence correctly, but with an alternate word order, the feedback screen first flashes an error message, and then finds that form is actually correct and accepts it, which some students find annoying. To proceed to the next sentence, one must click on the right-sweeping arrow. Clicking on the left-sweeping arrow easily repeats the sentence. The tutorial requires "*vom*," rather than accepting "*von dem*" as well. Also, commands must have the exclamation mark and interrogatives the question mark, and subordinate clauses must be separated by commas. Otherwise, the program doesn't penalize the student for lack of capitalization or forgetting the final period.

In general, this is an awkward though well-intentioned tutorial. Perhaps more recent incarnations have eliminated some of the clutter. My reservations lie not with the accuracy of the material, but rather with the design of the program. We're running it in our lab, but it's rarely used, because it demands a certain patience and perseverance which instructors and students alike may be unwilling to donate.

German Passive Voice Tutor I/II
Minimum System Requirements:
System 6.0.5 or higher
1 meg of RAM with System 6
(2 megs for system 7)
Passive Voice I takes up 470K of disk space, and Passive Voice II takes up 550K
HyperCard 2.0 or better

Hyperglot, the producer of this program, was bought by The Learning Company.

The Learning Company Foreign Language Division
Attn: Foreign Language Division
Customer Service
PO Box 10746
Knoxville, TN 37919
(800) 800-8270 or (423) 450-2100,
8:00 am–8:00 pm EST, Mon–Fri
email: glot@hyperglot.com
fax: (423) 588-6569,
Attn: Customer Service.

Judith Bode is a German professor at Grant MacEwan Community College (Edmonton, Alberta, Canada). She earned her BA in German and Spanish from Dalhousie University (Nova Scotia), her MA from the University of Oregon, and has been teaching since 1974. For the past several years she has also directed the multi-media language lab at her college; during this time she has created a number of lab programs using various authoring packages. Her particular interest is in computer-assisted language acquisition.

Hebrew For The Mac

Hebrew Language Kit v1.0

By Jonathan Arthur

What It Does

This language kit enables any Mac user with System 7.1 or later, to type, edit, and print Hebrew and Yiddish text with World Script savvy applications. This also includes the ability to type from right to left. I found it a little finicky to set-up, but once it's configured, the Hebrew Language Kit works well, and is easy to use.

What It Isn't

This is not the full blown version of the Hebrew Operating System. That will have to wait for a later review. This means the HLK will show certain system features from right to left, like written Hebrew, but system error messages and the like still appear in English. Also, Apple's text-to-speech software, Power Talk (included with System 7.5), is not yet implemented for Hebrew.

However, if you have a Macintosh application that has been localized for Hebrew use, then the menus, dialog boxes, help messages, and other elements will be displayed in Hebrew.

What You Need

- Any Macintosh with a 68020 CPU or better and 4 megs RAM, or a Power Mac with 8 megs RAM.
- MacOS System 7.1 or later—7.5 to make use of QuickDraw GX features.
- An Apple SuperDrive (1.4 meg floppy) or CD-ROM.
- Any Hebrew or non-Hebrew application that is World Script savvy.

What You Get

- Four high density floppy disks and one CD-ROM
- Hebrew Language Register (Figure 1). This program lets you choose whether an application opens in Hebrew, English, or any other installed script—for example, I have Hebrew, Arabic, Russian, or English available. Programs chosen for Hebrew will display menus and dialog boxes in Hebrew.
- World Script I. This extension to system 7.1 or later allows your system to handle almost any language, whether written right to left or up and down. Requires a Language Kit for languages with non-Roman script.
- System software including these additional extensions: Hebrew Support, Language Kit, and Roman Support. Also includes the Hebrew Settings control panel, and finally a Hebrew Script in the System Suitcase and four Hebrew Keyboard Layouts: Hebrew, Hebrew Transliterated, Hebrew QWERTY, and Hébreu AZERTY—French phonetic keyboard layout for Hebrew.
- Four Hebrew TrueType fonts: Arial, Corsiva, New Peninim, Raanana.
- Two Hebrew bit map fonts: Eilat and Hermon.
- A set of key caps labels for putting Hebrew characters on your keyboard.
- Simple Text Hebrew and Simple Text Hebrew-French.
- A slim but understandable manual.

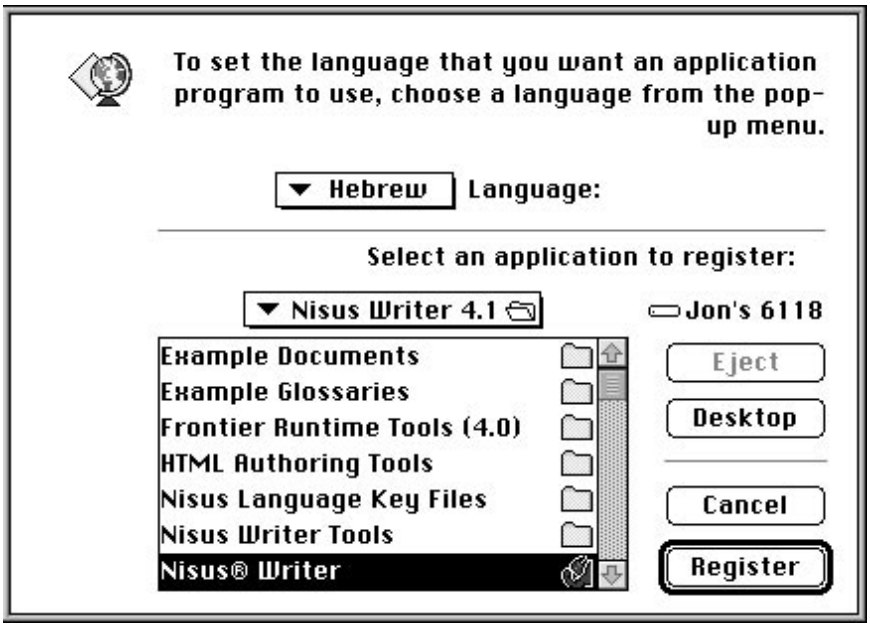


Figure 1. Using Hebrew Language Register, you can choose what language is primary—English or Hebrew. For Yiddish just select Hebrew.

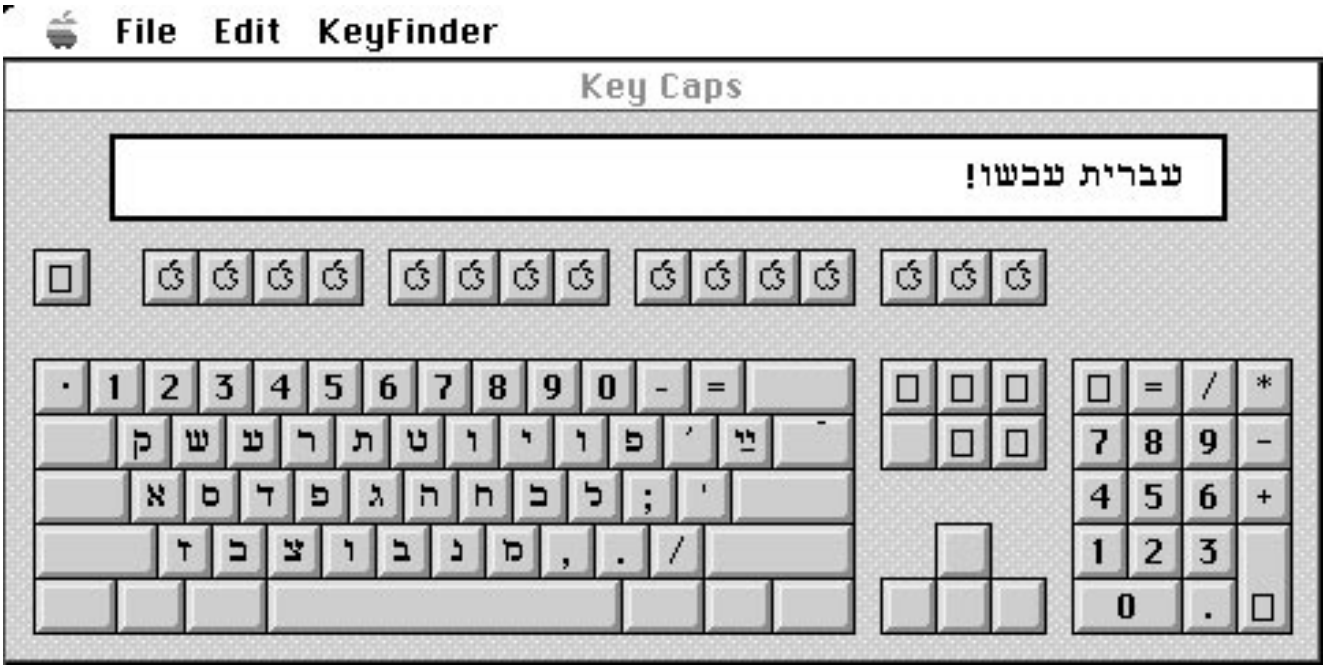


Figure 2. This is Key Caps, from Apple, showing Hebrew QWERTY layout. The window translates as "Hebrew Now!"

Installation

The installation itself is straightforward. Remember to start with extensions off and to disable any virus detection software. The finicky part comes in configuring the software properly and choosing an appropriate font.

Control Panels

- **Views**: The tricky part is displaying Hebrew filenames correctly. To do this go to the Views control panel and choose a Hebrew Font from the "font for views" option.
- **Text**: Use this to determine text behavior, i.e., right to left display, and cursor position.
- **Keyboard**: Choose which language script is active. This can also be done by clicking on the Flag Icon which appears in the Finder menu bar after installation. This flag lets you choose from twenty-one different Roman-based languages including English, British, Australian, and Finnish, plus the four Hebrew keyboard options that come with the Hebrew script. In my case, I also have Arabic and Cyrillic scripts installed.

Key Caps vs. Key Finder

I suggest you play around with at least one key utility like Apple's Key Caps which come with your System Software.

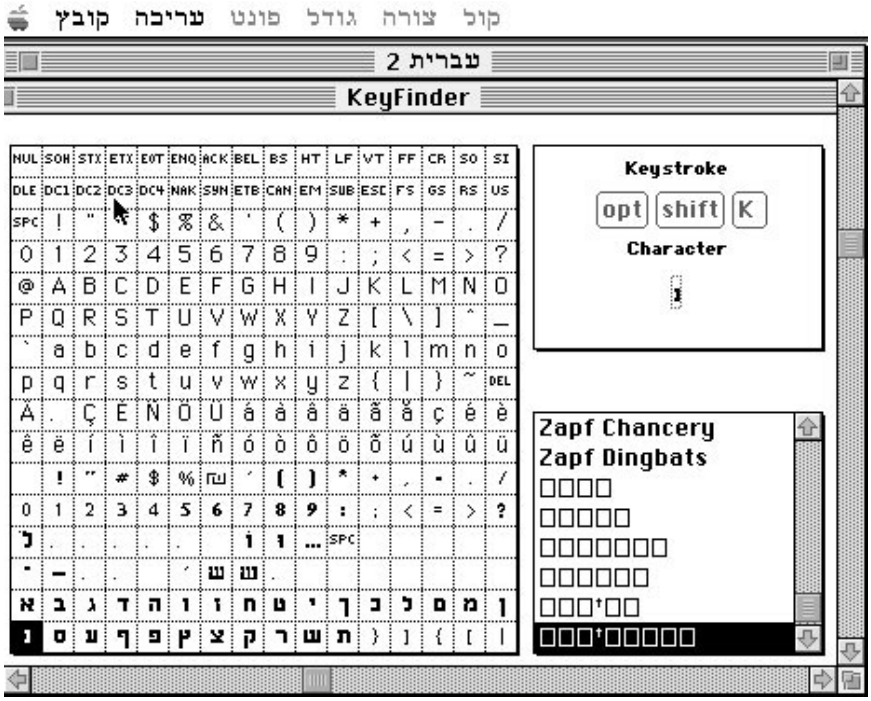


Figure 3. This is the Key Finder from Symantec. It lets you know how to reproduce a particular character.

I also have used Key Finder from Symantec. Key Caps (Figure 1) actually shows you the keyboard from each different selected language script. Neat. Key Finder (Figure 2) is helpful because it shows you what key combinations are necessary to produce any character from a chosen font.

What I Use

- **Nisus**—I use this a lot and like it. However, believe it or not, Word 5.1 still has better implementation for style tags but doesn't work with World Script. I still haven't found one application that does Hebrew, Power Secretary, and excellent styles. Maybe PageMaker.

- **WordPerfect**—3.0a does accept Hebrew Text and you can type, somewhat, from right to left. It's World Script savvy. Version 3.5 may improve on this functionality, but I haven't tried it. Gets kudos for working with Power Secretary.
- **Simple Text Hebrew**—Does the job. Localized for Hebrew. Hebrew is version 1.2.

Compatible Applications

With the included Hebrew Language Register application, one can assign a default language to compatible applications. The following applications have been tested, by Apple and found compatible with HLK:

- PageMaker ME, Adobe Systems
- HyperCard, Apple Computer
- Simple Text, Apple Computer
- ClarisWorks HB, Claris Corporation
- File Maker HB, Claris Corporation
- Nisus Writer, Nisus Software, Inc.
- Win Text, from Win Soft, S.A.
- World Write, from World Software Corporation

Demo Programs

Of the ten or so demos included with the CD I liked these four the most:

- World Write—fun, but won't let you save
- PageMaker ME—works well with Hebrew; takes 23 megs to install
- Nisus—still my favorite

Figure 4. This is Michal, a demo of a Hebrew Dictionary from Panergy in Israel.

- Michal—a Hebrew Dictionary (Figure 4) designed particularly for World Write

What's left to say? The Hebrew Language Kit, at $139 retail, works well for anyone needing Hebrew or Yiddish right to left text capabilities. Providing you have at least System 7.1, it's an out of the box Hebrew word-processing solution. I like the Hebrew Language Register feature.

My main criticisms are two: it's tricky getting Hebrew and Roman character file and folder names to display correctly. Also, there are too many separate components. I'd like a single control panel for all the language and keyboarding features instead of four. Do you hear that Apple? I liked the old control panel on System 6, you might think of that for MacOS 8.

Hebrew Language Kit v1.0
Retail Price $139
Apple Computer Inc.
20525 Mariani Avenue
Cupertino, CA 95014
Phone (800) 767-2775
fttp://www.apple.com

Jonathan Arthur drives a Performa 6118, 40/500 , and a PB 140, 8/340. He alternates between running his computer consulting & training business (Chocolate INK) & studying Talmud. He leads the BMUG Helpline on Thursdays. He can be reached on the Planet, at yonatan@lanminds.com, or at (510) 649-1889.

Blackbelt Japanese

by Rick Wong

Blackbelt Japanese is the first in Rising Wave's series of language-learning multimedia CD-ROMs. Designed to be used in addition to standard language instruction, Blackbelt software also offers tracking features for teachers who wish to use it in their classrooms.

Blackbelt Japanese Set One is designed to help students master all of the *katakana* and *hiragana* (the Japanese phonetic equivalents for alphabets), as well as 192 basic *kanji* (symbols which represent words). An additional 288 *kanji* will be taught in Set Two when it becomes available.

After enrolling (by entering a name), a new student travels through some pretty pictures into a Japanese classroom. New students always start out as White Belts, and students must pass a series of challenges (to demonstrate mastery of the new characters) to reach the next belt level.

Each challenge teaches the student eight new characters by playing a Shanghai-like game, in which the student removes two tiles, one with a character and one with its corresponding word or sound. The game is easy enough for even the youngest students to understand, and students may practice as much as they like before attempting a challenge match. To pass the challenge, the student must win the game in 90 seconds or less. After each successful victory, the student watches an animation of a shrinking Ignu (an ugly four-eyed beast representing ignorance). Once all the characters for a belt have been learned (and Ignu has been shrunk to nothing), the student must pass one final challenge which truly tests the student's recognition of the characters.

The *katakana* and *hiragana* characters are grouped into sets of eight with similar beginning sounds, while the *kanji* characters are usefully introduced in groups based on similar themes. All words and sounds are spoken to help reinforce the student's learning.

Unfortunately, the product does have some problems. Blackbelt requires that your monitor be set for 640 x 480. If your resolution is larger than that size, you'll be subjected to a window which jumps back and forth from the middle of the screen to the upper left.

Even worse, I encountered a bug, after which the software no longer would recognize when I successfully passed a challenge. Rising Wave does provide free technical support to registered users, but they did not answer my email (perhaps because I have not registered the software).

The boring animation sequence for Ignu might be enjoyable for grade-school children, but is probably too repetitive for the high-school age and older students who are more likely to be studying Japanese. On the other hand, it doesn't appear possible to replay the exciting final challenge once you've passed it.

The manual is short (30 pages) but accurate, and is unfortunately necessary to help figure out certain features such as exiting the program (Command-Q does nothing). There is a separate teacher's guide, which I assume explains how to access the student-tracking features which show how all the students are progressing.

Rising Wave has already released version 1.1 (I reviewed 1.0), and Blackbelt Japanese Set One is available for both Macintosh and Windows. Playing games can be a fun way to learn a language, and this software could be an effective method to help students learn the basic Japanese characters.

New students always start out as White Belts, and students must pass a series of challenges (to demonstrate mastery of the new characters) to reach the next belt level.

Blackbelt Japanese Set One
Minimum System Requirements
256 color monitor
(thousands preferred),
System 7.0 or higher,
8 megs RAM (5 megs free),
2 megs hard disk space,
640 x 480 resolution .
Price: $54.95 from Rising Wave
(special offer)

Rising Wave
2800 Woodlawn Dr., Ste 265
Honolulu, HI 96822
Phone: 808-539-3780
Fax: 808-539-3779
E-mail: blackbelt@rwave.com

Rick Wong has been writing Macintosh software since 1985 and currently works for Fujitsu Software Corporation, developing WorldsAway, interactive virtual world software currently available on CompuServe.

MacSunrise Script 2000

by Jim "Bud" Weisser

I have been studying Japanese since coming to Japan a little over three years ago; before then, I had no experience with the language. My spoken ability is good enough for most work purposes, though my reading is quite a bit weaker, due in part to the complicated writing system.

Japanese has three different types of writing which are commonly used: the *hiragana*, which is similar to an alphabet; the *katakana*, like the *hiragana* but primarily used for foreign words; and the *kanji*, Chinese characters with simplified writing forms. Most students of Japanese, including Japanese native speakers, have trouble learning and remembering the *kanji*, and this program attempts to help the student remember different Japanese characters.

Japanese is coded in double-byte characters which means that normal computer systems have problems reading and writing them. Therefore in addition to teaching a student the language, a program must educate the computer as well. MacSunrise Script includes fonts that will enable the user to read Japanese on his or her computer, but will also recognize if either Apple's Japanese Language Kit or KanjiTalk—the Japanese version of MacOS—is installed, and utilize those instead. It also includes KT 6.0.7, in case you wish to write Japanese as well, in a JLK compatible word processor (almost everything except Microsoft Word). This version of KanjiTalk is unfortunately of limited use, since it does not run on any Macintosh with a 68040 or PowerPC processor. Also, for those in need of cross-platform solutions, MacSunrise Script is not available for the PC, to the best of my knowledge—there was not anything in the accompanying documentation that mentioned this. I was unable to test how well it works on a non-Japanese based system, since the only Macs I use are Japanese capable.

MacSunrise Script is "...for learning and for looking up Japanese characters." And it does this task quite well. It is considered to be the first part of a three part set, with the second a comprehensive dictionary, and the third a reference grammar and learning program. For brute force memorization MacSunrise Script does a good job, giving a large degree of flexibility, allowing note-taking for particular characters, and offering a wide range of options for viewing the flash cards. A student can choose to view or hide the meaning, the character itself, or the pronunciation. Additionally, by clicking on the speaker, the student can hear the character pronounced. Choosing the Compounds button shows all common combinations of that character, while clicking on Strokes shows the individual strokes required for a given *kanji*. This is fairly important; there is only one correct method of writing a particular character.

There are also heavily customizable sets of multiple choice tests that allow the student to save results of tests: only missed *kanji*, only correct *kanji*, ones not answered fast enough, and so on. While the testing options are quite good, I was unable to figure out a way to test compounds, something much more useful than just testing individual characters. Additionally, this program does not utilize sound enough in the testing stage, for though I can click on any particular choice, I cannot have them all automatically read aloud to me, a feature which could utilize aural as well as visual memory.

The thing that bothers me most about this program is that it is so limited; for the list price of $329, I expect quite a bit more than an extremely nice set of flashcards, even ones with as many bells and whistles as are included here. Additionally, with the Kanji Dictionary (list $249) purchased as well, I dread to think of what the entire package will cost. When you consider that a Canon Wordtank (a popular electronic dictionary in Japan) costs less than the list price of MacSunrise Script (though it won't pronounce words, it can remember several hundred *kanji* that the user chooses) and is portable to boot, I wonder why someone would spend so much money on these two programs. Additionally, if a computer dictionary is all that is needed, a Freeware program called MacJDic has often been suitable for my needs, though I'm not a high-powered academic translator. *[Author's note: I am beta testing the commercial version of MacJDic, so a potential conflict of interest should be noted, I suppose, though I am doing it for free.]*

Perhaps, being in Japan I take a lot of these things for granted. I do not have to spend the day in front of my computer to see Japanese or to hear it. Were I studying in the U.S., however, I still think that I would be happier with a passage/story based text, with *kanji* lookups available on demand and the entire passage capable of being read aloud by the computer.

This program would have satisfied me in the pre-CD days of language learning, but it falls far short of the mark now. Judging from the quality of this specialized piece, however, I am interested in seeing part three when it is released, for it could make the entire package a high quality, if rather expensive, option.

Price: **MacSunrise Script 2000** $329; **Kanji Dictionary** $249

Stonebridge Press
PO Box 8208
Berkeley, CA 94707
(510) 524-8732, Fax (510) 524-8711
71650.3402@compuserve.com

Jim "Bud" Weisser works for PSINet Japan, loves Macs and plays defensive tackle for a football team in Japan when he's not studying Japanese. He is virtually active on soc.culture.japan.moderated, sci.lang.japan and fj.life-in-japan, as well as a couple of other newsgroups and the English language side of Nifty-Serve, a proprietary Japanese network.

Norwegian with MacNorsk

by Megan Lynch

MacNorsk is the only Norwegian language-learning software of which I am aware. It is a series of HyperCard stacks written in 1989 on a Mac SE. It shows its age, but is nonetheless an entertaining and informative program. Its developers promise an update soon.

Unlike so many manuals which seem to be written by engineers, the MacNorsk manual is written in plain English and anticipates most needs the user could have. My only quibble with the manual is that it has no standard method of referring to the command key. It uses the key in places and refers to it as the command key in others. This can be confusing to people who are just starting out on the Mac. In fact, the new Power Computing keyboards don't even have the they just have the clover leaf. I would prefer that the first time it is mentioned that it be called the /command/clover leaf key (afterward to be called "the command key").

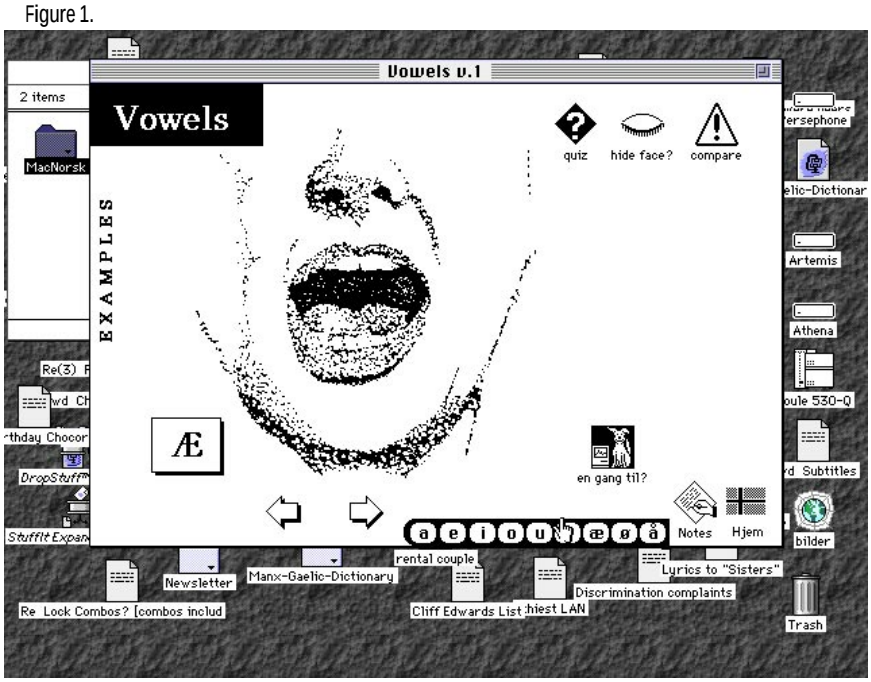
The manual states that MacNorsk is aimed at English speakers who have some familiarity with Norwegian. I have not studied Norwegian, but am familiar with Swedish and Danish. These languages are somewhat mutually intelligible. The manual describes the developers' position on the place of CALL (computer assisted language learning) in a language-learning program. Unlike many developers, Louis Janus and David Rose, the makers of MacNorsk, see CALL as a supplement and not a replacement for a human teacher. In fact, MacNorsk is designed just as much with teachers in mind as students.

The entire MacNorsk program, as received for review, consists of 11 stacks as well as a Home stack. Some stacks focus on listening comprehension, others on drills and still others on grammatical and cultural information. The program can be purchased in a modular fashion, with the Home stack and one content stack as the minimum needed to start. In this way, those who cannot afford the entire MacNorsk program can acquire it in dribs and drabs. The fact that the program was written in HyperCard also makes it possible for HyperCard-savvy teachers and students to make modifications to the program. The developers have not hidden the innards from end users. They solicit additions and state that if they incorporate a consumer's changes, they will give them a free copy of any updates as well as credit for the improvement.

The sounds were the real joy of this program, to my mind. MacNorsk starts out with a bar or two of theme music which is played by a different instrument each time you open it. Native speakers "talk" to you throughout most of the program. The look of the Home card is a familiar one. There are different Norwegian flag buttons for each MacNorsk stack, as well as sound controls. You can also access a "Notes" section that will allow you to make your own notation about the program. I tried the Vokaler (Vowels) section first.

Norwegian has nine vowels, three of which (æ, ø, å) are letters English does not have. Furthermore, Norwegian pronunciation of the vowels "o" or "i" is different that English pronunciation. Even after years of study of Scandinavian languages, I am not perfect in reproducing these sounds. It is therefore helpful to train in both hearing and reproducing these vowels. The Vokaler section has cards that each contain a drawing of a

Figure 1.



mouth pronouncing the vowel in question. There is an option to hide the drawing. Upon accessing each card, the user hears a native speaker pronouncing the vowel three times. There is an animated button that allows you to hear the sound bite again. There are examples of words that use that vowel. I was a little disappointed that there were no sound bites for the word examples, however. The Compare card allows you to compare and contrast the different Norwegian vowels, as well as introducing you to the three most common Norwegian diphthongs. Unfortunately, unlike the vowel cards there are no contextual examples of the diphthongs in the program itself. There are a few examples in the manual. Once sure of yourself, you can take a quiz. You can "cheat" by having the mouth drawings visible to you or not. I found that confusing certain vowel sounds (especially "o" and "u") was easy enough to do even with the drawings. When you answer correctly, the speakers congratulate you with "Flott!" and other encouragements. When you answer incorrectly, they politely tell you to "Prov igen" ("Try again") and other admonishments. The developers were intelligent enough to use both male and female speakers and to vary the responses so that although it can't help but eventually cycle through again, it's not monotonous. This stack was one of the most useful in the whole program.

The Kroppen (The Body) stack uses cute drawings to teach you the words to describe to your Norwegian doctor where it hurts as well as describe the charms of your Norwegian boyfriend. Upon clicking the drawing, the Norwegian word for the body part appears onscreen while a native speaker says the word twice. The connected glossary allows you to learn the singular, plural, definite and indefinite forms of the word. The connected text selection uses the words learned in Kroppen in context and allows you to hear a native speaker speaking the selection either a sentence or a paragraph at a time. As in many parts of the MacNorsk, you have the choice to print out the selection. The quiz involves typing the word that you hear. It's good practice not only in listening comprehension but in remembering which key combinations one needs to produce the three exclusively Scandinavian vowels on the Mac keyboard.

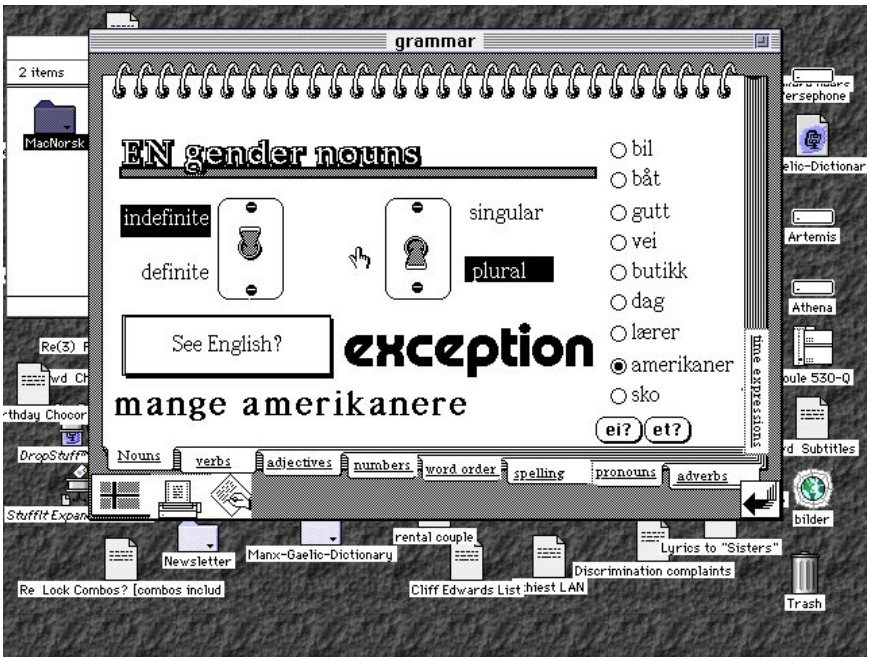


Figure 2.

Tidsuttryck (Time Expressions) is an exercise that should be familiar to anyone who has learned a language before. Many cultures have different ways of referring to the hour. The cards contain a picture of a clock showing a particular hour, a box at the bottom showing it in digital format and a native speaker declaiming what time it is. The "lists" button allows you to reach a card containing vocabulary relating to days of the week, months, seasons, and times of day. It does not have sound bites for these expressions. Too bad, as the Norwegian word for week (uke) is pronounced differently than the Danish (uge) that is my starting point for this program.

Geografi (Geography) contains most of the cultural information in MacNorsk. There is a general map of Norway and its neighbors, a map of Northern Norway, one of Southern Norway, a map of fylkene (territorial divisions) in Norway and a text on Norwegian geography. The maps have "hot areas" that trigger a native pronunciation of the place name. The maps of Southern and Northern Norway have associated card that give basic information on each city on the map. Curiously, there is no associated card for the city of Ålesund. The historical and cultural tidbits on the info cards are interesting but not necessarily self-explanatory. For those who don't know what a stavkirke (stave church) is, it can be mystifying. Stave churches are a major Norwegian contribution to medieval art history and should be explained in brief if they are to be mentioned. This could be a marker of the developers relying on the end user having access to a Norwegian teacher who could explain such things. However, how much cultural content is in a university language course really varies from place to place. From both map cards, you can access a city index which has information cards for all the cities, including several not depicted on the maps. On the Fylke card, you can click on the territory and see (not hear) the name. You can access an info card on the region which will tell you its population (as of 1988), its population as a percentage of the entire population of Norway, its area in square kilometers, its area as a percentage of Norway as a whole, and its major towns. The Fylke card has the only quiz in this stack. The text card has three paragraphs about Norwegian geography. It's read at a fast clip by a native speaker. In this particular instance, you only have the option to hear it a paragraph at a time. It would be even more helpful if you could hear it a sentence at a time as well.

Familien Til Liv Hege (Live Hege's Family) allows intermediate students of Norwegian to practice listening comprehension. Its opening card features a picture of Liv while you listen to hear speak

informally (an at informal speeds) about her family. When the selection is through playing, a quiz appears. Even with my familiarity with Scandinavian languages, I could not answer more than one question without using the "text" button to see the text of the selection. Liv speaks very fast! You can opt to play the sound while reading the entire selection or hear it sentence by sentence. After reading the selection, I was able to answer the other five questions correctly. You can also use the Hear Again button on the Quiz card to listen to the selection without text. The quiz is simple enough to be useful only once or twice, but the stack can be useful as a listening comprehension aid for quite some time.

Huset Til John (John's House) has an interface that is surprisingly close to that of the Transparent Language courses, but MacNorsk was there first. There is a text selection over which you can move the mouse to find the meaning of certain vocabulary words displayed in the Meaning window and notes on literal meaning of phrase parts, comparatives, word order inversions and irregularities displayed in the Notes window. The See Parts button allows you to scan for comparatives, inversions and possessives. The Hear John button starts the native speaker's reading of the text. Again, it is fast and recommended for students of at least intermediate attainment.

Vanlige Uttryck (Common Expressions) is a simple stack that has native speakers saying 22 common Norwegian phrases. It's well-suited to beginners.

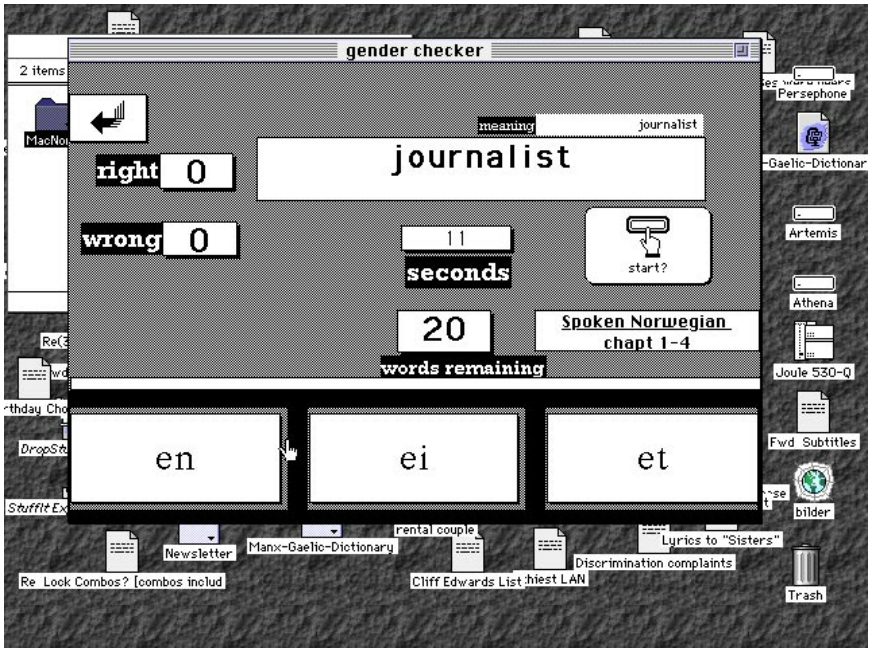
Grammatikk (Grammar) is a meaty stack that takes the form of a spiral bound notebook with tabbed sections for nouns, verbs, adjectives, numbers, word order, spelling, pronouns, adverbs and time expressions. For nouns, in addition to the non-interactive information, there is a "machine" that consists of two switches that toggle between definite and indefinite and singular and plural; a button to see the English translation; buttons to choose a different nominative gender; and various radio buttons to choose new nouns of the currently selected gender. The information sections are not entirely static as they make good use of HyperCard's "animation" and transition capabilities. The pronoun section has a similar pronoun "machine" that allows you to use buttons to choose different combinations of first, second and third person; singular or plural; as subject, object, or possessive; and using reflexive verbs in the sentence.

Familieord (Family Words) is a flashcard stack that tests you on a startling array of names for relatives. It comes loaded with 30 cards. Each card has the Norwegian term, the English translation and the term in the singular, plural, definite and indefinite forms. You can hide any of these sections in order to have several ways to test yourself. You can mark cards when you feel that you know them too well in order to skip them, or you can delete them altogether. You can sort cards, find a specific word, create a new card or create a new deck. Using the Help button, I got a little lost and found it took me a minute or two to find the way to return to the flashcards.

The Gender Tester stack and the Past Tense Tester stack use the same interface. There are several available lists of words that will test you on either the three Norwegian nominative genders or on past tense conjugations, depending on the stack. After pushing the start button, the program tells you how many words are on the list and asks how many you want to be tested on. In the Gender Attender, the noun appears onscreen and there is one button for each of the three genders at the bottom of the screen. You hit the button that represents the correct gender for the noun onscreen. There is a scoreboard for right and wrong answers at the left. There is a timer to let you know how many seconds you are taking to answer. There is a meaning window that tells the English meaning of the word. After the quiz, you can choose to see which words you missed. You can edit an existing word list or create a new one. You can also find a word to review from any of the lists. The Past Tense Tester is even more interactive. An infinitive is displayed on the screen and you have to type in the past tense of the verb. I did very poorly in this section and it vividly demonstrated to me a major difference between Norwegian and the other Scandinavian languages I have studied.

I spotted a few typos and found a few "bugs." I experienced one little glitch with the sound that I couldn't reproduce again. I was using HyperCard Player 2.2 to access MacNorsk. The developers assume that one is using HyperCard itself. The fluke with the sound may have been attributable to this. I also had problems with blank HyperCard text boxes coming up after I had started the Gender Attender. I had to click the Close box on the text window in order to get to the Answer buttons and so was delayed in my test response. I ran MacNorsk off of a Zip disk attached to a PowerWave 604/120 running System 7.5.5, all of which

Figure 3.



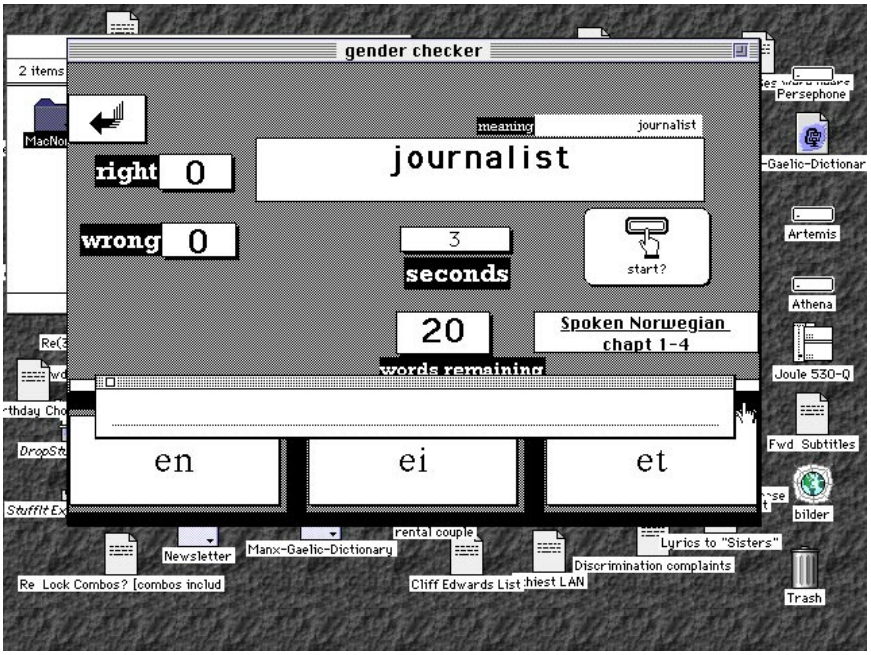


Figure 4.

were technologies unforeseeable when MacNorsk was written. I cannot tell which glitches were inherent in the program and which might have been caused by my configuration. Things went reasonably smoothly. No truly maddening bugs popped up.

The Home stack, Familieord, Kroppen, Tidsuttrykk, Vanlige Uttrykk, Gender Tester and the Past Tense Tester are all available from the developer for $15 dollars apiece. Geografi, Huset Til John, Grammatikk, Vokaler, and Familien Til Liv Hege are $20 apiece. A demo disk including at least one card from each stack is available for $10. The entire MacNorsk programs sells for $150, a savings of $55 off the purchase of all the individual parts. My sense was that $150 is a fairer price for institutions than for individual consumers. Students of Scandinavian languages have become used to having to pay premium prices for language aids. There just isn't the large market for Scandinavian language products in this country that there is for Spanish, or even German. However, teachers and schools get more bang for their buck than the individual student. The program can be networked and site licensing is available. Schools are constantly renewing their student body so they will always have students whose level is appropriate for MacNorsk. The individual student of MacNorsk will outgrow the program, some stacks faster than others. With a lower price for individuals, the developers can reach the many people who might want to learn Norwegian but not live near the few U.S. universities that teach it, or cannot afford to pay for courses over the long term.

In general, I found MacNorsk a charming program. I think it was written creatively and with a teacher's knowledge of what should be taught and how. It's remarkable how well early HyperCard programs hold up over time. In some ways, they are better for learning than a lot of modern programs because they do not rely on flashy "edutainment" tricks and of necessity demand a greater involvement on the part of the user. I look forward to seeing version two of MacNorsk and hope it includes color, more sounds and comes on CD as well.

MacNorsk
Minimum System Requirements:
1 meg of RAM
11.6 megs of hard drive space for entire program
HyperCard or HyperCard Player 2.x

Purchasing Information:
MacNorsk can be purchased from
Louis Janus
5136 Sheridan Ave. So.
Minneapolis, MN 55410 USA
Phone: (612) 928-0952 (within Minnesota and International)
(800) 532-3811 (US only)

Megan Lynch keeps hoping to snag herself a Swedish husband so she can move to Sweden. Her body is currently closed for repairs. Prospective Swedish husbands can reach her at spidra@sirius.com or megan_lynch@bmug.org.

Excalibur 2.3

& Its Spanish Dictionary

by Gene Duckart

Excalibur is the Freeware spelling checker for text files, developed by Rob Gottshall and Rick Zaccone. Files of type TEXT are documents that consist of ASCII characters only. Text files are the most basic type of files used in computer science and telecommunications. They can be read by many different types of applications and many different types of computers. They are grist both for text editors and word processor applications. Most computer programs are written with text files, using text editors that have special functions for handling programming languages. Text files also provide input for word processors, like Microsoft Word, and page layout programs, like Adobe PageMaker, which are used to produce elaborately formatted multi-author documents like The BMUG Newsletter. Text files provide input to a multitude of computer applications that handle everything from the most sophisticated data analysis to ordinary email. Users of Macintosh computers are indeed fortunate to have Excalibur, a program that is fast, flexible, and capable of checking spelling in text files written in English, Dutch, French, German, Italian, Spanish, and even in Manx, the virtually extinct Gaelic of the Isle of Man.

[E]xcalibur ... is fast, flexible, and capable of checking spelling in text files written in English, Dutch, French, German, Italian, Spanish, and even in Manx, the virtually extinct Gaelic of the Isle of Man.

Excalibur 2.3

As of September 1996 Excalibur is available through The Internet via ftp://ftp.eg.bucknell.edu/pub/mac/. The manual accompanying Excalibur describes in detail its many capabilities for spell checking any files of type TEXT, including files with TeX and LaTeX.

TeX is a markup language that is used for preparing text files for typesetting. TeX users sprinkle their documents with commands that change the current font, font size, etc., including all the commands that are necessary to produce a typeset document.

LaTeX is a collection of typesetting macros that is built on top of TeX. LaTeX commands are higher level commands that allow the writer to produce highly structured documents. Writing in LaTeX is somewhat similar to writing in HTML. TeX and LaTeX are widely used in the scientific and mathematics communities because of their powerful equation typesetting abilities.

Excalibur is a very good spelling checker for LaTeX and TeX, as well as for plain text files. The ability of Excalibur to handle LaTeX and TeX is in *addition* to its ability to handle plain text files, and it does not limit its usability for plain text files in any way.

Excalibur does not work directly with applications like word processors, spreadsheets, graphing programs, etc. However, since it is very easy to spell check the clipboard with Excalibur, one might say it will work with *lots* of applications.

Features include:

- Excalibur will offer suggestions on how to correct a word.
- Excalibur can spell check the clipboard. This makes it a good spelling checker for any text based application such as Alpha, BBEdit, or Eudora.
- You can teach it about new LaTeX commands and environments that you define.
- Excalibur optionally spell checks text in the typewriter (\tt) font.
- You can create your own dictionaries.

- Excalibur works on any plain TEXT file (type TEXT).
- If you are running System 7 or greater, there is balloon help.
- You can get a copy of the Excalibur manual in PostScript, Acrobat Reader (PDF) format, or with LaTeX formatting from ftp.eg.bucknell.edu in pub/mac.
- Excalibur is free.
- Excalibur is 32-bit clean and System 7 friendly.
- Excalibur is distributed as a fat binary (having code for both pre-PowerPC and PowerPC machines).
- British, American, Dutch, French, German, Italian, Spanish, Manx and Medical dictionaries are available. Like Excalibur itself, the dictionaries are free. You can get them from ftp.eg.bucknell.edu in pub/mac/Excalibur-dictionaries.

Version 2.3 new features:

- Excalibur is much better at making suggestions.
- Excalibur gives you the option of making corrections using TeX style accents or with Apple's extended character set. See the manual for more information.
- When Excalibur adds a word to a dictionary, it will do so using Apple's extended character set if possible. It's important that you convert any dictionaries that you have defined. See the Excalibur Genealogy section of the manual for more information.

Excalibur's Spanish Dictionary

Excalibur's Spanish dictionary was elaborated by Juan L. Varona, Dpto. de Matemáticas y Computación, Universidad de La Rioja, Calle Luis de Ulloa s/n, 26004 Logroño, SPAIN, email: jvarona@siur.unirioja.es. The dictionary and the collection of words that it contains can be distributed, modified or not, provided reference is made to the author and provided that the conditions outlined in the Léeme/Readme file that accompanies the dictionary are satisfied.

The Spanish dictionary (created Tuesday, July 9, 1996) is a dictionary for TeX that has been designed to be used in a Macintosh with Excalibur. The collection of 247,049 words that constitutes this dictionary is in 8 bit format with Mac Roman ASCII code. That is, the following hexadecimal codes are used for the non English letters:

(1) 87 for á

(2) 8E for é

(3) 92 for í

(4) 97 for ó

(5) 9C for ú

(6) 9F for ü

(7) 96 for ñ

These are the only letters that are used in Spanish and not in English. The dictionary can be easily transformed, no matter which are the ASCII codes of the non-English letters in the machine to be used.

The Spanish dictionary is a comprehensive dictionary in the format of a very large modifiable list of words in ASCII. Excalibur provides for modification of its dictionaries in its menu bar where, under the heading Dictionary/Conversions there are options for the conversions: Dictionary –> Text and Text –> Dictionary. Thus, the Spanish dictionary is both large and flexible, and can be modified to answer the specific preferences of its users in ways that I will suggest below. Although the dictionary was originally written for use with TeX files, and continues to have such capability, the new 8-bit dictionary can be used without modification for plain text files. Its capabilities for TeX are invisible when it is used for plain text files.

The size of the Spanish dictionary is two megs on disk. It is more than six times larger than the Standard Dictionary in English because of its numerous word inflections. Before going on to describe Excalibur's spell checking functions, I will mention the two dialog boxes that appeared while I was working with the 8-bit Spanish dictionary and Excalibur Version 2.3 under System 7.1 on a Performa 636CD with eight megs of RAM.

- *Dictionary Error! Filename: Diccionario Español. Excalibur encountered an error while trying to load the dictionary. Error: Out Of Memory! Rats!* This message appeared when Excalibur failed to load the Spanish dictionary. The reason it failed was that I had opened several other programs and many windows. The solution was to close programs and windows, giving the computer more memory to load the dictionary
- *Dictionary Error! Filename: Diccionario Español. The conversion failed. Error: Out Of Memory! Rats!* I encountered this dialog box when I tried to use the Conversion feature under Dictionary on the menu bar to convert Diccionario Español. In this case the solution was to restart the computer while holding down the Shift key. Restarting with the Shift key held down closed any open programs and turned off the System extensions. The

The dictionary and the collection of words that it contains can be distributed, modified or not, provided reference is made to the author and provided that the conditions outlined in the Léeme/Readme file that accompanies the dictionary are satisfied

memory made available by turning off the System extensions and closing other programs was sufficient to allow the conversion to continue successfully.

Spell Checking Spanish Text

Figure 1 shows a folder arranged for bilingual spell checking with Excalibur's English and Spanish dictionaries. Because Excalibur looks *only* in its own folder for dictionaries, it is most convenient to keep the dictionaries in the Excalibur folder. The Standard Dictionary and the Diccionario Español are large "read only" files, while My Dictionary and Mi Diccionario are small, easily modifiable files that can accept new words encountered during spell checking. To prepare to spell check Spanish files one uses Excalibur's menu bar to activate only the two Spanish dictionaries. Excalibur provides an Add button in its dialog box for adding new words to active dictionaries. When Excalibur's Add button is pressed, new words are automatically added to Mi Diccionario, the only modifiable active Dictionary in the folder.

Figure 2 shows an arrangement for spell checking with Excalibur using the Macintosh Drag and Drop option. To begin spell checking the file Texto Español, for example, one Drags and Drops the Texto Español icon onto the Excalibur alias icon. The program then opens to the dialog box shown in Figure 3, at which point Excalibur is ready to begin spell checking Spanish text provided "Load currently active dictionaries" was saved in the Excalibur Preferences file.

Figure 3 shows Excalibur spell checking Texto Español, a file stripped of all accents by transit through the popular Macintosh offline reader, BulkRate. (The Internet also strips accents from text files.) In the lower right corner of the dialog box we see that Excalibur has checked 103 words and flagged eight that were not included in either Diccionario Español or Mi Diccionario. Excalibur displayed these eight words one by one as I clicked on the dialog box buttons, and suggested alternative words in the Suggestions box. In the case of the word "*habito*", for example, I accepted the suggested word "*hábi-*

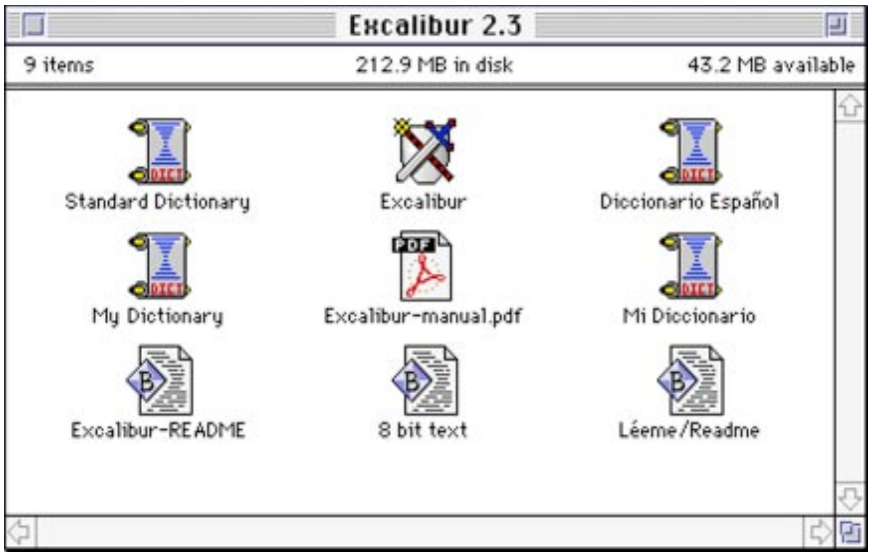


Figure 1. A "bilingual" Excalibur folder

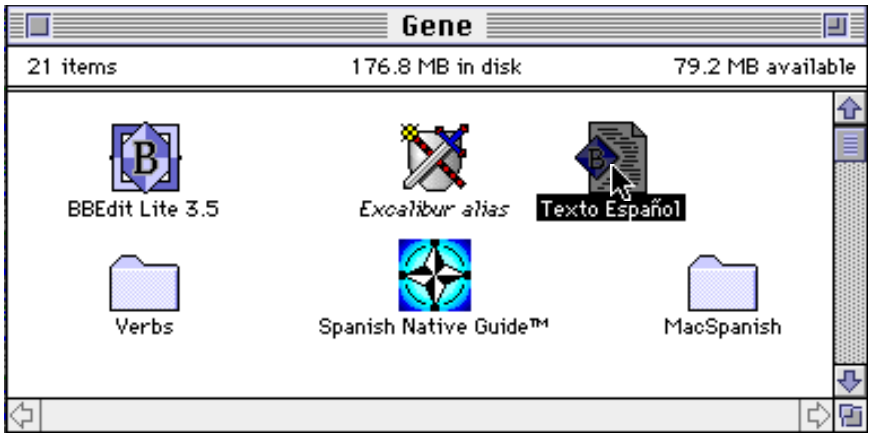


Figure 2. An arrangement for Drag and Drop using an Excalibur alias

Figure 3. Excalibur's main dialog box

to" by double-clicking that word in the Suggestion box. The word "*hábito*" immediately appeared in the Change To box. A click on the Change button, inserted "*hábito*" in the Texto Español file, even though such changes are not observable in the text window of the dialog box. Excalibur then displayed Done in the Status line, and I quit the program.

With our example file, Excalibur flagged six words that need accents (*enseñar, debería, comunicación, pronunciación, únicamente,* and *hábito*). It flagged one typographical error, *consite*, and suggested the correct word, *consiste*. Finally, it flagged a word, *hablante*, that was not included in either dictionary. In sum, seven words were corrected and one word was added to Mi Diccionario.

There are many word pairs in Spanish where meaning depends on the presence or absence of an accent. Here human intelligence is needed to decide whether an accent should be placed. Examples of such word pairs are *si/sí, mas/más, seria/sería,* and *articulo/artículo*. In our example file the word *si* in the fourth line of Figure 3 should be written *sí* in the given context. One solution to the problem posed by such word pairs would be to remove the *unaccented* word of each pair from the Spanish dictionary. Excalibur would then flag the removed words in text so that proofreaders could readily decide from context whether to place an accent. A limitation of this strategy is that words like *el (él)* and *se (sé)* are very common, and it would be necessary to "Ignore" them many times to discover a few "Change"es.

The multiple dictionaries can be especially useful in spell checking "bilingual" text, in which case one activates dictionaries in two languages.

Excalibur and its Spanish dictionary are generally *very* good at discovering typographical errors and other errors that are likely to be made by beginners in Spanish. However, the dictionary may contain idiosyncrasies similar to one that I happened to discover. English-speaking beginners might occasionally type "*proprio*" instead of the common Spanish word *propio*, meaning "own." As a test I typed *proprio* in the text, and was surprised when Diccionario Español did not flag it as an error! It turns out that the dictionary contains *proprio* as a legitimate word. According to Juan Varona *proprio* exists in *El Diccionario de la Real Academia Española de la Lengua* as an old and disused word signifying *propio*. Knowing this, it was easy for me to use Excalibur's Conversion feature to remove *proprio* from my copy of the Spanish dictionary.

The ease with which the dictionaries can be customized will be of great convenience to Excalibur's users, who can modify them to suit their particular needs. The multiple dictionaries can be especially useful in spell checking "bilingual" text, in which case one activates dictionaries in two languages.

I am pleased to take this special opportunity to thank Juan L. Varona, Rob Gottshall, Rick Zaccone, and all who collaborated in producing Excalibur and its dictionaries, for their important contribution to Macintosh computing and communication.

System Requirements:
System 6.0.5 or higher
Mac Plus or higher
For RAM, the preferred size of Excalibur 2.3 is 900 K under System 7. Under System 6 the preferred size of the application may need to be increased to about 2,700 K in order the load the Spanish dictionary. The Spanish dictionary requires two megs on disk.

Gene Duckart ha sido aficionado de las Mac desde 1990 cuando compró una Macintosh SE. En 1994 se enamoró del idioma español y empezó a estudiarlo con la ayuda de su computadora. Dedica este artículo a todos diseñadores de Freeware para las Mac.

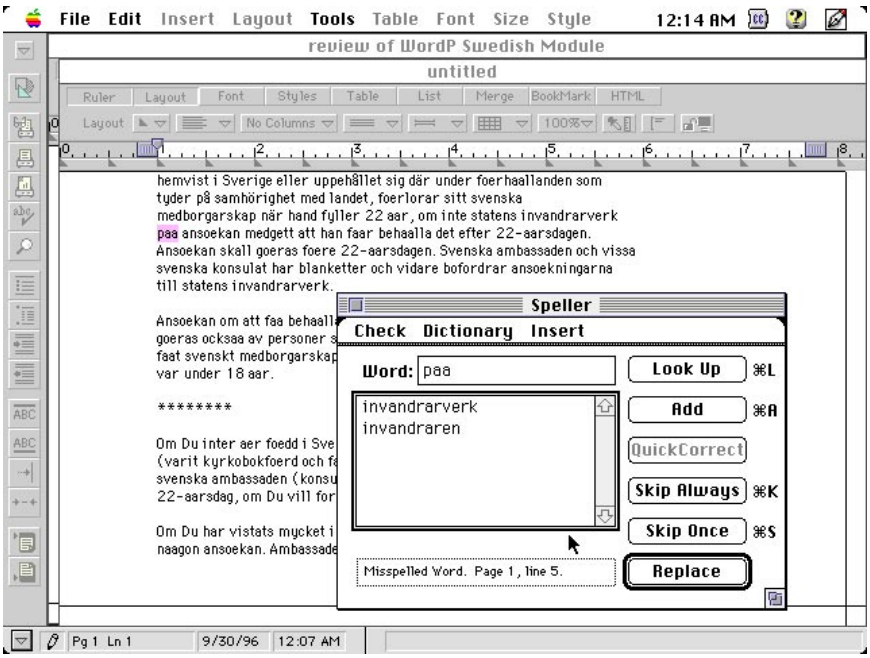
WordPerfect Swedish Language Module

by Megan Lynch

Language checking tools are not in credibly sexy, but something that most students no longer know how to live without. To demonstrate how useful such tools can be, imagine how your impression of different people on Usenet would be improved if they only spellchecked their posts before hitting the "send" key.

I tested the WordPerfect Swedish Language Module 3.0A with WordPerfect 3.5 on a variety of PowerPC machines. The module consists of five files: Hyphenation, Dictionary, and Thesaurus, as well as two files whose workings I know not. The instructions come in six languages. To install, one drags these files to the Language folder within one's WordPerfect folder. I have not used WordPerfect before so I had to learn everything about using the Speller and Thesaurus from scratch. It was reasonably intuitive to get it to spellcheck the document. Although the manual does little to specifically address the Language Modules, the sections on the Speller, Thesaurus and the ST Utility are pretty comprehensive. Unfortunately, the online help is not as good. The WordPerfect Guide has nothing to say on the subject. The Balloon Help is a little better, but to wring the most from these features, you need to read the manual and practice.

Figure 1.



I wanted to test this application against a variety of language levels. First, I transcribed the Swedish translation of an American graphic novel called *Love and Rockets*. I felt that this would be a good test of how extensive the dictionary is because the original English used lots of slang and more colloquial speech. I also typed in text from P.C. Jersild's *Uppror Bland Marsvinen* to get a representation of a literary style. I composed my own high beginning/low intermediate text as well as proofing an official government document that had been sent to me over the Internet.

The Speller and the Thesaurus can be used from within the WordPerfect application or independently. One does this by double-clicking on the dictionary in question or the Thesaurus file. A smaller application called "ST Utility" then calls up the file you opened. This is convenient if one wants to look something up without taking the time or memory that WordPerfect would take to open. However, I did not find that application was quite comprehensive or professionally polished enough to make me want to open it very often. In fact, I got an "Invalid Dictionary Version" error when I tried to open the Ordlista with the ST Utility.

WordPerfect's Swedish module failed at one of the tasks that a Swedish spellchecker could have helped the most with: converting from old Swedish spelling to current. One of the great nemeses of multilingual Internet users is the inability of ASCII to consistently transmit diacritical marks correctly. Even though your Mac can produce the three Swed-

ish letters *å, ä,* and *ö* correctly, they may not look that way when they reach somebody's Wintel, UNIX or Atari box on the other end. Before language reform in the first half of this century, the Scandinavian countries rendered these letters *aa, ae,* and *oe*, respectively. To get around this ASCII problem, Scandinavian-speakers on the Internet often revert to using the old double-vowel spellings.

The information I received on dual citizenship I received was written in this style. It had some genuine misspellings as well as the old double-vowel spellings. Whereas the spellchecker caught most of the misspellings, it was not consistent in catching the older spellings. *Aer* is the old spelling for *is*. The verb *to be* is one of the most used in any language and yet the spellchecker had no useful suggestions for substitution in this case. It should have suggested *är*. Another example is the word *behaalla/behålla* (to keep). It flagged it as a misspelling but the only replacement suggestion it had was the noun *behåll* (hard to translate—means something like *original condition*, or *good shape*). This reduces its usefulness to Swedes and students of Swedish languages because replacing *aa,ae* and *oe* with *å, ä,* and *ö* respectively is an operation that one can expect to conduct with frequency until some brilliant developer comes up with a way for all platforms to receive the same characters through the Internet. Even if that day comes, one could still expect to have to convert older documents so that they can be read by modern eyes.

Even more distressing was a bug I came across. I don't know what causes it or how to avoid it, but the software hangs after certain words and suggests spellings for the last word it encountered rather than the word it is currently on (see illustration). Another tic I couldn't predict was when the module would revert to reading the US Dictionary instead of the Swedish Ordlista. Of course, I wouldn't find this out until I was midway through correcting. One is supposed to be able to set the language under the Tools —> Language —> Set Language. I did this and failed to see what effect it had. It seems to set it to Swedish for the duration of the first spellcheck. If one invokes the spellcheck again, it reverts to U.S. English. This is when something that

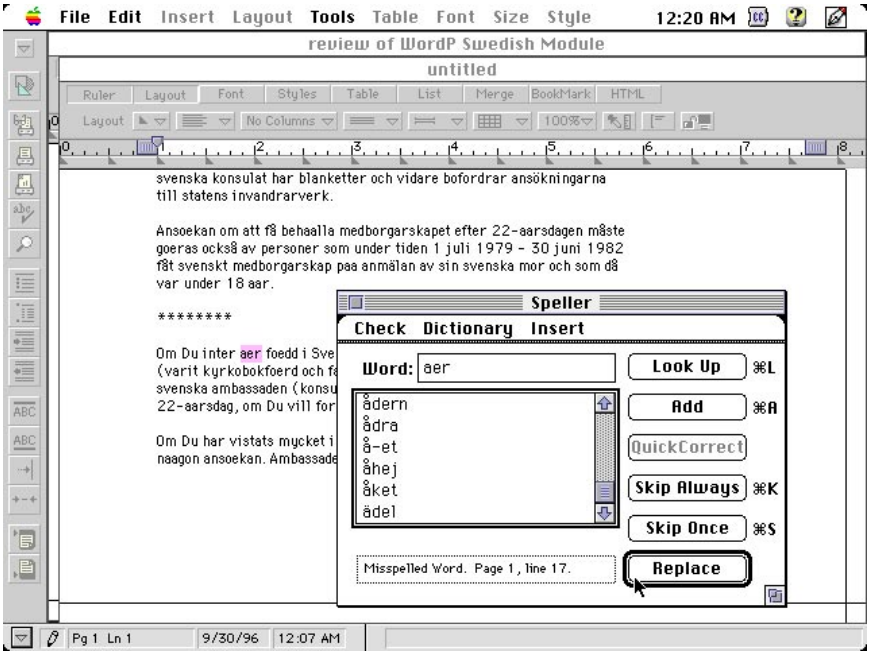


Figure 2.

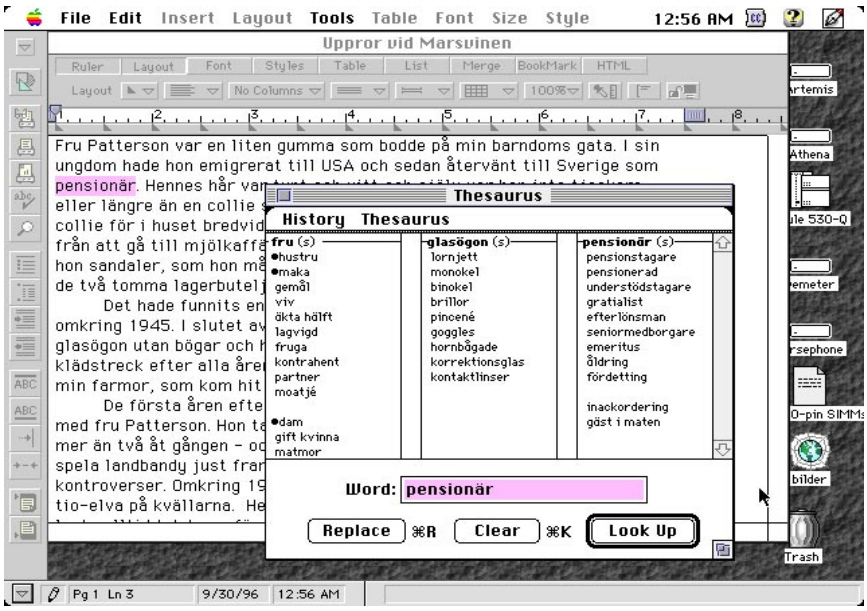


Figure 3.

is a "feature" for the US version of WordPerfect becomes a pain in the rump. QuickCorrect corrects common misspellings on the fly without even running the spellchecker. This is annoying to me simply because it precludes writing in non-Standard English. Most playwrights and authors need to do this. Thankfully, I discovered after awhile that this feature could be turned off using the QuickCorrect submenu of the Tools menu.

I have to say that I would be disappointed with this product were I a Swede. No American would put up with these kinds of shenanigans from a US version spellchecker. As for students of Swedish, the spellcheck is of some utility but one needs to be on one's toes. The Thesaurus is a little more useful simply because it is so difficult to get a Swedish thesaurus in this country. The ST Utility is a good idea, but needs to be improved upon.

While testing this software, WordPerfect switched ownership from Novell to Corel. Talking with a representative at Corel, I found out that they have plans to update the Language Modules. I have the following suggestions:

1) Make the Set Language feature mean something: Allow one to designate the language of a particular document so that the Speller always knows which dictionary to revert to. The only spanner in the works is if one is writing a multilingual document.

2) Fix that bug in the Speller that causes it to hang on old words. (The representative indicated that this is a known conflict with PowerPC systems. I tested this package on an Power Macintosh 8100/100AV as well as some Power Computing Systems.)

3) For the Scandinavian spellcheckers, cause words with *aa*, ae, and *oe* to call up *å*, *ä*, and *ö* respectively.

If you love WordPerfect's word processing features, chances are you will buy their Language Modules if you have to do any work in another language. At present, the Language Module is not a reason to pick WordPerfect over another word processor. I would like to see this improve. WordPerfect has taken some of the market away from Microsoft Word simply because of the Word 6 debacle. If they want to keep that market segment and increase it, they should pay more attention to multilingual users.

Update on Novell/Corel transition:

The updated French, Spanish and German Language Modules are included on the CD version of Corel's WordPerfect. Corel offers the latest version of WordPerfect on floppy at a slightly higher cost. You can call the Customer Support number below to order it. For those who already own an version of WordPerfect and have Internet access, you can ftp the French, German and Spanish dictionaries at: ftp.corel.com/WordPerfect/WordPerfect/WPMac/Updates.

At press time, Corel is preparing a release that will include Language Modules for US, British, Australian and Canadian English in addition to French, Spanish and German. They are working on updates for the rest of the 3.0A versions of Language Modules. The 3.0A versions are not currently available for sale because of their incompatibility with PowerPC systems. If you have an older version of WordPerfect and would like to obtain one of the 3.0A versions (which were available in Afrikaans, Swedish, Danish, Norwegian, Swiss German, French Canadian and Italian), call the Customer Support number and they will help you obtain it.

In other multilingual news, they are working on French and Japanese localizations of their product.

System Requirements:
Same as those for WordPerfect
WordPerfect 3 and above (some slight problems on Power Macs)
1.3 MB of hard drive space

Corel WordPerfect
1555 N. Technology Way
Orem, UT 84057
(801) 222-4200
(800) 77-COREL For orders
(801) 765-4020 Customer Support

Tools and Tricks

Review of *The Nisus Way*, by Joe Kissell

by C. R. Clowery

"When You've Got the Tool, You Don't Need a Trick"

A savvy elder garage mechanic in Arroyo Grande reached into a dusty bin in the cobwebbed corner of his shop. He extracted a metal gadget, and with a "Yep!" popped the wheel off my '56 Plymouth station wagon. "Hey, that's some trick!" I commented, having tried with no luck to remove the wheel. "No, young fella, it's not a trick, its a tool. When you've got the tool, you don't need a trick," he replied.

You have to know the difference between tools and tricks in the computer world as well. In *The Nisus Way,* Joe Kissell teaches how to use Nisus Writer, the "Swiss Army knife of word processors." Nisus Writer has tools aplenty, and Joe teaches us each of their uses. I always mistrusted magazine articles that promised to share "secrets, tips and tricks!" Why should a computer be designed on purpose to work in ways that are not apparent to normal intelligence? That was the reality, nonetheless, when I worked with DOS and Windows platforms. In order to keep the computer running, I had to pay an expert to reveal privileged knowledge, or have the phone number of a tech-buddy close at hand. I needed secret tricks to use the tools.

In Arroyo Grande, I couldn't fix my own faulty brakes. My car was grounded and my journey stopped. The veteran mechanic, with his old wheel puller tool, turned a frustrating obstacle into a piece of cake. Likewise, Joe Kissell's *The Nisus Way* embodies the same liberating spirit: "Work with this power tool, get your work done faster, easier, and more elegantly."

Joe Kissell is a computer geek by his own definition–"one who can accomplish a great deal, elegantly, with limited resources." He is Project Manager at Nisus, which means that given marketing constraints, he decides the shape of the program, what new features get in, and its future direction. *The Nisus Way* opens with a brief history and the philosophy of the program, and describes its head and its heart. On Joe's personal web-page <kissell@computergeeks.com> his "favorite books list" reveals a love for philosophy and the higher mind. Joe reads Schopenhauer and Nietzsche; he thinks like a philosopher and writes like a historian. This has shaped the thrust of the book.

Nisus's horizons open into a wider world with its two-byte language capacity. I can add Chinese, Japanese, and Korean characters, which come in the thousands, as easily as the 256 English alphabet font symbols.

The Nisus Philosophy: A Forge for Idea-Hammering

'Chapter One' welcomes us, 'Chapter Two' gives us the philosophy behind Nisus Writer, and 'Chapter Three' builds bridges to Nisus from other word processors. I converted to Nisus from Microsoft Word, which I had learned to put up with. For people like me, Joe assumes correctly that if chapters one and two have done their job; most readers will find sufficient reason to drop Word or Works and pick up Nisus Writer. For writers, tools can become obsessions. Pencils, typewriters, word processors can be adversaries, time-sinks and obstacles to thought. They can also become precise tools that turn transparent in the forge of text creation; hammering the mind's ideas into shape.

Nisus Writer is a word-shop for writers, an anvil for pounding text. There are built-in Nisus functions to make my work faster and easier. These functions require a bit of technique, like any tool, but they are available knowledge, not *secrets*. There are power tools that let me perform marvelous tricks. Call the training a steep learning curve? Well, perhaps, but *The Nisus Way* contains Joe's advice, which makes clear the thinking behind the "hot tips" he supplies.

Based on its philosophy, Nisus offers the writer functions I never imagined possible during my love-hate relationship with Word 5.1. Since switching to Nisus Writer I have come to expect more from a word processor. For instance, *The Nisus Way* devotes a chapter to the uses of WorldScript, the MacOS's foreign language system. Nisus's horizons open into a wider world with its two-byte language capacity. I can add Chinese, Japanese, and Korean characters, which come in the thousands, as easily as the 256 English alphabet font symbols. Nisus Software implements this technology so well that the

company's revenues come more from its sales in Korea, Japan, and Europe than in English-speaking countries. At one point, Nisus was bundled with every Mac sold in Korea. The next release of NisusWriter will offer vertical-running text for Chinese, Japanese, and Korean.

Another clever feature:

Six years ago I saw a Nisus brochure with a demonstration document. The feature that first caught my eye was a box of large-point-size text written vertically, at 90 degrees and written on top of the horizontal text, with the rest of the paragraph flowing smoothly around it. The ability to integrate graphics and text right in the same window was unique back in 1990, and some processors haven't caught up yet.

Another:

Some will recall that Microsoft Word 4.0 introduced a more robust find and replace; it looked a lot like Nisus's legendary find/replace function, but the Word version was a pale copy. Nisus's find/replace has three modes and allows you to find anything and replace it with anything, including searching words, or styles, or numbers, even in unopened files. In general, Nisus offers intelligent solutions to real needs, and I can customize the tools in a variety of ways to my taste. I am not forced to process words the way a Microsoft marketing rep calculated would improve the company's bottom line.

Net-heads, Teachers and the Disorganized

In the last chapters *The Nisus Way* moves beyond a computer reference. Joe addresses 'net-heads, teachers, and the disorganized. I confess I turned to the last chapter, called "Organizing Your Life With Nisus Writer," first. Here Joe tells about a Mac temp agency owner he met who runs her business without benefit of any PIMs or time-keeper software. She simply keeps a big Word file with all her clients' and employees' addresses, phone numbers, contact records and inventories, waiting to be called up with the Find command. This woman exemplifies Joe's definition of a true computer geek. He adds, "If you try this in a huge Nisus Writer file, be sure to use Nisus Writer's autosave feature, back it up and then keep multiple copies of the backups on separate volumes."

The next release of NisusWriter will offer vertical-running text for Chinese, Japanese, and Korean.

Talking to language teachers, Joe describes how to make interactive instructional materials with hypertext. He gives ideas for creating lesson plans, grade books, and quizzes in Nisus Writer. For instance, using Nisus's sound abilities, a vocabulary exercise can include the instructors voice followed by a macro that records the student's attempt to match correct pronunciation.

Using Nisus's sound abilities, a vocabulary exercise can include the instructors voice followed by a macro that records the student's attempt to match correct pronunciation.

Joe Kissell's nickname around the company is "Net Wizard." Nisus Writer's HTML macros have earned praise from the Internet press. Using Nisus Writer, Nisus email filing and search utility, and Apple's Power Talk and MailKeeper, Joe tells us how to make the World Wide Web bark, fetch and roll over.

Muchos Macros Calientes

The Nisus Way takes us through the fundamentals of text editing, then beyond words to pictures and sounds. I have come to depend on the Nisus Sound layer to read my text back to me as I proof it.

Then we come to the section on "power techniques." 'Chapter Twelve' introduces us to Nisus Writer's most powerful, yet least understood, feature. Joe's techniques usually involve macros. Macros, a word that appears often in *The Nisus Way*. The name sounds like a Mexican food dish, (*¡huevos macros rancheros! ¡macros refritos!*) and just as salsa spices food, macros motivate text.

Macros represent a root computing metaphor: a way to do your work in less time with less effort, saving keystrokes and automating repetitive tasks. Macros make little machines, tiny code-engines that do big jobs. I was a disbeliever at first. I assumed that to create a macro one had to be a programmer. My answer to automating my work was to buy QuicKeys, which was already difficult enough for the logically-challenged.

Despite my good intentions, I didn't find the time to study a thick, daunting "Nisus Macro Language" manual that came with the program . Now after reading Joe Kissell's intriguing explanations, and finding *muchos* ready-made macros on the enclosed CD-ROM, I have started to investigate do-it-yourself macros. Macros are like the Rube Goldberg drawings of chain-reaction gadgets: you hit a simple key combination and bells chime, whistles whistle, and the duck comes down and gives you five hundred dollars. All this, and you save keystrokes! Macros are cool.

Little-known Facts

- Nisus Writer's creator Jerzy Lewak, a Ph.D. in particle physics, began working on the Apple II in 1983 to design mathematics software for his students at UC San Diego. Nisus products have

Some wit in the peanut gallery joked, "Does Nisus write in Klingon?" Without an instant's pause, Joe double-clicked on one style sheet in the middle of the alphabet. It was "Klingon."

never lost touch with their origins as tools to make a student's task more efficient and more effective. Joe Kissell is a Ph.D. candidate in linguistics who came to Nisus because its flexibility, as well as its philosophy, hooked his imagination.

- Borland, Lotus and Claris all considered acquiring Nisus at one time or another. Had they taken the plunge, it would have paid off. Nisus's unique features: non-contiguous selection, unlimited undos, and ten editable clipboards are still unusual in a word processor.
- Nisus Writer's first incarnation was QUED, "Quality Editor," which became an immediate favorite of code programmers. QUED, and then QUED/M (with macros) was much more powerful than the little text-editing program Edit, which was bundled with the Macintosh in the early days.

Other-world Script

Joe made NisusWriter dance for a recent BMUG Main Meeting on the Berkeley campus. Demonstrating the multi-language capabilities to the BMUG crowd, Joe opened his Nisus Writer "styles" menu; there must have been thirty languages on the list. Some wit in the peanut gallery joked, "Does Nisus write in Klingon?" Without an instant's pause, Joe double-clicked on one style sheet in the middle of the alphabet. It was "Klingon." A deafening, two-minute ovation brought the house down. Joe Kissell had to take a bow.

He announced upcoming features in the next release will include Live Objects (formerly Open Doc), vertical text for Asian languages, and much expanded HTML functions. Happily, Joe reported that NisusWriter 5.0 will finally jettison the hardware lock "language key dongle" on Chinese and Arabic versions.

The book includes a CD-ROM full of software, macros, and advanced features. The CD also contains a self-running Nisus demo, a copy of Nisus Compact, TSM Passport (a Japanese-language dictionary), and a fully functional copy of Nisus Writer that you can keep for 90 days, and then buy at a substantial discount. This is probably the best deal available for getting a discount copy of Nisus Writer.

Joe has shared his knowledge of NisusWriter in a philosopher's voice for all of us. If in future we open *Nisus Thinker Pro 28.0* to chart our mind-write memos, or support inter-galactic languages, The *Nisus Way* may still be expanding the horizons of people who want a unique, empowering, do-it-yourself word processor.

C. R. Clowery bought his first Mac Classic in 1991, and has reviewed Chinese and Japanese language software for the Washington (DC) Apple Pi and the BMUG Newsletter.

The Nisus Way
(ISBN 1-55828-455-9)
MIS Press $29.95

<http://www.computergeeks.com/tnw/nisusway.html>
Joe Kissell
<kissell@computergeeks.com>

The Internet as a Language-Learning and Maintenance Resource

By Megan Lynch

The wonderful thing about the Internet is that it is international. It reaches out to more countries more fully as each day goes by. So even if you can't find anyone to practice your language skills with in your home town, you can find like-minded people on the Internet.

This article started as a mere "hot-list" of language sites on the Web. As I went along, I thought I ought to give tips to other areas of the Internet that I have used to try to maintain and better my language skills. This article assumes familiarity with the Internet. There are plenty of good books on how to use the Internet. My personal recommendation is Adam Engst's Internet Starter Kit published by Hayden Books. You can also consult your fellow BMUGers in the Internet Q/A conference on Planet BMUG and BMUG Boston. If you happen to be in the San Francisco Bay Area, you can attend BMUG's Internet SIG and learn about the Internet there.

Many descriptions contained herein are those of the webmasters, list owners and channel operators of the various resources. I tried to set off their words with quotation marks where possible.

Language Sites on the World Wide Web

Various Languages

International Macintosh User Group-"IMUG is a group of users and designers of multilingual computer systems, located in Silicon Valley. Our members are translators, software engineers, product managers, localizers, or come from other professions where they need to use computers in different human languages. Most of us speak more than one language." <http://www.imug.org>

Mac-FL -The emailing list/webpage for the Mac-using Language Professional <http://members.aol.com/digitalmus/>

Defense Language Institute Foreign Language Center - LingNet Home Page- This site has a telnet link to the DLIFLC's own LingNet BBS, as well as other useful links. <http://lingnet.army.mil/>

Canadian Forces Language School, Ottawa -A bilingual (English/French) site that is chock full of good links. <http://www.ddcei.ndhq.dnd.ca/~provenca/>

Agora Language Marketplace- "An on-line index of companies offering language related publications, products and services. An information source for the foreign language professional" <http://www.agoralang.com/>

Yamada Language Guide- "The Yamada WWW Language Guides are the definitive guide to language resources on the World Wide Web. In the Guides, you will find pointers to WWW sites, links to our Font Archive,links to our annotated list of language related news groups, and links to language related mailing lists." <http://babel.uoregon.edu>/yamada/guides.html>

Foreign Language Teaching Forum-Geared toward foreign language teachers, there are some good links off this site. <http://www.cortland.edu>/www/flteach/welcome.html>x#collections

Human Languages Page- "Welcome to the Human-Languages Page, a comprehensive catalog of language-related Internet resources. Here you will find online language lessons,translating dictionaries, programs to aid you in learning a language, and more." <http://www.willamette.edu>/~tjones/Language-Page.html>

Less Commonly Taught Languages Project- This site is located at the University of Minnesota and is coincidentally webmastered by the developer of MacNorsk. The site has a database of LCT languages and where they are taught, a page of links and information on the six listservs it runs for teachers of LCTLs. <http://carla.acad.umn.edu>/lctl/lctl.html>

Kidlink - A project geared towards getting kids 10-15 to correspond with each other in select languages other than English. They run several e-mailing lists for this age group as well as some for teachers who teach these languages.<http://www.kidlink.org/>

International E-mail Tandem Network- In the International E-Mail-Tandem-Network, universities in many countries work together to enable their students to learn languages in tandem using e-mail. A new European Union Open and Distance Learning project,beginning in September 1996, will open the International E-Mail Tandem Network also to all learners outside the universities. <http://tandem.uni-trier.de/Tandem/email/infen.html>

U. of Utah Languages and Lit Dept. Easy IRC- You can telnet to various IRC channels (mostly Romance languages) from this page. This is good if your ISP doesn't have an IRC client. <http://italia.hum.utah.edu>/doc/irc.html>

The Lowest Protocol- A labor of love, this page compiles links about various writing systems, including synthetic ones like Klingon. A useful site for people studying languages that don't use the Roman writing system. <http://www.geocities.com/Tokyo/1763/>

LingWhat? - Allows you to determine the language of a publication by answering a questionnaire about it <http://idris.com/lingwhat/lingwhat.html>

EthnologueA database of information about the world's languages (eg. how many speakers, dialects, what family...) <http://www.sil.org/ethnologue/ethnologue.html>

The Virtual CALL Library- CALL stands for Computer Assisted Language Learning. It has links to shareware and freeware for CALL available on the 'Net. If you download something and use it, consider writing a review of it for the BMUG Newsletter. <http://www.sussex.ac.uk/langc/CALL.html>

WWW Foreign Language Resources Page- A good "links" page. The webmaster states that he has focused on quality rather than quantity. <http://www.itp.berkeley.edu>/~thorne/HumanResources.html>

Yahoo's Listing of Linguistics and Human Languages Links A-Go-Go! <http://www.yahoo.com/Social_Science/Linguistics_and_Human_Languages

Universal Survey of Languages- It's a little sparse at the moment but looks promising. Has audio samples on some pages. <http://www.teleport.com/~napoleon/index.html>

Travlang - Another great "links" page. This site is the outgrowth of the old Foreign Languages for Travelers page. In addition to the online lessons that were the forerunner of this site, there are now different travelling and cultural notes. <http://www.travlang.com/>

The Alternative Dictionaries- God bless the Norwegians for this site! We linguists know that slang and "offensive" speech is often the most revealing of cultural differences, yet the student is rarely exposed to this side of language. That can often result in embarrassing gaffes when one tries to practice the language while visiting the country. Take this site with a grain of salt. It is a collaborative effort, meaning that websurfers submit their own additions in content. Therefore, some of the words may be made up. The webmaster makes an effort to check all contributions for accuracy, but caveat emptor. <http://www.notam.uio.no/~hcholm/altlang/>

Katherine Munro's Page For Teaching and Learning German and Indonesian -What a combo! She also has a multlingual search engine page. <http://www.gil.com.au/~kmunro>

Radio Netherlands Home Page- News Broadcasts can be listened to with RealAudio. They have pages in Dutch, English, Spanish, Indonesian, and Portuguese. Good practice in listening comprehension. <http://www.rnw.nl/rnw/>

Yahoo's Radio International List -Some of these links won't have audio, but most of them do. There are an incredible amount of radio broadcasts in various languages being broadcast live or slightly delayed. <http://www.yahoo.com/Business_and_Economy/Companies/Media/Radio/Stations/Countries/>

Kiosken (The Newsstand)- A Swedish site that has links to online newpapers from many different countries. If you can't read Swedish, it's no real handicap. Just click on the name of the country whose language you are studying. <http://www.esperanto.se/kiosk/starto.html>

West Asian

BYU Dept. of Asian and Near Eastern Studies Arabic Software for the Macintosh <http://humanities.byu.edu>/AsiaNE/Arabic/macsoft.html>

Virtual Arabic Lab - Part of the Virtual Media Lab project at the University of Pennsylvania. This site is info-packed! <http://philae.sas.upenn.edu>/Arabic/arabtapes.html>

The Arabic Macintosh- Another Mac-specific language site. Way to go! <http://www.hf-fak.uib.no/Institutter/smi/ksv/arabhome.html>

East Asian

Mac Chinese Computing Page- Pinghua reviewed the Apple Chinese Language Kit in our Fall 1996 BMUG Newsletter and runs this highly informative site. <http://www.jnw.com/pinghua/ccompute/mac/index.html>

Chinese Learner's Alternative Page- Sponsored by Sinologic, the makers of HyperChina. I include this page not as free advertising, but because it includes breaking Mandarin slang and culture notes. <http://www.sinologic.com/clap.html>

Yahoo's Japanese Course Page Links to four sites last I checked... <http://www.yahoo.com/Social_Science/Linguistics_and_Human_Languages/Languages/Japanese/Courses/>

Japan@ University of Tennesee, Martin- This site has business and cultural links as well as language ones. This page is compiled by Yumi Goto and resides on the website of the famous Tennessee Bob! Tennessee Bob is a French Teacher at UTM who is an expert at combing the Web for language resources. <http://fmc.utm.edu>/~rpeckham/JAPAN.htm>

Guide to Japanese Computing- A site that has a lot of information useful to people trying to use Japanese on their computer whether in applications, web-browsing or email. <http://www.uwtc.washington.edu>/Computing/Japanese/JapaneseResources.html>

CALL for Japanese on the MacintoshA site that has online reviews of many of the software packages available for learning Japanese on your Mac. <http://www.sla.purdue.edu>/academic/fll/JapanProj/ACTFLreviews/>

Indonesian Home Page- Lots of information, including a whole page of information on Indonesian language mailing lists. <http://www.umanitoba.ca/indonesian/>

Myanmar Language Page- Information in English on Myanmar/Burmese writing system, links to fonts and information on ordering language aids. <http://triton.ori.u-tokyo.ac.jp/~moe/myanmasa.html>

Tibetan Language Radio- Page that lists shortwave broadcasts made in Tibetan. <http://www.twics.com/~tsgjp/tibrad.html>

WWW Virtual Library - Tibetan Language Collection of Tibetan-language interest link. <http://coombs.anu.edu>.au/WWWVL-TibetanStudies.html#Lang>

South Asian

Saralsoft's Indian Fonts Page- Free demo fonts in Bengali, Gujarati, Hindi, Marathi, Punjabi, Sanskrit and Tamil are available from this page. <http://www.best.com/~saralsof/font_0.htm>

Virtual Hindi Lab - Part of the Virtual Media Lab project at the University of Pennsylvania. This site is info-packed! <http://philae.sas.upenn.edu>/Hindi/h1a.au>

Tamil Lesson Page- You need a free Tamil font which you can order from the page in order to view the lessons. Also: tips on how to configure Netscape for Tamil. <http://www.iupui.edu>/~rravindr/tamil.html>

Africa

The Kamusi Project -A project to produce Swahili dictionaries and other resources. Has a page with good African links. <http://www.cis.yale.edu>/swahili/>

Kiswahili Home Page- Nine lessons in Swahili. <http://conn.me.queensu.ca/kassim/documents/kiswa/swahili.htm>

UPenns' African Language Links- Best page of African language links I've seen besides the Yamada Guide... <http://www.sas.upenn.edu>/African_Studies/About_African/ww_langsofw.html>

Indigenous Languages

Web Archive for Taino-L- Archive for a mailing list on Arawak language and culture. <http://corso.ccsu.ctstateu.edu>/archives/taino

Australian Indigenous Languages Resources -A short hotlist. <http://www.aiatsis.gov.au/lgs_rsc.htm>

Andean Bookmark Page- Russ and Ada Gibbons' site has bookmarks for various indigenous languages as well as Spanish. It also has cultural links. <http://www.best.com/~gibbons/bookmark.html>

Quechua Lessons- Three online Quechua lessons. <http://www.cs.brandeis.edu>/~barry/Quechua.html>

Celtic Languages

Gaelic and Gaelic Culture Page <http://sunsite.unc.edu>/gaelic/gaelic.html>

Gaelic Language Software- Links to Gaelic software sources. <http://futon.sfsu.edu>/~jtm/Gaelic/comp.html>

Manx - Manx is the language originally spoken by the inhabitants of the Isle of Man. It is still spoken to some extent. <http://homepages.enterprise.net/kelly

Nordic Languages

A Course in Swedish Cursing- A favorite page on the web, even for people who aren't studying Swedish. This site was created by a Swedish couple who emigrated to the Netherlands. It's a trilingual site with Swedish sound files featuring the dulcet-toned Mrs. Santesson! <http://www.bart.nl/~sante/enginvek.html>

Falske Vänner i Nederlandska- Another winner from the Santessons. This is a page of false cognates in Dutch that are likely to fool native Swedish-speakers. <http://www.bart.nl/~sante/svefalsk.html>

Stoppa Svengelska! (Stop Swinglish!)-I wish there were websites like this for other languages. The aim of this website is to point out errors in Swedish that are unique to English-speakers. One can have a perfect accent and a wonderful vocabulary and still sound like a foreigner... <http://www.xmission.com/~gastown/nisus/usage.html>

kulturCHOCK's Dictionary of Swedish Idioms- A pretty hilarious site that solicits Swede-savvy surfers' literal English translations of Swedish idioms. As they are submitted by just plain folks, some are to be taken with a grain of salt. <http://www.webcom.com/eha/idiom.html>

Skånska Ordlista- Skånska is Sweden's version of "Y'all speak". It is the butt of many jokes in Sweden. Here is a dictionary that deals with the major differences between Swedish and Skånska. <http://www.student.lu.se/~Cie89blg/ordlista.htm>

Eastern Europe

Russification of the Macintosh- Just what I like to see in a language page: a focus on the Macintosh! Matvey tells you how to display Russian on your Macintosh, even while browsing the Web. <http://www.pitt.edu>/~mapst57/rus/russian.html>

Hungarian Language Course- Lessons online and links. <http://www.sas.upenn.edu>/~arubin/hungarian.html>

Hollosi Information eXchange -HIX is a 6 year old site that claims to be the oldest and largest site for Hungarian information on the Internet. It is certainly an information-rich site that archives the many mailing lists that originate from HIX as well as newgroups and an interactive chat via telnet. <http://hix.mit.edu>/>

All About Bulgaria- Mostly cultural links, but includes a link to a Bulgarian poetry archive where you can practice your reading skills in both Roman characters and Cyrillic. The site is run by the gentleman who runs the BG-Ling mailing list. <http://www.cs.columbia.edu>/~radev/bulgaria/>

Southeastern Europe

Learn Greek Through the Internet- <http://www.isr.umd.edu>/~kanlis/Greek/>

Hellas Home Page- Has many useful links to Greek culture, news and fonts <http://velox.stanford.edu>/hellas/root.html>

Romance Languages

Italian Lessons- Provided by Lucio Chiappetti<http://www.willamette.edu>/~tjones/languages/Italian/Italian-lesson.html>

Learn to Speak Italian- A little more fancy. <http://www.eat.com/learn-italian/index.html>

Italia Page- It's in Italian, but it has lots of language and cultural links. <http://italia.hum.utah.edu>/>

Spanish Lessons (Mexican Spanish)- Provided by Tyler Jones. <http://www.willamette.edu>/~tjones/Spanish/Spanish-main.html>

Almogaver - The Mediterranean Magazine- This Barcelonan magazine is written in Catalan. There is also a link on the site to be able to read it in Castillian Spanish. <http://www.rednsi.com/almogaver>

Tennesee Bob's Famous French Links- Need we say more? <http://www.utm.edu>/departments/french/french.html>

Occitan List Page- Web page for the Occitan mailing list. A knowledge of French is required. <http://www.univ-rennes1.fr/LISTES/list-oc@cict.fr/>
For English-speakers, try:
<http://www.efrei.fr/~gentil/oc/oceng.html>

Sign Language

A Basic Dictionary of ASL Terms- Verbal descriptions of how to make various ASL signs. Think of it as "My first 200 words in ASL". <http://home.earthlink.net/~masterstek/ASLDict.html>

Alysse's ASL Page- An ASL teacher's page full of links to language helpers, activities, texts and other web pages on Deaf culture.
<http://members.aol.com/alysser/aslpgs.htm>

Deaf World Web- Has links to pages on international sign languages. <http://deafworldweb.org/dww/>

Russian Sign Language Project- Finally! An intelligent use of animation on a webpage!
<http://weber.u.washington.edu>/~jkautz/>

Japanese Sign Language- by Karen Nakamura.
<http://pantheon.yale.edu>/~nakamura/jsl.html>

Non-U.S. Search Engines

Like most of you, I tend to use Yahoo!, Alta Vista, Lycos and other U.S.-based search engines. However, when you are looking for something in another language, you might hit more paydirt by trying a search engine based in another country. You usually need to have an intermediate grasp of the target language to use this method. Here's a few:

The Virtual Tourist I- Allows you to find search engines in different countries by selecting them from a map.<http://www.vtourist.com/webmap/>

Ananzi - A search engine for South Africa in the English language<http://www.ananzi.co.za/>

PowerMedia's Entry Point for UK/European Search Engines - Samples search engines that concentrate on European and UK content. Many of the sites are multilingual. <http://www.demon.co.uk/pml/netsearch/uk-europe.html>

Il Ragno Italiano (The Italian Spider)- An Italian/English language search engine located in Italy.
<http://ragno.ats.it/indexuk.html>

Yaih?- <http://www.ci.rnp.br/si/>
A site in Brazilian Portuguese that searches Brazil and Latin America

Hola - A collaboration between Open Text and AT&T, this site searches in Spanish, Portuguese and English with a focus on Spanish and Portuguese webpages.
<http://www.atthola.com>

Dondé? - Search engine for Spain and its possessions.
<http://donde.uji.es/>

Lokace - A Francophone search engine. <http://lokace.iplus.fr/>

Swiss Search - Quadrilingual site to search Switzerland.
<http://www.search.ch

Crawler.de- A search engine for German sites.<http://www.crawler.de/>

DINO-Online- A search engine for German sites.
<http://www.dino-online.de/>

Lycos.de - German version of Lycos search engine.
<http://www.lycos.de/>

SearchNL - A Dutch/English-language search engine limited to Dutch cyberspace. <http://www.Search.NL/>

Absolutt Internett- A site that combines 3 Norwegian search engines with one each from Sweden, Denmark and Finland. Most have an English-language option.
<http://www.sol.no/sws/absolutt.html>

Lycos Sweden - Swedish version of Lycos search engine. You can search Sweden only or the entire Internet.
<http://www.lycos.se/>

ZZZ Search - Search in Estonian or English. <http://www.zzz.ee/otsi/>

Cynet - A Malaysian search engine in the English language. <http://search.cynet.com.my/>

G-Spot - An English-language search engine in the Philippines <http://www.gsilink.com/gspot>

Surfer's Edge - An English-language search engine in Singapore. <http://surfers.edge.com.sg/>

Channel Hong Kong- HK search engine. English language. <http://www.chkg.com/CT/CTINDEX.EXE>

Simmany - A Korean-language search engine. You must have your browser configured to read Korean! <http://simmany.hnc.net/>

Wakano - A Korean-language search engine. You must have your browser configured to read Korean!
<http://www.keimyung.ac.kr/wakano/>

Japanese Open Text-A Japanese-language search engine. You must have your browser configured to read Japanese! <http://japan.index.opentext.net/>

Yahoo! Japan - A Japanese-language search engine. You must have your browser configured to read Japanese! <http://www.yahoo.co.jp>

Mailing Lists for Languages

For those of you who have email-only accounts (not including Planet BMUG or BMUG Boston accounts), you may have to miss the richness of the Web, but you can still participate in email lists for people interested in particular languages.

Email lists are definitely good places for you to practice your "netiquette". Read up on good list manners in Adam Engst's *Internet Starter Kit* or go to the library and look up articles on netiquette. If you have web access, check out:

<http://ifrit.web.aol.com/mld/production/>
for information on different types of lists and rules of comportment

<http://www.fau.edu>/rinaldi/netiquette.html>
Arlene H. Rinaldi's Netiquette Guide

<http://www.freenet.hamilton.on.ca/Help/FAQ/EmilyPostNews.html>
Emily Postnews tells you the Do's and Don'ts

Otherwise, politely ask the listowner (at their administration address, NOT the list address) for a set of list rules and manners. Once you have subscribed, *save* the welcome message you get because it will contain the commands for unsubscribing and other issues of importance.

Many of these lists are not *specifically* for language study. However, I have found that if one is polite and "lurks" for a couple weeks before opening one's mouth that it often doesn't matter. The key thing is to *think* before you hit the "Send" key. What you send to the list gets sent to hundreds of people, some of whom have to pay for each piece of email they receive. Don't send garbage their way and don't say anything you will regret. You can pick up a great deal of language tips from a predominantly English language list that focuses on a country's culture or from a list that focuses on computing, but takes place in the target language.

Mailing lists are ephemeral things because the listowner gets burned out from all the work that it involves. There was not enough time before we went to press for me to verify all these lists. If you aren't having luck with the procedures mentioned here, use a good, thorough search engine such as Lycos or Alta Vista to search on the list name. It could be that the list moved or that it doesn't exist anymore.

Note: Unless otherwise noted, you can subscribe to the mailing lists below by sending the message:

Subscribe <listname> <Firstname> <Lastname>

e.g., subscribe langlist Megan Lynch

Mac-FL - "You can have a free email subscription to the Mac-FL newsletter. It contains the text of this web page (<http://members.aol.com/digitalmus/index.html>), but without the screenshots, hypertext links and demo pages. I'd **prefer** you just view each issue here on the web page, but if you wish to email me I will add you to the list." digitalmus@aol.com (Gary Dauphin)

KIDLINK - "KIDS-96[sm] is a grassroots project aimed at getting as many children in the age group 10 -15 as possible involved in a GLOBAL dialog. KIDLINK[sm] is the name of the organization that runs the yearly KIDS-nn projects. The KIDS-97 project will run from May 5, 1996, until May 3, 1997. Then the KIDS-98 project will start. Since the start in 1990, around 60,000 kids from 87 countries on all continents have participated in our activities."

The kids are required to fill out a 4 question survey before joining any of the KIDLINK lists.

Question #1: Who Am I?

In English:

What is your full name? How old are you? Are you a boy or a girl? Where do you live (city, country)? What is the name of your school?

The rest in English, or in your native language:

Say a little more about yourself. What are some of your interests, your hobbies, your concerns? What else do you want others to know about yourself?

Question #2: What Do I Want To Be When I Grow Up?

Share your vision of what you want to be when you grow up in terms of work, education, and in general.

Question #3: How Do I Want The World To Be Better When I Grow Up?

How would you like to improve the way we treat each other and the environment we share?

Question #4: What Can I Do Now To Make This Happen?

What steps can you take now to realize your personal goals and your vision of the world?

They can answer these questions at <http://www.kidlink.org/RESPONSE/ if they have web access, or they can answer them through email by addressing: RESPONSE@VM1.NODAK.edu>

"Teachers, please take a look at our general information file. To get it, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

GET KIDLINK.GENERAL

Information is also available on the web at:<http://www.kidlink.org>"

KIDCAFE Dialog in Japanese (age 10-15)

To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDCAFE-JAPANESE

KIDLINK For Adult Leaders in Japanese -This list is for teachers of Japanese with students participating in KIDLINK To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDLEADER-JAPANESE

KidCafe Nordic - Dialog in Nordic Languages (age 10-15) To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDCAFE-NORDIC

KIDLINK For Adult Leaders in Nordic Languages - This list is for teachers of Nordic languages with students participating in KIDLINK To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDLEADER-NORDIC

KIDCAFE Dialog in Portuguese (age 10-15) To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDCAFE-PORTUGUESE

KIDLINK For Adult Leaders in Portuguese -This list is for teachers of Portuguese with students participating in KIDLINK. To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDLEADER-PORTUGUESE

KIDCAFE Dialog in Spanish (age 10-15) To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDCAFE-SPANISH

KIDLINK For Adult Leaders in Spanish -This list is for teachers of Spanish with students participating in KIDLINK. To subscribe, send mail to <LISTSERV@LISTSERV.NODAK.edu> with the command :

SUBSCRIBE KIDLEADER-SPANISH

Indigenous Languages

Arawak

Taino-L - "A forum for a discussion of the shared concerns of members of the Taino nation and other Arawak-speaking peoples from the Caribbean, U.S. and South America; and seeks to promote an awareness of the Taino people and the preservation of their culture. Use of an Arawak language as well as Spanish and English is encouraged." For more information, contact the list owner at: brownh@ccsu.ctstateu.edu> (Haines Brown) To subscribe, send email to <majordomo@corso.ccsu.ctstateu.edu>

NAT-LANG - Languages of Aboriginal Peoples

For more information, contact the list owner at: NAT-LANG-request@tamvm1.tamu.edu> or

For questions, contact: <gst@gnosys.svle.ma.us> (Gary S. Trujillo) To subscribe, send mail to LISTSERV@tamvm1.tamu.edu>

IROQUOIS - For more information, contact the list owner at: IROQUOIS-request@vm.utcs.utoronto.ca or

For questions, contact: <cdyck@epas.utoronto.ca (Carrie Dyck)> To subscribe, send mail to <LISTSERV@vm.utcs.utoronto.ca>

NAHUAT-L - "Aztec language & culture, in English & Spanish. Postings in Nahuatl encouraged."

<nahuat-request@faucc.fau.edu>

<nahuat-request@fauvaxf.bitnet>

For questions, contact: <schwallr@acc.fau.edu> or <schwallr@fauvaxf.bitnet> (J. F. Schwaller), or <kennedy@acc.fau.edu> or <kennedy@fauvaxf.bitnet>(W. J. Kennedy)

Africa

AMAZIGH-NET - "Amazigh-Net is a forum for discussions on any issue related to the Amazigh language, history, and culture. The goals of Amazigh-Net is to promote and preserve the Amazigh culture and language. It is hoped that this network will serve as a factor in order to create a constant and cohesive effort towards giving Tamazight and the Amazigh culture the international status they deserve.

Membership to Amazigh-Net is open to everyone who agrees with stated goals. A self-introduction, including the full name, the country of origin, how the prospective member heard about Amazigh-Net, and his/her goal(s) for joining, is *required*. Questioning the personalities, characters, and integrity of the netters is NOT the goal of Amazigh-Net. Some netters are members because they are linguists, or researchers in the field. Their genuine interest in the language and culture makes them eligible too.

It is not the responsibility of Amazigh-Net or its caretakers to impose any rules or standards on the members of the net on how they can promote the Amazigh culture."- Yazid Djerbib, on behalf of the Amazigh-Net Committee.

Guidelines on list rules are available at: <http://www.tulane.edu>/~meche/gs/azul/guidelines.html>

"Please fill out [the form on the above webpage or answer the above questions about yourself] and send it to Amazigh-Net@mail.msen.com The atmosphere on the net is quite friendly, so this is the only regulation for now. Once you have introduced yourself, your e-mail address will be added to the list, and a formal welcome message will be sent to you."

SWAHILI-L - "Any topic, but must be in Swahili." For questions, contact: <kuntz@macc.wisc.edu> (Patricia S. Kuntz)

East Asian

Chinese Studies List- For more information, contact the list owner at: <CHINA-request@PUCC.PRINCETON.edu>. To subscribe, send mail to <LISTSERV@PUCC.PRINCETON.edu>

Chinese-Mac - "The Chinesetalk mailing list is for people interested in using Chinese on their Macintosh computers. The list started two years ago as a way to help people interested in having Chinese on their Macs exchange information with each other.

At that time, it was very difficult to get any information about how to get Chinese on the Mac, even from Apple USA. With the advent of System 7.1 and the Chinese Language Kit, the list serves as a way for people to help each other with bugs and software incompatibilities. The list currently has 200+ people from mostly the US, but it does have members from Australia, Taiwan, Canada, and the United Kingdom (as well as other countries)." For more information, contact the list owner at: <clee@csli.stanford.edu> (Charles Lee) Archive site: <ftp://ftp.yorku.ca/pub/york_other/chinese-mac/>

To subscribe, send mail to <LISTSERV@YORKU.CA>

HANGUL - Korean- "Korean word processing issues; TeX, encoding, fonts, software, file transfer" For more information, mail: <hangul-request@cair.kaist.ac.kr>. For questions, contact:

<ujsung@cair.kaist.ac.kr> or (UnJae Sung)

TIBET-L - Tibet Interest List. For more information, contact the listowner at:

<TIBET-L-request@IUBVM.UCS.INDIANA.edu> To subscribe, send mail to <LISTSERV@IUBVM.UCS.INDIANA.edu>

Burmese Scholars and Students Around The World - "The list is composed of many Burmese around the globe. But I am hesitant to say if the list would be helpful for people who are learning the Burmese language, but you might be able to find a Burmese around your area by posting message of request." The list owner's webpage is: <http://silver.ucs.indiana.edu>/~tmyint/burma.html>

For more information, contact the listowner at: <MAY-KHA-L-request@IUBVM.UCS.INDIANA.edu>. To subscribe, send mail to LISTSERV@IUBVM.UCS.INDIANA.edu>

Nihongo-computing- "An unmoderated, unsponsored list for people who are interested in discussing Japanese-language capabilities on computers, ranging from personal to enterprise systems for a variety of uses. Discussions on L10N (localization) are also welcome. "For more information, contact the listowner at: <nihongo-computing-owner@msdi.co.jp>. To subscribe, send email to: <Majordomo@msdi.co.jp>, and in the body of the message, put

subscribe nihongo-computing

The Gakusei Lists -Japanese Language Student Email Lists- These lists were established in March 1995 to provide a forum for college, university, and independent learners of Japanese to 'talk' informally with other students world-wide in Japanese. Subscribers are asked, therefore, to write all of their messages in Japanese with an occasional English word being acceptable. Subscribers have a choice between e-mail in romanized Japanese or e-mail in Japanese orthography (Kana / Kanji).

A Note on Technological Aspects

If you don't have a computer of your own, it is better to use the romanized (roomaji) lists. However, if you have a computer of your own and you are willing to spend some time and perhaps money to 'Japanize' it, then you should browse the following two web pages:

<http://www.sla.purdue.edu>/academic/fll/JapanProj/>

Why a "Student List"?

There are many discussion lists for students and a handful of lists for those interested in Japanese language or culture. On such lists, subscribers may venture to post messages in Japanese, but this is very rare. And even then messages are academic, formal, and contain complex vocabulary.

Meanwhile, students of Japanese *are* interested in communicating with each other as seen on the Japan channel on Internet Relay Chat (IRC). With the Gakusei Lists, participation can be part of a class project. With the

Gakusei Lists, students will be 'in their element' which should make posting less of a problem. In addition, these lists will provide students the opportunity to interact with their peers around the world, which should make participating interesting, enjoyable, and motivating.

Which List do I Belong To?

These are the general 'levels' for each list:

Gakusei-L first to second year, beginners in roomaji

GakuseiK-L first to second year, beginners in Kana / Kanji

If you can write a few sentences in Japanese and ask one or two questions about yourself and your interests, then this list is for you. [There is an unstated limit of 10 lines per message.]

Gakusei2-L second to third year, mid to high intermediate in roomaji

Gakusei2K-L second to third year, mid to high intermediate in Kana / Kanji

If you can write several short paragraphs, ask questions, use a minimum of keigo in writing about yourself, your interests, your experiences, then this list is for you.

Gakusei3-L fourth year and beyond, advanced speakers

If you can write up to two screens worth, use keigo and a variety of jukugo to talk about social issues, cross-cultural problems, and the like, then this list is for you.

Subscribing to the Lists

Any student (and interested teacher) can subscribe to the list by sending a message to:

<listproc@hawaii.edu>

All new subscribers will be sent a welcome message providing more information about how to participate.

Important: If your e-mail address contains any one of the following: _ * % = + - then it is highly recommended that you contact the List Owner—address at the end of this message—so she can subscribe you herself. Listproc does not readily accept those symbols in e-mail addresses.

BUNPOU-L - Bunpou-L has been created exclusively for subscribers to any of the Gakusei Lists to discuss Japanese grammar in English. After joining the Gakusei Lists, you can subscribe to Bunpou-L by sending e-mail to <listproc@hawaii.edu>

A Note to Teachers: - If you are using e-mail in your Japanese language classes and would like to have your students participate on these lists, then you are also welcome to subscribe. Also, send a message to the list-owner stating that you are a teacher. You will then be subscribed to Sensei-L, a discussion list for teachers who are interested in using the Gakusei Lists in their classes and you will be sent guidelines that will help make your students' participation on the Gakusei Lists a success.

Native Speaker: Please contact the list owner when you subscribe to receive tips on posting messages.

Laura Kimoto, Owner The Gakusei-l Lists. E-Mail: <kimotol@hawaii.edu>

ThaiTeach- The purpose and scope of THAITEACH is to provide an international forum for discussion and dissemination of information concerning the teaching of Thai to non-native speakers, for example, discussion and assessment of audio-visual and written materials for teaching Thai, Thai language programs, etc.

TO SUBSCRIBE Mail to: <majordomo@nectec.or.th>. In the body of the message, type:

subscribe thaiteach your_e-mail_address

KAPAMPANGAN-L- Kapampangan Language and Culture. "Kapampangan is one of the Austronesian languages spoken in the Philippines. The unmistakable similarity of Kapampangan language and culture to that of Java and Sumatra has prompted new research into the ancient links between these groups of people.

The 1993 World Almanac pegged the number of Kapampangan speakers at about 2 million people. This list is a forum for discussing anything related to Kapampangan.If you have any questions about the KAPAMPANGAN-L list, write to the list owners at the generic address:" <KAPAMPANGAN-L-request@HOME.EASE.LSOFT.COM>

To subscribe, send mail to <LISTSERV@home.dc.LSOFT.COM>

ID-JP (Indonesian)- "We use Indonesian and Japanese language. Open to anyone, about any discussion. "For more information, contact the list owner at: <minoru@dokkyomed.ac.jp> (Minoru Yamaguchi). To subscribe, send email to: <listserver@dok07.dokkyomed.ac.jp>

South Asian

INDIA-L - "The INDIA-L list was formed in order to discuss anything that is of interest to people of Indian subcontinent. The list includes distribution of the Usenet Newsgroup 'soc.culture.indian'." For more information, contact the list owner at:

<INDIA-L-REQUEST@UTARLVM1.UTA.edu>. To subscribe, send mail to LISTSERV@UTARLVM1.UTA.edu> with the command:

INDOLOGY - "Sanskrit & adjacent topics. For questions, contact: <ucgadkw@ucl.ac.uk> (Dominik Wujastyk) or <qq43@liverpool.ac.uk> (Chris Wooff)

For more information, contact the list owner at: <INDOLOGY-REQUEST@liverpool.ac.uk>

To subscribe, send mail to <LISTSERV@liverpool.ac.uk>

TELUGU - "Telugu language & culture; not just linguistics." For questions, contact:

<kvrao@andy.bgsu.edu> (K.V. Rao) <seetam@ece7.eng.wayne.edu> (Seetamraju Udaya Bhaskar Sarma)

TAMIL-L - "Tamil studies; not limited to linguistics." To subscribe, send mail to <LISTSERV@DHDURZ1.BITNET>

West Asian

MacTurk - "The list deals with Academic Computing in the Macintosh environment in Turkey (which is derived from the Workshop under the same name, on May 14-16, Istanbul, Bogazici University)." [ed. note - this is not a language list, but might help you in networking with Turkish speakers, esp. if you need help displaying Turkish on your Macintosh]. For more information, contact the list owner at: <MACTURK-Request@VM3090.EGE.edu>.tr (Turgut Kalfaoglu)

To subscribe, send mail to LISTSERV@VM3090.EGE.edu.TR>

HAYASTAN (Armenian)"Not restricted to linguistics; contributions in English & Armenian." For questions, contact: <bmb@think.com> (Bruce Boghosian) <hayastan-request@usc.edu>. TO SUBSCRIBE send mail to: <majordomo@think.com>. In the body of the message, type:

subscribe HAYASTAN your_e-mail_address

HYE-FONT - About Armenian fonts standards & other text processing issues.

<archive-server@sain.org> Subscribe command is JOIN not SUBSCRIBE.

For questions, contact: <system@sain.org> (Roupen Nahabedian)"

CAUCNET - "Informal list for scholars interested in the peoples, cultures, and languages of the Caucasus. Not limited to languages." There is no listserv, submissions are forwarded to the owner who circulates them. For questions, contact: <hia5@midway.uchicago.edu> (Howard I. Aronson)

ITISALAT - "IT IS Arabic Language And Technology. ITISALAT is a moderated discussion to promote contact and stimulate the exchange of information in the field of AC (Arabic computing). ITISALAT subscribers discuss topics ranging from Arabic CL (computational linguistics) and Arabic MT (machine translation) to Arabic OCR(optical character recognition) and Arabic CALL (computer-assisted language learning) . . . and much more!" To subscribe, send mail to <LISTSERV@GUVM.CCF.GEORGETOWN.edu> with the command:

ARABIC-L - "Arabic Linguistics & language teaching." <mailserv@byu.edu>. For questions, contact: <parkinsond@yvax.byu.edu> (Dilworth B. Parkinson) <belnapk@yvax.byu.edu> (Kirk Belnap)

Arabic Script Mailing List- "Discussion in English of Arabic script (Arabic, Farsi, Urdu, etc.) on computers." <iskandar@u.washington.edu> (Alex Khalil) For questions, contact: <iskandar@u.washington.edu> (Alex Khalil) <medawar@poly.edu> (Bassem Medawar)

MIKHTAV - Discussion in Hebrew with Hebrew letters. The MIKHTAV list is intended to be a general discussion place for Israelis and other Hebrew speakers, who wish to write each other in Hebrew, using Hebrew rather than Latin characters. For requirements and methods as well as software (for Macs and PC's), see the associated webpage. The page is at <http://www.hevanet.com/dshivers/mikhtav . *Preparing the softwae is essential, and ironing out difficulties directly wioth the listowners.*

{dshivers@hevanet.com (mac) and gweisz@nilenet.com (pc and unix)} *and not with the entire list will make for a practical, peaceful atmosphere.*

To subscribe, send an email to <listproc@shamash.org> with

subscribe mikhtav in the body of the email.

E-HUG (Electronic Hebrew Users Newsletter) **-** "This list provides for distribution of the Electronic Hebrew Users Newsletter. The newsletter is the successor to the print publication, "Hebrew Users Group Newsletter" which was edited by Jack Love, and emanated from the Berkeley Hillel Foundation through 1989. This incarnation is electronic-only, and is mandated, like the original, to cover all things relating to use of Hebrew, Yiddish, Judesmo, and Aramaic on computers. It is released as time permits and information demands, currently every 1-2 weeks.

This newsletter is dedicated to the proposition that computers, to be useful, must be usable to people working in all languages, at the convenience of those users. In that spirit, it prints all questions pertaining to use of the Hebrew alphabet on computers and answer all that it can. All levels of computer facility discussion are welcome—from new users looking for software or Hebrew-related resources (educational, graphic, or otherwise), to discussions by developers on how the software should work (when it works :-)).It also provides reports on new software (or updates) of interest and to serve as a general news source to the field. Archives are available."

For more information, contact the list owner at:

E-HUG-Request@DARTCMS1.DARTMOUTH.edu> (Ari Davidow)

To subscribe, send mail to <LISTSERV@DARTCMS1.DARTMOUTH.edu>

West European

Basque-L - "The purpose of the list is to provide a forum for the dissemination and exchange of information on Basque culture. A some topics covered by this list include: news from Euskal Herria (Basque Country), international news related to Euskal Herria, politics and socioeconomics, literature and music, and so on. Basque, Spanish, French, and English languages are used, and any other languages are welcome." For more information, contact the list owner at: <BASQUE-L-REQUEST@CUNYVM.CUNY.edu>. To subscribe, send mail to <LISTSERV@CUNYVM.CUNY.edu>

Celtic Languages

WELSH-L - "The WELSH-L bulletin board aims to foster the amicable discussion of questions of the Welsh language, Welsh culture, history, and politics, and to offer a forum for speakers and learners of the Welsh language. Both Welsh and English may be used. Users

are encouraged to exchange their opinions in Welsh, if they can, and special consideration may be given to Welsh learners expressing themselves inWelsh.

The emphasis is on Welsh as a living language, and Welsh culture as actually lived out in Wales at the present day. If there is an interest in expanding the range of topics to include discussion in and about the language and culture of Welsh's close sister languages, Breton and Cornish, WELSH-L will be able to serve as a forum for that as well." For more information, contact the list owner at:

<WELSH-L-REQUEST@IRLEARN.UCD.IE>. To subscribe, send mail to <LISTSERV@IRLEARN.UCD.IE>

GAELIC-L - "A multi-disciplinary discussion list set up to facilitate the exchange of news, views, information in Scottish Gaelic, Irish and Manx. " For more information, contact the list owner at: <GAELIC-L-REQUEST@IRLEARN.UCD.IE>. To subscribe to the list, send email to

<LISTSERV@IRLEARN.UCD.IE>

IRISHSTUDY - "The purpose of the list is to provide structure, resources,and mutual support for self-tutored learners of Irish Gaelic (Gaeilge). It is intended primarily for Celtic Pagans, but all learners are welcome. There are 36 lessons which will be cycled through. The basic mandatory text will be *Learning Irish* by Míchéael O' Siadhail." For more information, contact the list owner at: <IRISHSTUDY-REQUEST@IRLEARN.UCD.IE>. To subscribe, send mail to <LISTSERV@LISTSERV.AOL.COM>

Focail an Lae - The Word of the Day in Irish- "Focail means "words" in Irish. The main purpose of this e-mail list is to distribute "Focail an Lae - The Word of the Day in Irish". This feature is intended to go out approximately five days a week, but there may be gaps in the service, since this is a one-man operation.

Focail-list is not intended to be a forum for broad-ranging discussion of all matters Celtic or linguistic." For more information, contact the list owner at: <donncha@eskimo.com> (Dennis King). To subscribe: send an email to <majordomo@mail.eskimo.com>. In the body of the message type "subscribe focail-list {Your Name} <Your email address>".

Eastern Europe

SEELANGS - (Slavic and Eastern European Languages and Literature List) -For more information, contact the list owner at: <SEELANGS-REQUEST@CUNYVM.CUNY.edu>

To subscribe, send mail to <LISTSERV@CUNYVM.CUNY.edu>

Info-Russ - "Informal communication in Russian-speaking (or having related interests) community." For more information, contact the list owner at: <info-russ@smarty.ece.jhu.edu> (Aleksander Kaplan).

BG-LING (Bulgarian) -"For Bulgarians interested in Linguistics and Natural Language Processing. Interesting announcements related to human languages in general (especially Bulgarian) are also welcome." For more information, contact the list owner at: <radev@cs.columbia.edu> (Dragomir R. Radev). To subscribe, send email to

<majordomo@cs.columbia.edu>

MAKEDON - Macedonian Discussion List. For more information, contact the list owner at:

<MAKEDON-REQUEST@UBVM.CC.BUFFALO.edu>. To subscribe, send mail to <LISTSERV@UBVM.CC.BUFFALO.edu>

ALBANIAN - Discussion is in Albanian and English. More information, including list netiquette, is available at: <http://menger.eecs.stevens-tech.edu>/~cana/albanian.html> or contact the list owner at: <ALBANIAN-REQUEST@UBVM.CC.BUFFALO.edu>. To subscribe, send mail to LISTSERV@UBVM.CC.BUFFALO.edu>

SII - "SII [Serbian Information Initiative] is unmoderated network for distribution of news and discussions about the current events in ex-Yu, centered around those involving or affecting Serbs. SII also originates public actions related to these events, both at home and abroad, and regularly maintains private e-mail connection between Internet and nodes in Serbia and Montenegro. Both English and Serbo-Croatian language are used. Civility in discussions is enforced." For more information, contact the list owner at: <Owner@moumee.calstatela.edu> (Stanislav Markovic)

PISMA-BRALCEV (Slovenian) - "Discussion in Slovenian." <pisma-bralcev@krpan.arnes.si>

<pisma.bralcev@uni-lj.si>. For questions, contact: <andrej.brodnik@ijs.si> (Andrej Brodnik)

<abrodnik@watdragon.uwaterloo.ca>, <andrej.brodnik@uni-lj.si>, <vidmars@refuge.colorado.edu> (Srecko Vidmar)

OGLASNA-DESKA (Slovenian, Serbo-Croatian) **-** "Discussion in Slovene & Serbo-Croatian."

<oglasna-deska@ijs.si>, <oglasna-deska@uni.lj.si>. For questions, contact: <dean@eta.pha.jhu.edu> (Dean Mozetic), <marjeta@midget.towson.edu> (Marjeta Cedilnik)

BOSNET (Slovenian, Serbo-Croatian) - "News & discussion about Bosnia & Hercegovina, in English & 'Bosnian'." For questions, contact: <hozo@math.lsa.umich.edu> (Iztok Hozo)

For more information, contact the list owner at: <BOSNET-REQUEST@math.gmu.edu>

To subscribe, send mail to <LISTSERV@math.gmu.edu>

SLOVAK-L - "News & discussion in English & Slovak." For questions, contact:

<gfrajkor@ccs.carleton.ca> (Jan George Frajkor) <SLOVAK-L-<REQUEST@UBVM.CC.BUFFALO.edu>. To subscribe, send mail to <LISTSERV@UBVM.CC.BUFFALO.edu>

HIX-lists (Hungarian) - There are scads of mailing lists coming out of HIX. Some examples are:

TIPP -misc (anything from atomphysics to history, cooking and cars, etc. It also serves as a ride board!)

GURU -computers; hardware, software

MOKA -jokes (strictly Hungarian)

VITA -debates

MOZAIK -news summary

NARANCS -news related topics

HUNGARY -the only English language forum

KORNYESZ - environment

FORUM -political debates

KULTURA - the arts and entertainment

A helpfile in Hungarian is available by sending an email to: <help@hix.com>. The helpfile will tell you the names of the various lists as well as describe them and how to sub to them.

HUNGARY - "Hungarian discussion and culture; not limited to linguistics. In English and

Hungarian." <listserv@gwuvm.bitnet>. For questions, contact: <agnewhl@gwuvm.bitnet> (Hugh Agnew)

Poland-L for Discussion of Polish Culture- For more information, contact the list owner at:

<POLAND-L-REQUEST@UBVM.CC.BUFFALO.edu>. To subscribe, send mail to LISTSERV@UBVM.CC.BUFFALO.edu>

ELLHNIKA (Greek) - "Modern Greek linguistics & literature; typesetting of Ancient Greek."

<listserv@dhdurz1.bitnet>. For questions, contact: <yannis@frcitl81.bitnet> (Yannis Haralambous) (NB: 'el eight one'). For more information, contact the list owner at:

<ELLHNIKA-REQUEST@dhdurz1.bitnet>. To subscribe, send mail to <LISTSERV@dhdurz1.bitnet>

HELLAS - Greek - "Modern Greek language & literature". <listserv@uga.bitnet>, <listserv@uga.cc.uga.edu>, <listserv@psuvm.bitnet, <listserv@psuvm.psu.edu>

For questions, contact: <sliolis@utcvm.bitnet> (Spyros Liolis), <sda106@psuvm.bitnet> (Spyros Antoniou), <george@pop.psu.edu> (Nikos George), <nxg6@psuvm.bitnet> (Nikos George)

Romance Languages

LATIN-L - "A forum for people interested in classical Latin, medieval Latin,Neo-Latin — the languages of choice are Latin (of course) and whatever vulgar languages you feel comfortable using. Please be prepared to translate on request. The field is open — name your topic!" For more information, contact the list owner at: <LATIN-L-REQUEST@@PSUVM.PSU.edu>. To subscribe, send mail to <LISTSERV@PSUVM.PSU.edu>

LEXI - "List for the discussion of Greek and Latin Language and Lexicography." If you would like to be a part of this distribution list, please send an e-mail message to: <listserv@uci.edu>

Romanians- "Mailing list for discussion, news, and information in the Romanian language."

For more information, contact the list owner at: <ROMANIANS-REQUEST@SEP.STANFORD.edu>. To subscribe, send mail to <LISTSERV@SEP.STANFORD.edu>

FrenchTalk - "The frenchtalk mailing list is available for all French expatriates around the world. Discussion topics are free and unmoderated but should relate to French culture and the problems encountered while in exile." For more information, contact the list owner at: <krus@limsi.fr>. Also, <http:/www.limsi.fr/~krus/frenchtalk.html>. To subscribe, send email to

<listproc@cren.org>

Jasette - "Jasette is a discussion forum in French for students of French and their teachers. The only rule is that everything be written in French. Some students are very elementary, a few advanced. We don't correct them. The idea is for them to express themselves in French." For more information, contact the list owner at: <JASETTE-REQUEST@istes.ulaval.ca>. To subscribe, send mail to <LISTSERV@istes.ulaval.ca>

LIST-OC - Conversation is presumably in either Occitan or French. For more information, contact the list owner at: <LIST-OC-REQUEST@CICT.FR>. To subscribe, send email to: <LISTSERV@CICT.FR>, and in the body of the message, write:

SUBSCRIBE list-oc First name Name Institution

Catala - A list for discussion of matters of interest to Catalan-speakers. For more information, contact the list owner at: <CATALA-REQUEST@ALIGA.CESCA.ES>. To subscribe, send mail to <LISTSERV@ALIGA.CESCA.ES>

ESPORA-L - A forum for debate, discussion, and the exchange of information by students and scholars of the history of the Iberian Peninsula from the earliest times to the present. Although the command language of ESPORA-L is English, postings in Portuguese, Spanish, and Catalan are welcome, and list members are encouraged to communicate in whichever language they are most comfortable. For more information, contact the list owner at: <ESPORA-L-REQUEST@UKANVM.CC.UKANS.edu>. To subscribe, send mail to LISTSERV@UKANVM.CC.UKANS.edu>

Argentina - "Mailing list for general discussion and information. By joining you can learn about how to make those patties (empanadas) that you miss so much, you can discuss on how to 'cebar un buen mate', and of course, on how to solve Argentina's most outstanding problems. We don't have a regular news service yet, but some members send every now and then a briefing.

Spanish language." To join send name, e-mail, phone number, address, and topics of interest to the list owner (Carlos G. Mendioroz) at: <argentina-request@ois.db.toronto.edu>

SEFARAD - Sephardic studies- "Sefarad, a Sephardic monthly newsletter in English & Judeo-Spanish." For questions, contact: <mskerem@pluto.cc.huji.ac.il> (Yitzchak Kerem), <warren@itexjct.jct.ac.il> (Warren Burstein) <goodblat@israel.nysernet.org> (Avrum Goodblatt)

EC-CHARLA - "Most (if not all) messages are in spanish, but everybody is welcome to listen in. The list is intended to serve as a mean of communication for all the Ecuadorians and people related to Ecuador in one way or another throughout the world. Interesting debates and discussions are very common." To subscribe, send email to <LISTPROC@LAC.NET>

CHIAPAS-L - An open, unmoderated discussion list concerning the the conflict in the state of Chiapas, Mexico and its ongoing status. New papers on the subject are welcome. Press releases are also covered. The list language is primarily Spanish but English is accepted too." To subscribe, send e-mail to: <listproc@listas.unam.mx>

CUBA-L - For discussions in Spanish and English of Cuba today.For more information, contact the list owner at: <CUBA-L-REQUEST@UNMVMA.UNM.edu>. To subscribe, send mail to <LISTSERV@UNMVMA.UNM.edu>

Uruguay- "A mailing list for general discussions and information. Spanish is the dominant language in this group." To subscribe, please send name, e-mail, topics of interest, and (optionally), address and phone number to the list owner (Raul Polakof) at:

<uruguay-request@eniac.seas.upenn.edu>

Baltic Languages

LITHCHAT - Lithuanian Discussion List. For more information, contact the list owner at:

<LITHCHAT-REQUEST@LISTSERV.UIC.edu>. To subscribe, send mail to: <LISTSERV@LISTSERV.UIC.edu>

BALT-L - "BALT-L is an online forum devoted to communications to and about the Baltic Republics of Lithuania, Latvia and Estonia. Subscription to this list is welcomed from anyone with skills or interests relevant to the Baltics, or who just wants to know whats going on. All languages of communication are welcome: but especially in Lithuanian, Latvian or Estonian." For more information, contact the list owner at: <BALT-L-REQUEST@UBVM.CC.BUFFALO.edu>. To subscribe, send email to: <LISTSERV@UBVM.CC.BUFFALO.edu>

E-List - "A news and discussion list for Estonia-related matters. Primary readership are the Estonians abroad and in home. Estonian and English (sometimes German or Finnish also) languages are used. No strict distinction based on language is made (only-English version is not available). But people might find useful messages in English also." For more information, contact the list owner at: <Jaak.Vilo@cs.Helsinki.FI> (Jaak Vilo)

Nordic Languages

dansk-request(Danish Discussions) - "A discussion list for Danes abroad, mostly in Danish. Information asked and given by Danes from all over the world,including Denmark itself. It is not an automatic list server." For more information, contact the list owner at: <dansk-request@sysadmin.com> (Freddy Jensen)

NORWEAVE - "Building on the NORWAVES success, NKI has now established NORWEAVE, an additional e-mail service for Norwegians and friends of Norway. The aim of NORWEAVE is to weave a network of people in Norway and abroad who can help eachother exchange information and establish contacts across geographical boundaries. NORWEAVE is a free service available to all friends of Norway." For more information, contact the list owner at:

<NORWEAVE-REQUEST@NKI.NO> To subscribe, send email to: <LISTSERV@NKI.NO>

SWEDE-L - "Swede-L is a mailing list for people of all cultures and backgrounds that share an interest for Sweden. The topics discussed are very broad, but usually have something directly to do with Sweden, Swedes in America, Swedish food (where to buy and/or how to make it), Swedish culture and how it differs from others - only to mention a few. (Although most discussion is in English, some posts are in Swedish. It's a good place to start learning Swedish and making contacts.)" The list has an informal web page at: <http://apollo.ahabs.wisc.edu>/Individuals/Students/Lundberg/SWEb.html>. To subscribe to Swede-L send mail to: <LISTPROC@U.WASHINGTON.edu> :

Swedish-Studies-Net- "This list has been established to facilitate discussion about issues regarding teaching about Sweden and the Swedish language at any academic level. Topics of interest include Swedish society, literature, culture, language instruction, linguistics, teaching materials, etc. The letters posted to list should be limited to academic questions or discussions about the aforementioned topics." To subscribe to this list, send message to: <listserver@relay.doit.wisc.edu>

Germanic Languages

lowlands-l (Lowlands Mailing List) **-** " 'Lowlands languages' are those Germanic languages that developed in the 'Lowlands': the low-lying areas adjacent to the North Sea and the Baltic Sea. These are primarily Dutch, Frisian, and Low Saxon (Low German). Also included are those languages that descended from autochtonous Lowlands languages and are used elsewhere; for example, Afrikaans, Emigré Dutch/Frisian/Low Saxon, Lowlands-based pidgins and creoles, and also English and Scots. 'Lowlands cultures' are those cultures that utilize Lowlands languages or are clearly derived from such cultures. "

To subscribe to Lowlands-L please send an e-mail message to<listproc@lists.u.washington.edu>. Soon after you have subscribed to Lowlands-L, you will receive a multilingual welcoming message containing further instructions.

GERLINGL - For the study of older Germanic languages (to 1500). For more information, contact the list owner at:<GERLINGL-REQUEST@VMD.CSO.UIUC.edu>. To subscribe, send mail to LISTSERV@YVMD.CSO.UIUC.edu>

GERMAN-L - German Teaching Materials. For more information, contact the list owner at:

GERMAN-L-REQUEST@VM.UCS.UALBERTA.CA. To subscribe, send mail to: <LISTSERV@VM.UCS.UALBERTA.CA>

RIBO-L - The German-English discussion group. <RIBO-L@URIACC.URI.edu> (list)

<LISTSERV@URIACC.URI.edu> (listserv). For more information, contact the list owner at:

<RIBO-L-REQUEST@URIACC.URI.edu>. To subscribe, send mail to: <LISTSERV@URIACC.URI.edu>

The Transatlantic Classroom"You have access to the internet in your school now? You are looking for exciting ways to use the net for your subject? You and your students want to profit from the direct access to the world? "The Transatlantic Classroom - Association for the Promotion of Online-Projects in School" lets you choose among a number of creative projects, from introductory offers for newcomers to subject-oriented conferences. Topics range from "Youth Culture" to "History", from "Working World" to "Creative Writing."" <info@tac.schule.de>. You can also get preliminary information from their web page

<http://www.hh.schule.de/tak/>

Mendele: A Mailing List for Yiddish literature and language - "Mendele has 2 rules:

1. Provide a meaningful Subject: line

2. Sign your article (full name please)"

For more information, contact the list owner at: <MENDELE-REQUEST@YALEVM.YCC.YALE.edu>. To subscribe, send mail to <LISTSERV@YALEVM.YCC.YALE.edu>

Sign Language

SLLing-L - (formerly ASL-LING) is for discussions of Sign Language Linguistics. The discussion of Deaf culture, education, medical advancements in the studies of deafness, etc., will be discouraged, except as they are pertinent to the discussion of sign linguistics." For more information, contact the list owner at: <SLLING-L -REQUEST@YALEVM.YCC.YALE.edu>

To subscribe, send mail to <LISTSERV@YALEVM.YCC.YALE.edu>

Synthetic Neutral Languages

Esperanto- "List for discussions in and about Esperanto, a synthetic language intended to be politically neutral." For more information, contact the list owner at: <esperanto-l-request@netcom.com> (Mike Urban)

Usenet

Usenet is like a bulletin board. You subscribe to a particular group and can read posts to it as well as post yourself. Netiquette also applies on Usenet. There are many groups devoted to the culture of certain countries and areas. Although the discussion may be primarily in English, they are prime places to find out about language resources. I found out about my first language mailing list on Usenet. It is also important to learn about the culture of the country whose language you are studying. Languages are formed by culture and, in turn, form the culture. One can avoid making language gaffes and standing out as a foreigner if one knows more about the culture in question.

I have listed the major groups dealing with culture and language. There are also Usenet groups originating in various countries other than the US. The first word of the group's name is often the same country abbreviation as used in the list I provide later in this article. There are also Usenet groups that focus on particular regions, cities and universities within a country (eg. saar.xx [Usenet groups originating in the Saar region of Germany]). These groups can be very helpful and good practice, but I recommend them only to those who are already of intermediate skill in the target language. As English has dominated the Internet, people are naturally protective of those areas where netiquette demands one speak in German, Hindi and so on...

alt.chinese.story	alt.culture.argentina	alt.culture.arab-league
alt.culture.austrian	alt.culture.cajun	alt.culture.egyptian
alt.culture.french-polynesia	alt.culture.hawaii	alt.culture.indonesia
alt.culture.karnataka	alt.culture.kerala	alt.culture.kuwait
alt.culture.saudi	alt.culture.somalia	alt.culture.southasianet
alt.culture.tamil	alt.culture.tuva	alt.language.urdu.poetry
alt.usage.english	alt.usage.english.neologism	alt.usage.german
alt.uu.lang.esperanto.misc	alt.uu.lang.russian.misc	K12.lang.deutsch-eng
K12.lang.esp-eng	K12.lang.francais	k12.lang.japanese
K12.lang.russian	soc.culture.afghanistan	soc.culture.africa
soc.culture.albanian	soc.culture.algeria	soc.culture.arabic
soc.culture.argentina	soc.culture.armenian	soc.culture.austria
soc.culture.baltics	soc.culture.bangladesh	soc.culture.basque
soc.culture.belgium	soc.culture.bengali	soc.culture.berber
soc.culture.bolivia	soc.culture.bosna-herzgvna	soc.culture.brazil
soc.culture.breton	soc.culture.bulgaria	soc.culture.burma
soc.culture.cambodia	soc.culture.caribbean	soc.culture.catalan
soc.culture.celtic	soc.culture.chile	soc.culture.china
soc.culture.colombia	soc.culture.cornish	soc.culture.corsican
soc.culture.costa-rica	soc.culture.croatia	soc.culture.cuba
soc.culture.czech	soc.culture.czecho-slovak	soc.culture.dominican-rep
soc.culture.ecuador	soc.culture.egyptian	soc.culture.el-salvador
soc.culture.eritrean	soc.culture.esperanto	soc.culture.estonia
soc.culture.ethiopia	soc.culture.ethiopia.misc	soc.culture.ethiopia.moderated
soc.culture.japan.moderated	soc.culture.filipino	soc.culture.france
soc.culture.french	soc.culture.galician	soc.culture.german
soc.culture.greek	soc.culture.haiti	soc.culture.hawaii
soc.culture.honduras	soc.culture.hongkong	soc.culture.indian
soc.culture.indian.bihar	soc.culture.indian.delhi	soc.culture.indian.gujarati
soc.culture.indian.info	soc.culture.indian.jammu-kashmir	soc.culture.indian.karnataka
soc.culture.indian.kerala	soc.culture.indian.marathi	soc.culture.indian.orissa
soc.culture.indian.rajasthan	soc.culture.indian.telugu	soc.culture.indian.uttar-pradesh
soc.culture.indonesia	soc.culture.iranian	soc.culture.iraq
soc.culture.israel	soc.culture.italian	soc.culture.jamaican
soc.culture.japan	soc.culture.japan.moderated	soc.culture.jordan
soc.culture.kashmir	soc.culture.kazakh	soc.culture.kenya
soc.culture.korean	soc.culture.kurdish	soc.culture.kuwait
soc.culture.kuwait.moderated	soc.culture.kyrgyz	soc.culture.laos
soc.culture.latin-america	soc.culture.lebanon	soc.culture.liberia
soc.culture.maghreb	soc.culture.magyar	soc.culture.malagasy
soc.culture.malaysia	soc.culture.mexican	soc.culture.mongolian
soc.culture.native	soc.culture.native.american	soc.culture.nepal
soc.culture.netherlands	soc.culture.new-zealand	soc.culture.nicaragua
soc.culture.nigeria	soc.culture.nordic	soc.culture.pacific-island
soc.culture.pakistan	soc.culture.palestine	soc.culture.peru
soc.culture.polish	soc.culture.portuguese	soc.culture.provence
soc.culture.puerto-rico	soc.culture.punjab	soc.culture.quebec
soc.culture.rep-of-georgia	soc.culture.romanian	soc.culture.russia
soc.culture.russian	soc.culture.russian.moderated	soc.culture.sardinian
soc.culture.siberia	soc.culture.sicilian	soc.culture.sierra-leone
soc.culture.sindhi	soc.culture.singapore	soc.culture.slovak
soc.culture.slovenia	soc.culture.somalia	soc.culture.south-africa
soc.culture.south-africa.afrikaans	soc.culture.soviet	soc.culture.spain
soc.culture.sri-lanka	soc.culture.swiss	soc.culture.syria
soc.culture.taiwan	soc.culture.tajik	soc.culture.tamil
soc.culture.tatar	soc.culture.telugu	soc.culture.thai
soc.culture.tibet	soc.culture.turkish	soc.culture.uighur
soc.culture.ukrainian	soc.culture.uruguay	soc.culture.uzbek
soc.culture.venezuela	soc.culture.vietnamese	soc.culture.welsh
soc.culture.yugoslavia	soc.culture.zimbabwe	

MOOs and MUDs

MUD stands for Multi-User Dungeon (as in Dungeons & Dragons) or Multi-User Dimension. MOO stands for MUD Object Oriented. They are user-created and defined virtual worlds. You can interact with people by chatting as well as interacting with a room or robot or river that someone has created. Both can be great places for the intermediate and above student of language to practice.

Warning: MOOs and MUDs are very habit-forming and are great breeding grounds for Repetitive Strain Injury as one may type happily for hours and not notice the passing time. Set a timer and take breaks. If you already have web access, you can go to MOOCentral (<http://www.pitt.edu>/~jrgst7/MOOcentral.html>) which has tips on how to get started. You might even want to start at a English-language MUD or MOO first (assuming English is your first language) so that you can get used to what it's like before forging out into a foreign language.

Dutch - De Digitale Stad - It's a very busy Amsterdam-based MOO. You must request admission from their Web page (<http://www.dds.nl/dds/newusers/applyform.html>)

ZooMOO - telnet://www.dma.be:2222 <http://www.dma.be/p/zoo/

Founded by a Belgian, this MOO is in Dutch.

ESL/EFL - schMOOze University - telnet://schmooze.hunter.cuny.edu> 8888/

A MOO formed specifically with the student of English in mind. Visit their website (<http://schmooze.hunter.cuny.edu>:8888/)

French - Le MOO Français - telnet logos.daedalus.com:8888

cyberMOO - network.io.com:7777 - A French/English MOO with a cyberpunk theme

MOOfrançais - moo.syr.edu>:7777)

MOOsaico - telnet moo.di.uminho.pt:7777 (Actually a multi-lingual MOO inclusive of French, Spanish, Portuguese, Italian and English.)

German - MorgenGrauen LPMUD - telnet mud.uni-muenster.de:4711

UNItopia - telnet infosgo.rus.uni-stuttgart.de:3333

Italian - Little Italy - telnet ipo.tesi.dsi.unimi.it:4444

MOOsaico - telnet moo.di.uminho.pt:7777

Portuguese - MOOsaico - telnet moo.di.uminho.pt:7777

Brazilian Portuguese- cpdeeMOO - moo.cpdee.ufmg.br:7777

normalMOO - freire.futuro.usp.br:8888

Spanish - MundoHispano - telnet europa.syr.edu>:8888 or moo.syr.edu>:8888

MundoHispano also has its own webpage <http://web.syr.edu>/~lmturbee/mundo.html>

MOOsaico - telnet moo.di.uminho.pt:7777

ArdaMOO - telnet lince.las.es:7777 ("ArdaMoo es un MOO social en castellano. Es un entorno interactivo en modo texto que sirve para reunir a sus personajes en un mundo imaginario donde pueden interactuar de formas muy diversas, y donde todos pueden manipular su entorno y ampliarlo a su gusto.") ArdaMOO has its webpage (with telnet link) at: <http://www1.las.es/~martos/arda/index.html>

Swedish - SvenskMUD - telnet svmud.lysator.liu.se:2043

SvenskMUD has its own homepage at: <http://www.lysator.liu.se/svmud/svenskmud.html>

Internet Relay Chat

IRC can be a great way to practice a language and especially to learn slang that one will not learn in a classroom. For instructions on how IRC works, pick up any good book on the Internet. There are even books that focus on chat-based aspects of the Internet. Think of it as a text-based CB radio. There are a number of "channels" where one can chat in real time with other IRC users. Again, take frequent breaks as it is addictive and can contribute to RSI if you don't rest your hands from typing.

A web site for more info on IRC is <http://www.kei.com/irc.html>

Another one that focuses on downloadable documents on IRC is <http://www.irchelp.org/>

A channel is created by someone and only exists for as long as someone is in it. However, there are some channels that can regularly be found on IRC. The main language of IRC, like the Internet, is English. However, some channels are bilingual, while others request that you speak only in Swedish, or whatever the target language is. Please respect the netiquette of particular channels. Basically, try typing the name of the country or language you are interested in, preceded by a '#'. There's probably already a channel for it. Here are some channel suggestions with URLs if they have webpages.

#brasil - <http://www.cyberbrasil.net/>

#brasilia - <http://www.americasnet.com/brasilia/irc/index.html>

#burmese - <http://www.nayzak.com/~aliburma/index.html>

#CS - <http://irc.tuzvo.sk/channel-cs.html> (A Czech-Slovak channel)

#Danmark - <http://www.daimi.aau.dk/~bde/irc-danmark.html>

#digistad - <http://mazur.leidenuniv.nl/IRC.html> (A Dutch-language channel)

#dutch - <http://www.xs4all.nl/~zanac/irc/irc.html> and <http://www.hvu.nl/~koos/dutch.html>

#Espana - <http://speedy.udg.es/~adria/espana/>

#Esperanto - <http://cs.chalmers.se/pub/users/martinw/fla-pa/irc-esp-en.html>

#Finland

#France

#Germany - <http://ikp218.ikp.kfa-juelich.de/pictures/alist.htm>

#Hellas - <http://velox.stanford.edu>/hellas/root.html> (A channel for Greek)

#Holland - <http://huizen.dds.nl/~mder/holland.htm>

#kimppasuihku - <http://www.jyu.fi/~tjlahton/kimppa/kimppasivu.html> (This is a general topic chat in Finnish.)

#latinos - on the Undernet

#lisboa - <http://www.geocities.com/Hollywood/6626/ (The focus is on Lisbon, Portugal.)

#muenchen - <http://icafe.spacenet.de/muenchen/ (The channel is for residents of Munich, Germany and those who wish they were...)

#privet - <http://www.stranger.com/privet/privet.html> (A channel for Russian-speakers)

#Russian - <http://www.netwizards.net/~slava/russian/>

#russian - <http://www.freeflight.com/fms/RussianIRC/ (Russian is the *preferred* language of this channel)

#Slovenia - <http://www.fri.uni-lj.si/~iztok/slovenia.html>

#Spandau - A German channel on the Undernet

#sweden - <http://www.darkface.pp.se/irc/ (This is the #sweden that is on EFnet)

#sweden - <http://www3.mbb.ki.se/Sweden.html> (The Undernet version)

#sverige - <http://angelica.campus.luth.se/sverige/ (A Swedish channel on EFnet)

#sverige - <http://www.oemmc.se/~sverige/ (This time on UnderNet)

#TahitiBar - <http://www.jyu.fi/tahitibar/ (A Finnish channel...go figure)

Gopher Resources

NorWord

gopher://spinner.gac.edu>:70/11/pub/E-mail-archives/NorWord

"NorWord was a 'lesson-a-day' service that a colleague (now at St. Olaf) and I ran for about 9 months. We have ceased sending out mail, but the old lessons are archived at the NorWord Gopher Archive:

-Louis Janus

KidLink Gopher

gopher://global.kidlink.org/11/multi/jp

To retrieve information about the KidCafe Japanese email list in Kanji.

European Gopherspace

(Links to lots of European information)

gopher://gopher.sunet.se/>

FTP Resources

Indonesian Language Resources Includes an English to Indonesian dictionary. Read the "Index.txt". <ftp://ftp.ee.umanitoba.ca/pub/indonesian>

Archive for Chinese Mac Email List <ftp://ftp.yorku.ca/pub/york_other/chinese-mac/>

Domain Names of Countries

The alert student of languages on the Internet might want to know what country someone is posting from. You cannot always tell what country someone is posting from if they are using the old ARPAnet domain names (.com, .edu>, .mil, etc.). I have reprinted a list of country-based top level domain names below. If the poster is from your country of interest, you might politely email them asking if they are interested in language exchange. You must use common sense to determine the situations *in which this might be welcome.*

Domain Names of Countries

AD	Andorra	GQ	Equatorial Guinea	NT	Neutral Zone
AE	United Arab Emirates	GF	Guyana (Fr.)	NU	Niue
AF	Afghanistan	GM	Gambia	NZ	New Zealand
AG	Antigua and Barbuda	GN	Guinea	OM	Oman
AI	Anguilla	GR	Greece	PA	Panama
AL	Albania	GT	Guatemala	PE	Peru
AM	Armenia	GU	Guam (US)	PF	Polynesia (Fr.)
AN	Netherland Antilles	GW	Guinea Bissau	PG	Papua New Guinea
AO	Angola	GY	Guyana	PH	Philippines
AQ	Antarctica	HK	Hong Kong	PK	Pakistan
AR	Argentina	HM	Heard & McDonald Isl.	PL	Poland
AS	American Samoa	HN	Honduras	PM	St. Pierre & Miquelon
AT	Austria	HR	Croatia	PN	Pitcairn
AU	Australia	HT	Haiti	PR	Puerto Rico (US)
AW	Aruba	HU	Hungary	PW	Palau
AZ	Azerbaidjan	ID	Indonesia	PY	Paraguay
BA	Bosnia-Herzegovina	IE	Ireland	QA	Qatar
BB	Barbados	IL	Israel	RE	Reunion (Fr.)
BD	Bangladesh	IN	India	RO	Romania

BE	Belgium	IO	British Indian O. Terr.	RU	Russian Federation
BF	Burkina Faso	IQ	Iraq	RW	Rwanda
BG	Bulgaria	IR	Iran	SA	Saudi Arabia
BH	Bahrain	IS	Iceland	SB	Solomon Islands
BI	Burundi	IT	Italy	SC	Seychelles
BJ	Benin	JM	Jamaica	SD	Sudan
BM	Bermuda	JO	Jordan	SE	Sweden
BN	Brunei Darussalam	JP	Japan	SG	Singapore
BO	Bolivia	KE	Kenya	SH	St. Helena
BR	Brazil	KG	Kirgistan	SI	Slovenia
BS	Bahamas	KH	Cambodia	SJ	Svalbard & Jan Mayen Is
BT	Buthan	KI	Kiribati	SL	Sierra Leone
BV	Bouvet Island	KM	Comoros	SM	San Marino
BW	Botswana	KN	St.Kitts Nevis Anguilla	SN	Senegal
BY	Bielorussia	KP	Korea (North)	SO	Somalia
BZ	Belize	KR	Korea (South)	SR	Suriname
CA	Canada	KW	Kuwait	ST	St. Tome and Principe
CC	Cocos (Keeling) Isl.	KY	Cayman Islands	SU	Soviet Union (still in use)
CF	Central African Rep.	KZ	Kazakhstan	SV	El Salvador
CG	Congo	LA	Laos	SY	Syria
CH	Switzerland	LB	Lebanon	SZ	Swaziland
CI	Ivory Coast	LC	Saint Lucia	TC	Turks & Caicos Islands
CK	Cook Islands	LI	Liechtenstein	TD	Chad
CL	Chile	LK	Sri Lanka	TF	French Southern Terr.
CM	Cameroon	LR	Liberia	TG	Togo
CN	China	LS	Lesotho	TH	Thailand
CO	Colombia	LT	Lithuania	TJ	Tadjikistan
CR	Costa Rica	LU	Luxembourg	TK	Tokelau
CS	Czechoslovakia	LV	Latvia	TM	Turkmenistan
CU	Cuba	LY	Libya	TN	Tunisia
CV	Cape Verde	MA	Morocco	TO	Tonga
CX	Christmas Island	MC	Monaco	TP	East Timor
CY	Cyprus	MD	Moldavia	TR	Turkey
DE	Germany	MG	Madagascar	TT	Trinidad & Tobago
DJ	Djibouti	MH	Marshall Islands	TV	Tuvalu
DK	Denmark	ML	Mali	TW	Taiwan
DM	Dominica	MM	Myanmar	TZ	Tanzania
DO	Dominican Republic	MN	Mongolia	UA	Ukraine
DZ	Algeria	MO	Macau	UG	Uganda
EC	Ecuador	MP	Northern Mariana Isl.	UK	United Kingdom
EE	Estonia	MQ	Martinique (Fr.)	UM	US Minor outlying Isl.
EG	Egypt	MR	Mauritania	US	United States
EH	Western Sahara	MS	Montserrat	UY	Uruguay
ES	Spain	MT	Malta	UZ	Uzbekistan
ET	Ethiopia	MU	Mauritius	VA	Vatican City State
FI	Finland	MV	Maldives	VC	St.Vincent & Grenadines
FJ	Fiji	MW	Malawi	VE	Venezuela
FK	Falkland Isl.(Malvinas)	MX	Mexico	VG	Virgin Islands (British)
FM	Micronesia	MY	Malaysia	VI	Virgin Islands (US)
FO	Faroe Islands	MZ	Mozambique	VN	Vietnam
FR	France	NA	Namibia	VU	Vanuatu
FX	France (European Ter.)	NC	New Caledonia (Fr.)	WF	Wallis & Futuna Islands
GA	Gabon	NE	Niger	WS	Samoa
GB	Great Britain (UK)	NF	Norfolk Island	YE	Yemen
GD	Grenada	NG	Nigeria	YU	Yugoslavia
GE	Georgia	NI	Nicaragua	ZA	South Africa
GH	Ghana	NL	Netherlands	ZM	Zambia
GI	Gibraltar	NO	Norway	ZR	Zaire
GL	Greenland	NP	Nepal	ZW	Zimbabwe
GP	Guadeloupe (Fr.)	NR	Nauru		

List obtained from : <http://www.cs.indiana.edu>/internet/domain.html>
Compiled by Olivier M.J. Crepin-Leblond. Email: <ocl@ic.ac.uk>

Resources used in compiling this series of lists:

Engst, Adam C., *Internet Starter Kit For Macintosh*. 2nd ed.
Indianapolis: Hayden Books, 1994

Hahn, Harley and Rick Stout,
The Internet Yellow Pages. 2nd ed.
Berkeley: Osbourne/McGraw-Hill, 1995

Publicly Accessible Mailing Lists Page by Stephanie da Silva <http://www.NeoSoft.com/internet/paml/>

Liszt: Directory of E-mail Discussion Groups by Scott Southwick <http://www.liszt.com/>

Search the List of Lists by Vivian Neou <http://catalog.com/vivian/interest-group-search.html>

CataList: The List of LISTSERV Lists by L-Soft International <http://www.listserv.net/lists/listref.html>

Inter-Links Interest Group Finder <http://www.nova.edu>/Inter-Links/cgi-bin/news-lists.pl

If you have updated information or can bring new Internet language resources to my attention, please email me at: spidra@sirius.com

Special Thanks go to the members of FLTEACH - The Foreign Language Teaching Forum. I have asked them for their recommendations and help and they have always been forthcoming.

FLTEACH - "The topic of this list is Foreign Language Teaching methods including high school / college articulation, training of student teachers, curriculum, and the NYS syllabus. We hope that this list will also be used to foster a community in which colleagues can share ideas, outlines, handouts and other teaching materials, syllabi, and bibliographies."

For more information, contact the list owner at:

FLTEACH-REQUEST@UBVM.CC.BUFFALO.edu>

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Japan News

個人事業主のためのISDN導入記

ISDN for small business

室橋　正

by Tadashi Murohashi

【概要】

「ISDNにすると１本の電話線で２回線分使えますよ。インターネットが高速で繋げますよ。基本料金は電話２回線より安いんです」そう言われて、私はすぐに策定にはいりました。高速のインターネット接続は魅力です。

色々なトラブルにも見舞われましたが今は通信環境が整い快適です。その一部始終をご紹介します。

私は、小さな飲食店を営んでおります。座敷ごとにオーダーや呼び出しのための電話機があり宅内交換機（PBX）に収容されて外線もしくは内線に使われております。他にはピンク電話があり１階のテーブル席のお客様が利用できるようになっています。ただ、昨今は携帯電話の普及に伴い利用が極端に少なくなってきています。

【条件】

・経済性を重視します。

イニシャルコストは、新たに購入するISDNの機械（DSUとTA）と工事費の合計で５５,５００円です。それまであった3 回線の加入権のうち１回線分売却すれば、ほぼまかなうことが出来る試算になります。

ランニングコストは、アナログ回線とおなじ料金で、しかも3 回線分の容量はそのままです。

・既存の宅内交換機電話施設を含むアナログ電話、ローカルBBSにアクセスするための28.8Kのファックスモデムの両方を、ＴＡの２つのアナログポートで現行どおり使用します。
・携帯電話に転送するサービスを今までどおり使用します。
・停電時に対応できること。今の停電は復旧が早いため、無停電電源装置の導入ではなくボイスワープで携帯電話に転送させることにしました。
・当地はISDNに切り替えると電話番号が変更されるので、それによる機会損失を防ぐため、より憶えやすい電話番号を取得できること。
・当然プロバイダーがISDN対応であること。Macintoshが64kに対応していること。

【導入】

工事を申し込んでから１０日ほどで日程が示されてきました。

高品位なデータ転送のため、伝送経路のノイズが乗りやすい部分の線を交換する必要、そして昨今のインターネットブームによる申し込みの集中により、余分な日程が必要でした。

工事自体は１回線の撤去と新規の配線、DSU、TAの取り付けだけで、１時間かからずに終わりましたが、TA777というターミナルアダプタはMacの通信ソフトを使って、１行ずつ設定を書き込まなければ電話機すら使えないのです。

工事担当者はMacを触るのが初めてのようで、どこをどうすれば良いのかマニュアルを見ながら悩んでいます。こうした設定は搬入以前に出来たはずなのですが、現場に来てから対処するのでは効率が良いとは言えません。

とにかく電話だけを使える様にして設定し、インターネットの設定は後日に回しました。局側を切り替えて、いよいよわが家にＩＳＤＮが開通しました。

【トラブル続出】

●引っ越しましたか？

数日使っているうちに、多くのお客様から「何処に移転したんですか？」という電話がありました。妙に思い以前の電話番号にかけてみると、「おかけになった電話は移転のため、電話番号が変わりました。新しい番号は、0254-50-XXXXです」というアナウンスがされているのです。

飲食店という業種は、市役所、公民館等の近辺で利用されることが多く、幸い当店も立地に恵まれております。お客様からすれば移転されるのは困るわけです。

NTTにクレームを言ったところ、すぐに「移転の為」の部分を外し、さらに３カ月間のアナウンスを半年に延長してくれました。

●え、転送できないの？

ボイスワープ（通話の転送）を試してみましたがうまくいきません。NTTに尋ねた所、ボイスワープはまだ申し込みされていないと言うのです。ISDNの工事と同時に行われているはずなのですが。工事をした担当者から

お詫びの電話がありましたが、作業までには４－５日待たされました。

私の住んでいる管轄ではＩＳＤＮからボイスワープにするケースが初めてであったため工事の仕方がわからず、下手にいじって他に影響が出る危険もあり、技術者が来るのを待たなければならないのだそうです。

●何のためのリモートコントロール？

工事が完了しても、携帯電話からリモートによる切り替えはダメでした、公衆電話からリモコンしないと切り替わりません。これでは停電時に速やかに切り替えるが出来ません。

●加入電話からも転送出来ない？

加入電話からも切り替え操作をやってみましたが、ビジートーンが聞こえるだけです。

NTT本社に問い合わせたところ、現在ボイスワープに対応しているＴＡは無いと言われてしまいましたが、何とか善処してもらえるようにお願いしました。その後は、結局切り替わった旨のアナウンスが無いながらも切り替えられており、転送はできました。

●声が遠いのですが？

声が遠いと言われるので、大声で話さなければなりませんでした、ニフティもエラー続きで正常に通信できません。アナログポートのスペックなんだろうかと思っていました。

しかし結局は、DSUからTAに接続するためのＩＳＤＮ簡易ケーブルキットが接続されていなかったのが原因でした。このケーブルキットにはターミネーターが付属されているのですが、ＴＡに設定を書き込む事に集中するあまり工事担当者が忘れていったのです。

これで完璧……になってほしい。お願いだから…。

●勝手に切れるのですが？

着信する電話が途中で切れてしまいます。はじめは相手が誤って切ってしまったのかと思いましたが違います。そういえば最近無言電話のように受話器を取るとすぐ切れてしまう事が続きました。お客様からご予約のお電話を受けていたときなど、要件だけ聞いてこちらが切ってしまったことになり、これでは大変失礼な物言いになってしまいます。

もしＴＡが勝手に切断してしまうのだとしたら大変です。調べてもらうことにしました。

【原因判明・展望】

いろいろ試した結果、この現象はISDNを使ってMacで通信しMacの電源を落とした直後に受けた通話で起きることがわかりました。その場合こちらから発信しようとしても途中で切れるのです。原因はこれでした。

局でも現象が記録されＴＡ本体の交換が決まりました。原稿締切の２日前、２カ月半に渡って続いた通信環境の整備にやっと終止符が打たれます。

新技術の過渡期にはこうしたことが起こりがちでしょうがきちんと試用してから販売してもらいたいものです。

【背景となる経営理念】

今回のＩＳＤＮの導入は便利になる代わりに電話番号が変わるというリスクが発生しました。

でも、プロモーションを打つなり、そうなっても良いような仕組みづくりをすれば良いことです。変化に強い人がこれからの経営者だと思います。

【謝辞】

よき発表の機会を与えて下さったBMUGのスタッフの方々に感謝申し上げます。

また、お忙しい中、英訳・構成・レイアウトして下さった野口卓さん、伊東かをりさんはじめBMUG Japanの皆様ありがとうございました。

最後に、トラブルはトラブルとしても解決にあたり全力を傾けて下さった、NTT-TE信越の村上サービスセンタ所長の田中幸男さん、次長の志村哲夫さん、佐藤賢次さんに感謝致します。この人達にはこちらの質問にも優しく答えて下さりすっかり仲間になってしまいました。夏休みに私ども食三昧・江戸庄が行った『マックで楽しむ親子インターネット寺子屋塾』を開催するにあたりましても、Mac用のプロジェクターやレーザーポインターを無償でお貸し下さいました。

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『電子メール革命の衝撃』
西順一郎著　ソーテック社

室橋 正（むろはし ただし）

1981年、東京秋葉原で板前修業中アップルIIコンピュータと出会い、1992年よりマックエキスポのブースでボランティアをする。現在、郷里の村上で食三昧・江戸庄を経営し通信、プロモーション、経営管理にマックを活用している。

ISDN for Small Business

by Tadashi Murohashi

Translated by Takashi Noguchi

Summary

"By changing to ISDN, you can use two channels on a single telephone line, have significantly higher speed to the Internet with less expense from two analog lines," they said, and immediately I started to plan, excited by imagining a super high-speed Internet connection.

Today, I am happily using it, but I had a lot of trouble at the start. I would like to explain what happened during the installation process.

I own a small Japanese restaurant in my town. There is a telephone set in each room to call for orders and these telephones are connected to a personal branch exchange (PBX) so that they can call each room as well as outside lines. There is also a public telephone in the entrance although these days, many people use their own cellular phones rather public ones.

Condition

- Most important, is the economic value.

On start-up, I needed to pay 55,500 yen ($504.00) for a digital signal unit (DSU), a terminal adapter (TA), and for installation of the equipment by a service person. It can pay to sell one analog line.

The general cost is almost the same as one analog line, and it can work as two lines!

- It's necessary to use each of the room phones connected to PBX and analog fax/modem by inserting lines into two analog ports on TA.
- I got call transfer service in the case of electric shutdown. These days, recovering from a shutdown does not take very long, so I chose call-transfer service (NTT service: Voice Warp) for transfer to cellular phone or Uninterruptible Power Supply (UPS) system.
- I must use a new telephone number after ISDN is installed, so a very important thing is to get a new number which is easy to remember for the customers.
- The ISP should be able to access via ISDN line—my Mac receives 64kbps access speed, of course.

Installing

NTT presented me with a time schedule after completion of my contract.

To transmit higher quality digital data, they need to exchange the outside telephone phone line. Also because of Internet fever these days, I must wait an extra few days.

The installation itself took less than one hour—removing the old line, setting the new one, then hooking up TA and DSU. The TA777—my TA—must set each AT command from the Mac terminal emulating software—without this procedure, I cannot call (speak to) others.

It seemed like it was the service person's first time to use a Macintosh—he took a long time looking around the service manual. Less efficiency.

Anyway, he could install only enough to use the telephone set. Finally, the ISDN line was connected to my house. A fast enough Internet was yet to come.

Troubles

• Have you moved?

A few days after, many of my customers asked me, "Have you moved?" With some skepticism, I dialed the old telephone number and it said "The telephone number you have dialed has been changed due to a move; the new number is … ." I couldn't believe I actually heard this announcement on a recording tape.

A restaurant is popular when it's located near a place where many people gather (e.g., town hall, public office). My restaurant is located in such a good area. Customers will be bothered if it moves—at some point in time, I will lose my customers. You can imagine I was perturbed when I heard the misleading phone recording announcement.

I complained to NTT about this and they immediately removed "due to a move" from the announcement and gave me an extended term of announcement from the basic three months to six.

• Can't transfer call?

Voice Warp (NTT's service to transfer call) did not work.

NTT answered saying they hadn't received such an order yet; it must be done at the time of installing the ISDN. The service person said he was sorry about this but we had to wait a few days more.

In my local area, my case (using Voice Warp service) is the first of its kind, so they worried that the problem was an operating problem.

• Remote Control for what?

After the connection, I couldn't switch to "Warp" from my cellular phone. It only worked from a public phone. I can't switch quickly during electric shutdown in this situation.

• Can't switch from my home?

I tried to switch from my home but I could only hear a busy tone. The NTT person said there were no TAs available to switch to at this time. When it switched successfully there was no announcement.

• Poor audio level

They said my voice level was poor to listen to, so I had to speak louder. Accessing the Nifty server (BBS service) brought on many errors. I thought it was just problems with the specification of the analog port.

Actually the reason was they didn't hook a cable kit between the DSU and TA. The service person forgot to connect it because he was absorbed in setting the TA's command setting.

Finally, all is well... (How I wished it were so...)

• Suddenly disconnected.

When I received calls from the outside, I often got hung up. I thought they just accidentally got off hooked, but I was wrong. I was receiving calls that hung up immediately after I picked up. Customers thought I received their call and then just hung up; this is a problem.

I suspected TA was doing the hanging up, and asked for NTT.

• Identifying the origin

After a few trial runs, I discovered every time just after I disconnected the Internet via ISDN, my Mac shut down. I got hung up while calling.

The NTT center acknowledged the same problem, and finally the TA itself was changed. Just two days before writing this article, all the problems were finally solved.

In the transition period of newer technology, sometimes this kind of problem will occur. I wish manufacturers would check their products well before shipping.

Conclusion

This time, changing to an ISDN gave me higher technology but gave me the disadvantages of changing telephone numbers. I think you don't have to worry if you've built up a system solid enough to avoid this. As to the future, a manager must not be afraid of changing anything.

Thanks to the BMUG staff for giving me an opportunity to publish my experience.

Also thank you for translation, edit, and layout by Noguchi-san , Kawori Ito-san and more BMUG Japan News stuff.

Lastly, thanks for Yukio Tanaka-san (chief of NTT-TE Shin-etsu Center), Tetsuo Shimura-san (sub chief), and Kenji Sato-san. They did their best to turn around many problems.

They became my friends after gently answering my questions.

They even rented us equipment when I held a seminar "Small school of the Internet with children, parents, and the Mac" this summer at my restaurant, Shokuzanmai, Edosho.

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1995

In 1981 ***Tadashi Murohashi*** *met an Apple II computer, while learning his Japanese cooking job in Akihabara, Tokyo. He joined BMUG and has worked together with other BMUGers at the BMUG booth since the 1992 MacWorld Expo Tokyo. He is owner and chef of the Japanese Restaurant Edosho in his hometown Murakami city. He uses the Mac for communications, business promotions, and management of his work.*

BMUG Japan BBS

北村秦一

by Yasuichi Kitamura

世界中にMacintoshのユーザーグループはあるのですが、BMUGの魅力はその活動の活発さでしょう。ニュースレターの分厚さを見ればよくわかると思います。

実際にアメリカでBMUGは、東海岸でも西海岸でも、BBSの開設、興味の対象毎のSIG(Special Interest Group)、ほぼ週1回のミーティング（日本語の感覚では集会に近い規模ですが）を行っています。

中でもBBSは会員相互の意見交換の場であると同時に、「困ったときの」まさに頼れる場所でもあります。ヘルプラインは、そのように機能していて、そのパワーは、一般のベンダーを越えるものがあります。

ところで日本には、国籍は別として約500人以上のBMUG会員がいますが、今までは一部の物好きを除いて、ほとんどの方がニュースレターと会員価格での物品購入程度のサービスしか受けていませんでした。BMUG Planet BBSとBMUG Boston BBSが相次いでインターネット接続されることにより、日本から国際電話をかけなくても良くはなったものの、言葉の壁で二の足を踏んでいる会員も多いことと思います。BMUG Japan BBSはこれらの障害を少しでも軽減する目的で開設致しました。

この原稿を書いている現在（9/20/96）では、まだテスト運用段階であるため、このニュースレターがみなさんの手元に渡る頃には変わっているかも知れませんが、以下のような会議室構成で運営していきたいと思います。

- MailBox
  個人メールのフォルダ
- File Library
  フリーウェア/ シェアウェア/ デモのフォルダ
- News
  BMUG Central(Planet)の翻訳のフォルダ
- General
  BMUG Japan独自のフォルダ
- Gateway
  Planet/Boston/FC-Link(Japan)が読めるフォルダ
- BMUG Service
  Helpline（スタッフが双方向の翻訳）、BMUG商品の紹介

ファーストクラスの使用感はマッキントッシュとほぼ同じです。BBSが一つのマッキントッシュと思ってください。みなさんが、BMUG Japanに接続すると、まさにデスクトップが見えます。

管理上の注意点として、デスクトップ上に最初に見えるフォルダと他のサーバーと交換するフォルダはすべて機文字の名前とします。その方がトラブルがないから:-)

Japan BBS運営活動でウエイトの高いものに、PlanetやBoston BBSとのメッセージ交換での翻訳作業というのがあります。また、ライブラリ管理（ウイルスのチェック）の作業もあります。秋のニュースレター出版後、幾人かの方よりボランティアの申し出を受けました。BBS運営には、技術的なサポートの他にメッセージのサポートも重要な要素です。もしすこしでもお手伝いしようという方がいらっしゃいましたら、ぜひ我々までご連絡下さい。

現在接続に必要な情報をお知らせします。

IPアドレス：133.243.99.253
port：3004
電話番号：0423-59-7116

できるだけたくさんのBMUG会員のお手伝いができるような場にしたいと思います。

最後に、このBBS開設にあたって、BMUG Berkelyのみなさん、BMUG Bostonのみなさんに大変お世話になりました。この場を借りてお礼を申し上げたいと思います。

北村 秦一（きたむら やすいち）

彼の職場はBMUG JAPAN BBSのサーバーのあるところと同じ場所である。サーバーの周辺には、テレビ局と同程度の編集設備と、グラフィックワークステーションが所狭しと並んでいる。彼の夢はBBSでビデオ・オン・デマンドができること。早く、System8が出ないだろうか…。

この記事の英訳をしていただいたPowerBook Owner's Club(P.B.O.C)の皆さんをご紹介します（敬称略、一部ハンドル名）。鵜沢裕一、タコ社長、平野　有恒、ヨッシー、馬殿　徹也、笠　充彦以上の皆さんです。ありがとうございました。P.B.O.Cのホームページは［http://www.net-army.com/PBOC/］です。ぜひ一度ご覧下さい。

BMUG Japan BBS

by Yasuichi Kitamura

Translated by P.B.O.C

There are many Macintosh user groups in the world, and BMUG is one of the more active groups. One of our attractions is group activities. You can feel it when you get this thick newsletter.

BMUG holds a meeting once a week, and has interesting SIGs and BBSes in the United States. In particular, BBSes allow members to communicate with other members, and have a "Helpline" that is usually better than the help you get from vendors.

Although many members (about 500 people) have already joined us in Japan, most of them get only a few benefits from BMUG. BMUG Planet BBS and BMUG Boston BBS are connected to the Internet enabling Japanese members to log on without having to make an international call. But most of us hesitate to use it because of difficulties in understanding English. So, we established a BMUG Japan BBS and try to translate issues into Japanese.

This BBS is still undergoing testing as of this writing (9/20/96), so the BBS configuration will probably change, but the following is what we have so far:

- Mailbox
  Personal email holder
- File Library
  Collection of Freeware, Shareware and demo softwares
- News
  The Japanese equivalent to "BMUG Central"
- Gateway
  Gateway to access Planet/Boston/FC-Link(Japan)
- BMUG Service
  Helpline and BMUG products showcase

The GUI (Graphical User Interface) of our FirstClass is Macintosh-like. You may consider it as a Mac desktop. When you connect to BMUG Japan, you will see a desktop similar to the Mac's. Please take note: we decided to use Roman letters for the folder name on the desktop. We are also sharing folders with other servers. I think it is better that we link to other servers.

One of the important activities in Japan BBS is translating messages that we exchange with Planet or Boston BBS. Managing library files such as virus checking is another important job we perform. After the BMUG Newsletter was published last fall, some people offered to help us. To keep the BBS going, we need more volunteers working on Helpline, translating messages, etc. If you're interested in our activities, please let us know.

The following lines are necessary details to connect:

- Via the Internet -
  IP Address : 133.243.99.253
  Port : 3004
- Direct-dial -
  TEL : +81-423-59-7116

We would like to help BMUG members as much as possible through Japan BBS.

We are deeply grateful to people in BMUG Berkely and BMUG Boston who have been so helpful in starting up our Japan BBS. We could not have opened our BBS without their corporation.

Yasuichi Kitamura *works at the same place where the BMUG Japan BBS server is set up. Around the server are many pieces of video editing equipments. Their quality is almost the same as a broadcast station. Kitamura would like to add the video-on-demand on the First Class Server. That will also be fun. Hmmm, System 8 will lead to a road of such fun things, he hopes.*

To the ***PowerBook Owner's Club*** *(P.B.O.C) people, thank you very much for translating this article: Yuichi Uzawa, Tako Syachyou, Yukoh Hirano, Yosshy, Tetsuya Badenn, Andy and Ryu. Their web page is http://www.net-army.com/PBOC/. Take a look!*

初心者のためのResEdit　改訂版

Review : ResEdit for Biginners, revised edition

伊東かをり

by Kawori Ito

【1996年夏】

「パークレーからZenの日本語が届いたけどいる？」

「もちろん！！　ください！♡」

「じゃ、ニューズレターに書評書いて、ＢＢＳにも載せられるようにしてね」

かくして、私は只でこの本を手に入れ、代わりにこの書評を書くことになり、それから約一週間、仕事から帰るとマックの前にへばりつき、本を片手に毎夜毎夜遅くまでマックの改造に没頭したのでした…。

この本とは、「Zen and Art of Resource Editing: The BMUG Guide to ResEdit, Expanded Fourth Edition」（Hayden Books）の待望の日本語訳、1996年5月末にトッパンより出版された「初心者のためのResEdit 改訂版」（3,200円、訳者は前版と同じく井川俊彦氏）のことです。もちろんZen ROM v2.0（ラベルは変わっていますが中身は原著の付録と同じです）も付いています。

【改訂されて】

改訂版（つまりFourth Edition）になって非常に読みやすく、使いやすく、内容がさらに充実しました。完全に大幅に書き改められ、全く新しい本と言っても良いぐらいです。入門書としての色が濃くなり、なじみやすく、分かりやすいところから段階を追って、さらに深いところへ誘っていく構成に変わりました。特に体験という名のデモンストレーションは効果的です。些細な変更で、パッと変わる。おおっ、となって、ぐっと読者を引きつけるわけです。そうして読み進めていくうちに、ふと気が付くと深みにはまっている、そんな感じでしょうか。以前はいきなりファインダーのカスタム化でしたものね。

目次も細かくなり、調べるときに見やすく探しやすくなりました。以前は章のタイトル名だけでしたが、今度はちゃんと見出しの項目まで載っています。私のような面倒くさがりやにはありがたいことです。そして付録のCD-ＲＯＭ。サンプルデータやテンプレート、ユーティリティが盛りだくさんに詰め込まれたこの一枚で、ほとんどの作業に必要な物はそろってしまいます。今までのようにわざわざネットからダウンロードしてくる必要がなくなりました。これはポイント高いですね。ただし、アニメーションカーソルを作成表示するユーティリティーであるCursorAnimatorが収録から外れてしまったのは痛いですけど。

【OSの違い】

この本を活用するにあたり、気を付けていただきたいことがあります。それはこの本があくまでも"System7"（または7.5）をベースに書かれたものなのだという点です。漢字Ｔａｌｋでやってみて違うところが出てくるのは当たり前だと思ってください（Japanese Language Kitでは試してないので何とも言えません…）。

もっともこの違いを強く感じるところがそうたくさんあるわけではありません。ほとんどの場合、意識をせずにそのまま活用できるはずです。

【立ち往生しないために】

とはいえ、漢字Talkの環境ではそのまますぐに応用できないところがいくつかあり、さらにいくつかの間違いもありました。その中でも特に実践する上でつまってしまいそうになるところだけ、ピックアップして簡単に説明しておきます。

1. 第0章　体験その2

System7のシステムフォントであるchicagoを変更します。漢字Talkだとやってもそのままじゃ効果は見えませんね。

2. 第0章　体験その3

これは訳文が間違ってます。

ステップ2.　（オープニングタイトル画面の）クラウンをクリックする。

ステップ3.　ResEditでResEdit自体をオープンする。

です。これで悩まずに進めますね。

3. 第0章　体験その4

これも訳文が間違ってます。バケツツールを選択する記述が抜けています。

ステップ7.　画面左下の黒い長方形をクリックダウンし、ドラッ

グして下側の右にある一番最後のパターンまでポインタをもっていく。

ステップ8.　その場所でマウスボタンを離す。

ステップ9.　画面左側にある碁盤目の右側の列の上から3 番目の四角を一回クリックして、ペイント流し込みバケツツールを選択する。

です。これでパターンを塗ることが出来ます。

4.　第8章　'KCHR'エディタのメニュー

原文の間違いから、さらに訳文が間違ってしまっています。

CapsLock-Optionの組み合わせはOptionだけの対応表（Table3。現在はTable2！）に対応させます。そして、「Remove Unused Tables」で取り除くのは（Table4になっている）Table5です。

それから、文章はこのように続きます。「ここで初めてちょっと引っかかったはずだ。そう、Table5がなくならないのである。なぜだ？　たしかにどのキーを押しても、どのキーの組み合わせでもTable5は機能しない。つまりその対応表は使われていないはずである。いったい何がいけないのであろうか？」

実際にやってみて、どうしても消えなくていろいろ悩んでしまった人もいるでしょう。本当は消えないのが正解。そう、あなたは間違っていません。

5.　第11章　図11.5

これも訳文が間違ってます。

図のカラーホイールが　System7.5.1のものであって、System7.5.1からカラーホイールが使えるようになったわけではありません。ですからもちろん、7.1でもカラーホイールで色を選択することが出来ます。

6.　第11章　カラーパレットの応用

これは原文の間違いです。

Demo Flazerは「Book Example」フォルダのFlowFlazer Demoフォルダの中にあります。

7.　第13章　フォントフォルダを使う

Zen Soundsファイルをフォントフォルダに入れると、外すことが出来なくなることがありますので注意してください。この場合、システムCDで立ち上げてから、ResEditでZen Soundsのタイプとクリエータを ResEditに戻せば外すことが可能になります。

8.　第13章　ズーム効果をなくす

漢字Talkでは'CODE'リソースのID=4にはオフセットで0078のところに"48E7 1F38"はありません。探してみましたが見つかりません。どなたか、どこをどう直せばいいか知りませんか？

9.　第14章　Macの起動

'DSAT' のID=0のものの中に"Welcome to Macintosh" の記述を見つけられませんでした。

10.　第15章　エディタのインストール

'snd'のエディタはCD-ROMのEditor and Tamplatesフォルダ内のChris Reedフォルダのsnd Editor Folderに snd editor for ResEdit2.1という名前で入っています。

【そして】

仕事がら、アプリケーションのローカライズを手がけることが多いのですが、リソースの変更時にはなぜか「ResEdit完全版」（トッパン刊、P・アレイ／C・ストレイジ著、井川俊彦訳）よりも、この「初心者のためのresEdit」の方をよく活用しています。大抵のことはこの一冊で済んでしまいますし、きっとこちらの方が手軽で、見やすいためだからだと思います。初心者のためと銘打っているとはいえ、この本は非常に強力な、完成度の高い技術書だと思います。各章でテーマごとにリソースタイプを分け、簡潔に読みやすく書かれている上、かなり技術的な部分も詳しく書かれています。たとえ今初めてResEditというものを聞いたばかりの人でも、すぐに実践してみることも可能ですし、英語のアプリケーションの表示を全部日本語にしてしまいたいときにも、この本があればどこをどう直せばよいのか、良き道しるべとなってくれます。さらに、完全破壊を避けるために「安全のためのアドバイス――守るべき規則」も付いていますから、これさえ守っていればトラブルに出会うことも少ないでしょう。

総合的に見て、前述のような若干のOSの違いによる問題があっても、これはマックユーザーならぜひ持っていて欲しい書籍の一つとして、私はお勧めしたいですね。そして、マックユーザーならではの楽しみをぜひ味わってもらいたいと思います。

「初心者のためのResEdit　改訂版（CD-ROM付き）」
デリック・シュナイダー／ハンス・ハンセン著
井川俊彦訳
1996年　トッパン発行
236頁
定価3,200円

伊東 かをり（いとう かをり）
BMUG Newsletter, Japan News Section 編集。
1994年、BMUG会員になり、1996年のExpoよりボランティア活動を始める。現在パソコン教室でインストラクター、カリキュラムの開発、ソフトウェアのローカライズ・日本語化を行っている。さらに英日翻訳のスキルアップを目指している。

Review: ResEdit for Beginners, revised edition

by Kawori Ito

This English version review is not the same as the Japanese review. I wrote this English language article for non-Japanese readers, because if I translated the Japanese document word for word, you would not understand some of the discussion without having the Japanese Zen book.

At the end of May 1996, Toppan published *Syoshinsya no tame no ResEdit, Kaitei ban* (*ResEdit for Beginners, revised edition*). This is the long-awaited Japanese translation of *Zen and Art of Resource Editing: The BMUG Guide to ResEdit, Expanded Fourth Edition* (Hayden Books, publisher). The translator is Toshihiko Ikawa, the same translator used in previous editions. The Zen ROM v2.0 is included as expected—the label was changed but contents remained the same.

The revised edition (Fourth Edition) is very readable, usable, and rich in content. It's a drastic change—a great rewrite. There is only one disappointing thing. CursorAnimator is not in the CD-ROM.

Differences

There aren't many differences between the English and the Japanese versions. The photo of Kamakura Great Budda on the title pages of the English version is not in the Japanese version. Neither is the "Contents at a Glance" page. The articles have changed to become very serious literature. Chapter title words are changed.

The OS Issue

There is one problem—that is, difference of OS. This book is written for System 7. In Japan we normally use Kanji-Talk 7. So in practice, we can't put to use all of what is discussed in the book. The translator pointed this out at the very beginning, but for the novice user, which OS applies to what is not easily apparent. There is no easy solution. Most translated computer books have this same problem. If the book were to make distinctions between the OSes, it would be a very different book.

Wrong, wrong, wrong

Translated books often have mistranslations. I found some in this book. Some were so critical, there was no way I could understand it until I read the English version. I wonder how these mistranslations were not caught earlier on. I only hope ***my*** translation is completely understandable.

Nevertheless…

Even though this book has some problems, it is still a very usable book because the Mac OSes are basically the same—the differences are just on the surface. I only hope future translated publications will separate the different OSes with additional information about the local (Japanese) OS. I know this may be difficult to do, not to mention problematic for copyrighted publications, but since BMUG has a worldwide membership, I think that someday, it may very well come true.

Syoshinsya no tame no ResEdit, Kaitei ban (CD-ROM tuki)
by Derrick Schneider and Hans Hansen
translated by Toshihiko Ikawa

Toppan
Price: 3200yen
236 pp.
ISBN: 4-8101-8602-4
1996

Kawori Ito *is a volunteer editor for the Japan News Section. She works for the Computer School in Tokyo, instructing, planning curricula, and localizing software using ResEdit and C++. These days, she continues to improve her English to Japanese translation skills.*

BMUG Japanの現在-未来

BMUG Japan - Now and Future

野口　卓

by Takashi Noguchi

前回の記事では、いよいよBMUG Japanが活動を開始するという内容を書きました。その記事を読んだ方々から沢山反応があり、スタッフの人材は半年前に比べて倍近くにも増えました。強力なMacユーザーが多く、私も教えられることが沢山あって、とても助かっています。

さて、今回は沢山のニュースあります。

Japan BBS

BMUGのBBSがついに太平洋を越えました。距離が縮まっただけでなく、日本語も使えます。Internetからのアクセスも可能ですので、長距離電話料金を気にすることなく接続できます。PlanetやBMUG Bostonとのゲートウエイ（会議室の共有）、日本国内の会議室のゲートウエイもする予定です。日本語でのHelp Lineのサービスもこのの BBSで提供します。日本側で処理できないような内容については英文にしてPlanetに持ち込み、その返事をまた日本語にすることになります。翻訳ができるボランティアの数はまだ限られているので大量のHelpには対応できないかもしれませんが、可能な範囲で行うつもりです。当然ながら日本語での書き込みが自由なので、日本の会員の間や海外在住の会員とのやりとりも気軽にできます。

BMUG Japan BBSはFirstClassのBBS（Planet BMUG等と同じ）で、管理にはボランティアの北村泰一さんが当たります。詳しい内容は、北村さんの記事を読んで下さい。

UG登録

BMUG JapanはApple Japanにユーザーグループ（UG）として公式に登録されました。これによって、日本にいるBMUG会員は"BMUG Japan"というUGの会員ということになります。なおBMUG Japanには会費がありませんのでご安心下さい。登録UGになることによって、他のUGとの交流や、Appleからのさまざまな情報の提供、BBSでのAppleの最新ソフトウエアやOSのアップデート版の会員向け公開が可能になるという利点があります。

CD-ROM

BMUG会員全員にNewsletterとともに送られるMember's CD-ROMがありますが、今回はそれに日本のシェアウエア／フリーウエアを載せることになりました。作者の皆さんからも好意的な協力のメッセージをいただきました。今後も日本の優れた公開ソフトを紹介していくつもりです。

LinkClubニュースレター

LinkClubというFAX情報サービスのユーザーグループのニュースレターに、サンフランシスコのPlanetで語られている内容から、日本で見て楽しいものを、毎月BMUGからの情報として書いています。“World Trend”というページです。身近に入会している人がいましたらぜひ一度手にとってご覧下さい。

ここ1ー2カ月はBMUGの新しい活動で多忙な日々を送りました。最初に思った事「アメリカのBMUG会員と同じようなサービスを日本でも提供したい」ということが一つづつ実現していく事を感じます。

また今回も多くのスタッフが参加しています。このNewsletterの校正、レイアウトだけでなく、記事も書いてハードだった伊東かをりさん、CD-ROMの内容を揃えて、チェックしてくれた古野さん、佐々木さん、松田さん、BBSのアドミンとしてこれからも苦労すると思われる北村さん、翻訳を手伝っていただいた橋本さん、RyuさんとPowerBook Owner's Club(PBOC)のその他の皆さん、本当にありがとう。BMUGとBMUG Japanがもっと大きくなるために、これからもがんばりましょう。

BMUG Japan連絡先：
bmugj@MAILHOST.NET

野口 卓（Gucci，のぐち たかし）

BMUGボランティア、BMUG Japan代表。
1992年に初めてMac（SE/30）を購入。翌年にBMUG会員となり、以来Expoでのボランティア活動を続けている。現在PowerMac8100でコンピュータミュージックのデータ作成、スタジオ設計、ミュージカル、CD、CD-ROMの音源等の制作を行っている。

BMUG Japan - Now and Future

By Takashi Noguchi

Translated by Rio Hashimoto

We were very pleased to make an announcement about BMUG Japan in the last Newsletter. We've received lots of messages from readers asking if they could help us out. Now our staff has doubled. All are power users of the Mac—there will be many things I can learn from them.

Just by exchanging email a few times, we started talking like good-old friends upon meeting for the first time. We didn't even notice how the time went by at Fami-Res (family restaurants—they serve a good enough quality meal for a cheap price—we have those everywhere in Japan). The more we talked, the more we got to know how much we all loved the Macintosh.

Let's get started—there are many things to update this time!!

*Japan BBS

A BMUG BBS across the Pacific Ocean! Not only the distance, but being able to use the Japanese language made it easier for us to communicate with each other. No more worrying about paying large amounts of money on long distance calls nor international calls by opening access from the Internet. Now we have gatewayed (shared) conferences with Planet and BMUG Boston as well as shared Japanese conferences with other Japanese BBS sites.

BMUG Japan BBS is a FirstClass BBS, the same as other BMUG sites. Yasuichi Kitamura is the system administrator. Please read his article for more info!

In this BBS, our goal is to be able to supply help in Japanese, becoming a bridge between BMUG Japan and the U.S. If there's anything we can't resolve, we will translate the question, pass it over to our U.S. counterparts, then translate the answer back to the user. There's not too many helpers doing translation so while we may not be able to get to a lot of it, we will try to do as much as possible.

*BMUG Japan, registered in UGC

BMUG Japan is now officially a users group recognized by Apple Japan. With no extra fee, BMUG members located in Japan have also become a member of BMUG Japan.

There are lots of benefits to being a member of a UG—we receive the latest information from the Apple directory, and we can officially distribute the latest Apple update software.

*CD-ROM

We have added a Japanese Shareware & Freeware section in the CD-ROM distributed with this issue. Many developers offered us help with warm words. We continue to introduce great Japanese Share/Freeware.

*LinkClub Newsletter

There is a Mac user group's information service called LinkClub (some of you may already know). We have a column in "World Trend" in their monthly newsletter introducing BMUG activity. In their newsletter (they introduce worldwide Mac users), we introduce topics off of Planet BMUG. If any of you or your friends are a member of LinkClub, check it out!

I was busy for the last two months on new activities for BMUG. I am now seeing my dreams come true one by one. Someday I want to provide the full service that BMUG U.S. does now.

Ever gracious is hard worker, Kawori Ito, who has done not only the layout, and proofreading, but also writing; thanks to Furuno-san, Sasaki-san, and Matsuda-san—they put together the Japanese portion of the CD-ROM; cheers to Kitamura-san who was and is going to have wonderful (but hard) time being a BBS Admin; Hashimoto-san and Ryu-san with PBOC (Japanese PowerBook Owner's Group), who helped translate and other volunteer work, thank you very very much!!! Please help us bring BMUG Japan activities into a bigger forum!!!!

To contact us:
bmugj@MAILHOST.NET

__Takashi Noguchi__ is a BMUG volunteer and the BMUG Japan representative. He bought his first Mac, an SE/30, in 1992, became a BMUG member the following year, and has been helping out at the Macworld Expos since then. Now, as a power user of PowerMac 8100, Noguchi makes computer music data, designs for music recording studio, and creates sound source for musicals, music CDs, and CD-ROMs.

SIGs/Conferences

Creating A Web Page Generation Tool for BMUG's SIGs

From Inspiration to Implementation

by Michael Patrick Ellard

A few months ago I created a tool that automatically generates a set of Web pages for BMUG's Special Interest Groups (SIGs). This article describes the process of taking the SIG page generation tool from idea to reality. In doing so, this article will describe the initial inspiration for the project and some of the design and implementation issues that I encountered on the project.

The Inspiration

Every project starts with an idea. In the case of the SIG Pages tool, the initial idea came from Julie Bernstein, one of BMUG's Webmasters. Julie posted a note in the LesBiGay SIGs conference on Planet BMUG saying, "Emeline Mann Sanchez, BMUG's Publications Manager, says that each SIG can have its own Web page on BMUG's site. Let's put a Web page together so that we can be the first BMUG SIG to have our own page up on the Web!"

Before going to sleep that night, I thought about the idea a little more. I liked the idea of putting together a SIG page for the LesBiGay SIG, but there was the question of content. Just what should go onto the LesBiGay SIG's page?

As I pondered this question, I realized that there was a standard set of content that should go onto every SIG's Web page. Each SIG is a collection of people who share a common interest, such as programming, computer aided design, computers and law, et cetera. Each SIG has meetings where people get together to talk about topics related to the SIG's focus. Most SIGs have online conferences which can be reached via Planet BMUG and BMUG Boston. Finally, each SIG also has one or more moderators who arrange meetings, moderate the online conferences, and serve as a contact point for the SIG.

BMUG is internationally known as a Macintosh authority, and Mac users from as far away as Croatia have used BMUG's SIG pages to send email to SIG leaders asking for help.

Given the set of standard information needed for each SIG's Web page, I realized that I could write a database that would hold all of the information for each SIG. This database could automatically output the necessary Hypertext Markup Language (HTML) needed to display a page on the Web. By creating a simple HTML generation tool, I could create Web pages for all of BMUG's SIGs without putting in much more effort than it would take to create a single page for the LesBiGay SIG.

Automation Issues

The first design choice that I made when I decided to create the SIG page generation tool was that I decided to create a tool at all. It could be argued that hand–coding HTML would have worked just as well. However, the advantage of a database tool is that it allows one to quickly create or edit SIG pages without a lot of hand work. This decreases the time needed for maintenance of the pages and it greatly reduces the possibility of errors in the HTML code for new or revised pages.

While I felt that a database tool was a good idea, I also kept the tool simple and small. There are many programs, called CGI applications, that can dynamically generate Web pages from scratch whenever a user requests a page from a Web server. I decided not to create anything that complex, reasoning that by the time I was done creating a CGI application, I could probably have hand–written the necessary SIG page HTML code several times over. A CGI application would have made sense, however, if I was planning to generate a large number of pages that would be frequently updated.

Graphics might add some glitz to the pages, but they wouldn't really add anything to the content.

There are actually some commercial CGI applications that allow databases such as 4th Dimension and FileMaker Pro to automatically generate Web pages. I might have used one of these applications, but BMUG's Web site current runs on a Sun server which CCNET allows us to use for free. Unfortunately, the CGI applications that automatically generate Web pages from Mac databases only run on the Macintosh, so they were not an option for BMUG's site.

It was easy to choose which database to use to generate the SIG pages. I picked 4th Dimension since it is a powerful, relational, Macintosh database that also has a full–featured programming language. I had already done lots of prior database work with 4th Dimension, so I knew that it could do everything that I needed.

Page Design Issues

I also decided early on not to include SIG–specific graphics in the SIG pages. While it certainly would have been possible to add graphics to the SIG pages, I couldn't see any benefit to doing so. Graphics might add some glitz to the pages, but they wouldn't really add anything to the content. For people accessing the Web page, graphics would take much longer to download than simple text pages. For the people designing the Web pages, they would take a lot of time to design. Thus, the only graphics that appear on the SIG pages are the standard BMUG page headers and footers that appear on pages throughout the BMUG Web site.

In preparing the graphic design for the BMUG pages, I started by hand–coding a prototype SIG page in HTML. After I had gotten the page looking as I wanted it to look, I then wrote 4th Dimension procedures that used the information in my SIG database to replicate my prototype HTML. I find that it is usually easiest to start with an HTML mock–up and then write procedures to generate HTML that will replicate the mock–up.

I was also careful not to let pre-existing paper versions of SIG documents limit my work. When I did my first mock–up of the page that listed all of the SIGs, I essentially replicated a paper document that someone else had prepared. I then looked at my work and realized that I had not used any of HTML's special abilities. I had input several email addresses verbatim without putting any special formatting on them. I quickly corrected my error, changing the email addresses into HTML MailTo: anchors that would automatically initiate an email to the addressee when clicked. It is important to remember that HTML is a very different medium than traditional text layout. HTML can be used to replicate text documents, but you can also make it have an instantly clickable link to any email, FTP, or Web page address.

People Issues

In any computer project that you work on, there will be people issues that are just as important as the computer issues.

When I first started working on the SIG pages, I realized that some SIG leaders were probably going to want to create their own SIG pages. BMUG is an organization that supports and encourages individual creativity. Thus, I decided from the start that I would encourage any SIG leaders who wanted to create their own pages to do so. I would then link my central SIG listing page to whatever independent pages individual SIG leaders created along with the more standardized pages that I created. This strategy worked well. Some SIG leaders created their own pages, but many others were happy to have me create pages for them.

I also made the structure of my pages dynamic to reflect the fact that different SIG leaders have different needs. Some SIG leaders want to have their phone numbers on their pages, others don't. Some SIG leaders want to have links to Web pages or FTP sites on their pages, others don't. By making the SIG page tool flexible enough to handle the different needs of different SIGs, I was able to make all of the SIG leaders happy without having to make everyone fit into a "one–size–fits–all" template. Good programs adjust to fit the needs of the user; bad programs try to adjust the user to fit the needs of the program.

Maintenance Issues

All of the SIG pages need to be updated from time to time. Many SIG pages contain details about SIG meeting schedules which change over time.

Some of the maintenance issues are automatically handled by the SIG page generation tool. Each schedule item for a SIGs meeting schedule is stored in my SIG database. When pages are being generated by the SIG page generation tool, the tool automatically compares the date of each meeting to the date on my Macintosh's internal clock. Meetings that have already happened are automatically dropped from the schedule, and the whole schedule section is automatically dropped from the page if there is no current schedule information to report.

Make sure that the systems you build fit the needs of the people who will be using them. Don't try to make your users fit the needs of your system.

I also put a direct email link at the bottom of every page, so that users can contact me if they have questions or comments about anything on any of the SIG pages. This makes it easy for people to report problems to me if they see something that needs updating.

Conclusion

In conclusion, here a few points to keep in mind:

- If you are producing a large number of Web pages that have a consistent format, you may want to consider building or buying an automated tool that will generate your HTML code for you. If the number of Web pages you are producing is relatively small, you probably will want to create a simple tool to create static pages. If the number of Web pages you are producing is relatively large, a CGI application may be the way to go.
- When designing your Web pages, use only those features of HTML that make sense for your project, but don't get caught in the trap of merely replicating paper documents. If you are doing an automated page, create an HTML prototype before you begin automation, then make your system recreate your prototype code.
- Don't forget to consider the people issues involved with anything you create. Make sure that the systems you build fit the needs of the people who will be using them. Don't try to make your users fit the needs of your system.
- Keep in mind that your site will need maintenance. Design from the start so that your site will be easy to maintain. Have an email address on every page that lets people contact you if they find problems with the site.

Writing the SIG page generation tool for BMUG was a lot of fun. BMUG is internationally known as a Macintosh authority, and Mac users from as far away as Croatia have used BMUG's SIG pages to send email to SIG leaders asking for help. If you would like to get experience in working with the Web, you can volunteer to help with BMUG's Web site by sending email to BMUG's chief Webmaster, Dan Meriwether, at webmaster@bmug.org.

Michael Patrick Ellard is computer consultant who specializes in providing simple solutions to complicated information technology problems. His clients include Apple Computer and Southern California Gas. He can be reached at (510) 236–3033, at MikeEllard@aol.com, or via his homepage at http://www.mcgi.com/staff/ellard.html. Mr. Ellard has been a BMUG volunteer since 1986. He currently serves as the Treasurer of the BMUG Board of Directors.

SIGs & Conferences

A Brief Glimpse

BMUG SIG meetings are held several days of the week. The Conferences on the Planet, BMUG Boston, and BMUG Japan, are varied and many. Here is just a brief glimpse of some of these groups, and what they're about.

The BMUG Claris SIG

Thomas Benner, SIG Leader

What Is It?

This special interest group is designed to guide you through ClarisWorks, the best selling integrated software package, and FileMakerPro, the best selling database package. Everyone is welcome. Feel free to bring any burning questions or problems you are having as well as floppy disks for free sample databases, templates, and other helpful software.

First Friday: Emphasis on ClarisWorks

Third Friday: Emphasis on database (FileMakerPro & ClarisWorks)

However, questions on either program will be handled on both nights. Each night we look at tips, tricks, and shortcuts that can save you a great deal of time and prevent a lot of aggravation. Each session is designed to stand on its own, so feel free to start at any session. More information is available by calling the BMUG office at [510] 549-2684.

When:
First and Third Friday of Each Month
from 7:00 pm to 9:30 pm

Location:
the BMUG office,
2055 Center Street
Berkeley CA
One-half block west of
downtown Berkeley BART
between Shattuck & Milvia

Sample Timeline

October 4, 1996

ClarisWorks Part 1: Introduction to ClarisWorks

Topics: How to install. Overview: Identifying the various parts. Getting started.

October 18, 1996

Database Part 1: Introduction to Databases

Topics: What is a database? Why use a database? Setting up a database. Terminology. Types of database fields.

November 1, 1996

ClarisWorks Part 2: Font Management

Topics: Installing fonts. Font utilities. Types of fonts: outline, screen, printer bitmapped, TrueType and PostScript fonts. Solving font problems.

November 15, 1996

Database Part 2: Basic Elements of a Database

Topics: Database components (fields, records, and data files). Care and feeding of fields (database management techniques). Data Entry: tips, tricks, and shortcuts.

December 6, 1996

ClarisWorks Part 3: Introduction to Word Processing

Topics: Entering text. Editing text. Basic (character and paragraph) formatting.

December 20, 1996

Database Part 3: Manipulating Your Data

Topics: Navigation and data manipulation. Finding your data (capabilities, uses and every possible combination of the Find command). Sorting your data.

January 3, 1997

ClarisWorks Part 4: Word Processing Advanced Features

Topics: Paragraph formatting. Task Assistants. Writing tools.

January 17, 1997

Database Part 4: How to Design Database Layouts

Topics: Parts of a layout. Layout types. Current Selection. Customization.

February 7, 1997

ClarisWorks Part 5: Introduction to Painting and Drawing

Topics: How to work with graphics (clip art, images, etc.)

February 21, 1997

Database Part 5: Database Layouts and Scripts

Topics: Various modes. Tools. Automating your database with shortcuts.

March 7, 1997

ClarisWorks Part 6: Introduction to Spreadsheets

Topics: How to work with spreadsheets. Basic concepts. Data entry. Types of data. Cell selection. Formulas. Relative versus absolute. Charting.

March 21, 1997

Database Part 6: Introduction to Database Scripting and Buttons

Topics: Creating scripts. Summaries. Calculations. Importing and Exporting.

April 4, 1997

ClarisWorks Part 7: How to Put It All Together

Topics: Integrating text, graphics, spreadsheets, etc. into a single document.

April 18, 1997

Database Part 7: Database from Start to Finish

Topics: Demonstration of how sample databases were put together.

Database Design. Creating fields & layouts. Scripts & Buttons. Internet.

Bay Mac Women SIG

Hoai-An Truong, Moderator

Meets 2nd Sundays, 6pm-8pm at the BMUG office.
Moderator: Hoai-An Truong.
Phone: Flora (510) 644-4587.
Email: hoai-an@bmug.org.

SIG Description

In the summer of 1992, two BMUG members came up with the idea of starting an informal group for Macintosh users because we wanted an opportunity to share our enthusiasm and quest for knowledge with our friends and neighbors. We chose to invite our women acquaintances because we guessed many of them felt as we did: rather left out, overwhelmed, and frustrated by the sheer size and techie atmosphere of the big weekly BMUG meetings. However, we were still eager to share our enthusiasm for computing. It turned out that there were indeed other women who responded to the idea of a homey, user-friendly atmosphere where we could get to know each other, help each other, and trade information on specific projects and uses for Mac software.

We met in a member's home at first, then at a local scanning-shop for a while, and finally decided to see if we could meet at the BMUG office so that other local women could more easily find us and share the work of keeping the group going.

The Bay Mac Women SIG (Special Interest Group) of BMUG holds monthly meetings, the second Sunday of each month, in the BMUG offices located on Center Street in downtown Berkeley. Meetings will generally be at the BMUG office unless otherwise announced. Occasionally, we may meet at someone's home, or other parts of the Bay Area. Check the Woman to Woman conference on Planet BMUG for meeting updates & contact info, or send your email address to hoai-an@bmug.org to be added to the Bay Mac Women Events electronic mailing list.

Bay Mac Women also has conferences on the Planet BMUG and BMUG Boston BBSes. Within the conference are two folders, Gender Issues (Boston and Berkeley) and Woman to Woman (Berkeley only). Topics discussed range from job interview tips, to help in setting up Apple Remote Access, to lively discussions about shoes!

To women interested in participating: Welcome! Bring your questions and bring anything you think other people might be interested in, including current or past projects you have worked on, books, software, etc. We encourage any novices to speak up and ask questions at the meeting or in the online conference, since there are other novices who attend, and we are very willing to share what we know.

Bay Mac Women SIG members have the following in common: we are all women who like Macintoshes, we like to share our interests and knowledge & experience, we like to learn more about the computers we use, and we like to get together socially once in a while.

Welcome to the Power PC conference!

Ian Crew, Moderator

The purpose of this conference is to discuss all aspects of Power PC computers, including hardware, software, compatibility, or whatever. While the content of the conference generally tends to be on Power Macintoshes, discussions of any computer based upon the Power PC chip (whether a Mac, a CHRP/PowerPC Platform computer, an IBM RS/6000, or even something that hasn't been released yet) are perfectly appropriate and are welcomed!

If you have any questions or comments about the way that this conference is run, please feel free to write me!

LesBiGay SIG and Conference

Dale Davis & Michael P. Ellard, Co-Moderators

The LesBiGay SIG is primarily a virtual SIG, meeting in the LesBiGay SIG conference on Planet BMUG. This SIG has been created to encourage discussion and the exchange of information of interest and importance to the Lesbian, Bisexual and Gay community of BMUG. At the core of these discussions will be issues relating to the ever-expanding world of computing and the Macintosh. Appropriately, this discussion will include issues raised in society at large that can affect how Lesbians, Bisexuals, and Gay men go about their daily lives.

Consistent with BMUG's philosophy, we welcome the expression of all relevant points of view. Only with this free expression can we truly begin to understand and respect one another. As with all BMUG conferences and SIGs, the LesBiGay Conference is open to all, young and old, Lesbian, Bisexual, Gay and otherwise. Accordingly, no offensive language, personal attacks, or lifestyle bashing are permitted.

The LesBiGay SIG holds "real world" meetings quarterly. Announcements about the time and place are posted in the LesBiGay Conference generally three weeks in advance. Meetings have various formats, either technical or social, including special guest speakers, general discussion, product demonstrations, and information sharing, and an occasional pot luck.

Should you have any question or concerns about the LesBiGay SIG, please contact the co-moderators. We will be happy to assist you.

The Freedom Privacy & Technology Conference on Planet BMUG

Gilles Poitras, Moderator

Many years ago, way in the past, before the combined technical knowledge, human energy and spirit of BMUG members created Planet BMUG, there was the BMUG BBS. On the BMUG BBS there was a sleepy little conference for CPSR, the Computer Professionals for Social Responsibility.

When Planet BMUG came into being the CPSR conference was one that did not make the change to the new system. I had, at about the same time, started to co-moderate the CPSR conference on the WELL.

I felt that there was just too little activity in the old BMUG BBS CPSR conference to warrant its resurrection, so I proposed the creation of a broader conference to deal with the social implications of technology.

Thus came into existence the Freedom Privacy & Technology conference on the Planet. At first things were a little slow, with occasional bursts of discussion around issues and long slow periods, but on the whole it was a good conference. I would attempt to spark things up by occasionally posting announcements from various groups dealing with a variety of relevant issues.

In time others started joining in and contributing informative postings and discussions. Today thanks to the work of many others things run fairly well with little input from me. Mainly I check in to see if anyone is misbehaving; after all, arguments are fine but no name calling, spitting or biting is allowed.

So drop by, read a few postings, reply to some, or even heat things up a little by disagreeing with someone.

The first time you log in you will be greeted by the following welcome message from many years ago.

=+=+=+=+=+=+=+=+=+=+=+=+=+=+
Welcome.

This conference is devoted to the issues of Freedom, Privacy and Technology and where they overlap, hence its name.

Some possible topics for discussion are computer security, data collection on individuals by corporations/governments, censorship on electronic networks, legal issues, class barriers to access to technology, encryption software, intellectual property, ethics, and I'm sure we can come up with more.

Lets have a broad view of issues and see where the discussions lead."

Vintage Macs

Megan Lynch and Bob Rosas, Co-Moderators

Vintage Macs is perversely one of the youngest conferences on Planet BMUG and BMUG Boston. If memory serves me correctly, it started in Spring 1996. I was working Mac retail at the time and was struck by the number of people who were coming into the store after just having bought or inherited a compact Mac. These people were often taken advantage of by people who sold them the machines at 200 percent to 300 percent of their real worth. They were further shocked to find that there wasn't always software on the shelves for them to use on their Pluses and SEs. They were a new generation of computer users, not pioneer users, often retired folks and other people on limited incomes. They were often petrified at the idea of learning how to use their new purchase. I sent these people to BMUG. I suggested on the Planet that "someone" start a conference that concentrated on vintage Macs so that people could have a way to get in touch with each other, sell and trade software *legally*, and have something of a support group for their vintage machines. (We do not support actual ads in the conference, just pointers to ads in the appropriate Classifieds conference.) At the same time, Bob Rosas, a stalwart of TEAMSaturday on Helpline, also had concerns about there being a safe place for owners of pokey Macs. I think we had been venting about this in separate conferences on the Planet.

As many suggestors often find out, you have to put up or shut up. Carol Haberberger got Bob and me together (virtually), and the Planet powers that be created Vintage Macs. Boston soon gatewayed the conference. That's how Bob and I, neither of whom owns a vintage Mac, found ourselves moderators of the Vintage Macs conference. Bob has been especially helpful. He created the Welcome document for the conference and was quicker off the starting line than I was.

All sorts of topics, both software and hardware, are kosher for this conference, as long as it has to do with a vintage Mac. What is a vintage Mac? Well, that's a definition that keeps changing as Apple, Power Computing and now UMAX and Motorola come out with more machines that run the MacOS. The conference actually started with the name "Pre 7 Macs." That changed after more people wanted in and pointed out the limitations. We've had people who own 128K machines up to the Mac IIci. We're relatively loose about that. People are doing amazing things with their older Macs, and that's one thing that really sets us apart from PC owners. You can't run Windows 95 on a 286. Yet there are many people who are running System 7 and up on their compact Macs. One notorious Vintage Mac'er even uses a Zip drive on his Plus, something Iomega, the Zip drive's manufacturer, claims can't be done.

It's been satisfying to see a lot of BMUGers come out of the closet about their vintage Macs. I think it helps that there is now a visible area for vintage Mac owners. Come visit us in the Conferences area and learn how to tame your System 6 fonts as well as which versions of common Internet programs will work on your older Mac.

Planet BMUG's Sports Conference

Fred Swan, Moderator

Sports is one of the more active folders on Planet BMUG, showing that, despite stereotypes, computer enthusiasts do sometimes leave the house. The threads in this forum typically involve commentary on professional and collegiate athletics. Most discussion involves the country's top four sports: baseball, basketball, football, and hockey. However, soccer, tennis, golf, and others often come up as well.

The threads are often lively as the competitive spirits between fans of opposing teams or regional rivals take hold. The forum is also shared with Boston which adds even more interest.

Sports is the place to vent about your team, ask questions about the latest trades, make predictions for the post-season, and wax philosophic about sports as a microcosm of society.

The Mac Price Conference

Sam Penrose, Moderator

The Mac Price Conference can make your BMUG membership fee pay for itself many times over. Every day people discuss the prices and values of a range of new and used systems. New users who have no idea what they should get receive detailed advice on a range of options. Experienced users bicker over the relative merits of obscure hardware products. If you need help knowing what to buy and how much to pay, ask in the Mac Price Conference.

Music and Sound Special Interest Group

or, How To Make Your Computer Noisier Than You Thought Possible

by Peter Adler

Since the very beginning, the Macintosh has been a computer capable of making sound. For years, this ability was used mostly by a small coterie of musicians in universities and recording studios, and for system alarm sounds. Now, with the advent of multimedia on CD-ROM and the World Wide Web, music and sound capability are within the reach of every user.

The Music and Sound Special Interest Group (SIG) was formed in July 1996 to create a place for the audio-interested to share projects, ask questions, learn new techniques and examine the newest products in Mac music and audio.

In the first three months, we conducted an overview of musical applications for computers (notation, sequencing, digital audio recording, MIDI, sound synthesis, and computerized composition), did a review of prominent MIDI and .MOD applications, and conducted a session on simple digital sampling using PlainTalk microphones and Shareware applications such as SndSampler and SoundEffects. Upcoming meetings will include notation applications and sound optimization for the Web, including streaming formats (the sound starts playing as soon as it gets to the browser, with the rest downloading in the background—no waiting!).

Music and Sound SIG activities are posted on the Planet BMUG BBS, in the Computers&Musicians folder (Conferences>Entertainment>Music>Computers&Musicians). BMUG also maintains a Web site at http://www.bmug.org/Services/SIGs/MusicAndSoundSIG.html, which tracks current events. In addition, we maintain a site for downloading Shareware and Freeware applications at http://www.hooked.net/~adlerpe/BMUG/, where you will find the most current versions of over 20 different control panels, digital recorders, MIDI and .MOD player/recorders, and notation applications. Upcoming projects include a CD-ROM with demo versions of commercial music applications, so that users can do a full comparison of features before purchase.

We provide projects for users at every level: musicians just learning about computers, computer jocks just learning about music, and everyone in between. Our Web site has applications usable on any Mac with a 68020 processor or more, and there is a list of applications that can be used by 68000 processors.

The Music and Sound SIG meets on the fourth Friday of each month at 7pm at the BMUG Main Office, 2055 Center Street, Berkeley, CA. Anyone wanting more information on our activities is welcome to contact me on the Planet (Peter_E._Adler@bmug.org) or on the Internet (adlerpe@hooked.net).

We look forward to seeing you there (and even better, to hearing you!).

Peter Adler is a Macintosh consultant in Berkeley, moderator of BMUG's Music and Sound SIG, moderator of the TelecomEssentials series, and a member of the Internet SIG. He is a graduate in composition from the University of California at Berkeley, treasurer of the Bay Area Accordion Club, and a former director of the San Francisco contemporary concert organization, Composers Anonymous. He has designed Web sites for a number of musical organizations, including Strictly Tango (http://www.sirius.com/~parlando/strictlytango/) and the Bay Area Accordion Club (http://www.hooked.net/~adlerpe/BAAC/). He is currently acting as a technical assistant to Raines Cohen for the upcoming IDG book, "Creating Cool Web Sites With Interactive Databases", to be released in January 1997.

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Reviews

Hands-Free Macintosh!

PowerSecretary 2.0.6
Getting Closer to Plug and Play Voice Recognition

by Jonathan Arthur

Introduction

Anyone remember the scene from *Star Trek IV: The Voyage Home* , when Scotty and the Enterprise crew are in present-day San Francisco? (Of course they shot the movie in Mac territory.) Scotty goes over to an SE and speaks to it. (Mac Plus or SE, anyway it was a compact Mac.) When it doesn't answer, a 20th century bystander says to Scotty, "use the mouse," so he picks up the *mouse* and speaks to it, saying, "Computer... Hellloooo Computer..." or something to that effect. Of course it still doesn't answer, but we all wanted it to. It was a great scene, and I recommend the movie, but the point is, people, *that future is here.* There are no less than four major voice-activated software packages out there for personal computer users. Fortunately, we have a premiere quality package available on the Mac: PowerSecretary. In addition, the deluxe version includes QuicKeys, and to my knowledge there's no macro program equally good on the PC side.

You're all on notice that I intend this review to be fun to read! Remember, this is still a users group newsletter article, and after all, Dilbert doesn't work here. We use *Macs* at BMUG. Onward!

What PowerSecretary Does

PowerSecretary lets you run your Mac with your voice. *Cool*. It's a complex *voice-dictation system*, not just an application, meaning the complete version comes with lots of hardware, manuals, disks, you name it. It's expensive, at $1,999 for the full version and $595 for the *Personal Edition*. (No, don't be envious, I didn't get a free review copy, I bought this a while ago for acute RSI.) However, it's worth it if you need it.

This is not plug and play dictation in a box, but we're getting closer. It is however, a system, which when properly installed allows you reliable and nearly total voice-control of your Quadra or faster Macintosh.

Also, the price has come down $1,000 in a year and will continue to drop as voice recognition technology comes into more standard usage. *Pricing almost certainly will be lower by the time this article is out.* Rumor is there will be a special BMUG price, so check in with the BMUG specials folder on Planet BMUG. I'll work on it.

PowerSecretary works well, is relatively simple to install, and is ready to begin dictating after just 1.5–2 hours of training. Further training increases the efficiency to about 98% word recognition at a typical 45–55 wpm for a PowerMac user with a lot of RAM. This is not plug and play dictation in a box, but we're getting closer. It is however, a system, which when properly installed allows you reliable and nearly total voice-control of your Quadra or faster Macintosh.

Depending on the package you buy, PowerSecretary, once trained, transfers English voice input to text or numbers; can run AppleScripts, QuicKey shortcuts and other macros, and Finder menu commands; and provides a pretty good hands-free Mac experience. Plus, you can use it to cruise the Web. It runs just fine with Netscape, thank you. (Even though Netscape is still prone to crash independently—but I'm getting off on a tangent.)

As of October 24, 1996 the following editions and pricing were available:

Power Edition

$1,995. This edition is advertised for educators, lawyers, business executives, journalists (yes, this works on many PowerBooks), the physical or learning disabled, RSI sufferers, and rich folk. It includes AppleScript and QuicKeys. This is the one I use. It contains the largest dictionary, 180,000 total words, a 60,000-word main dictionary and a 120,000-word backup dictionary. It works with most Macintosh applications. Its capabilities include extended macros, QuicKeys, Finder and scripting functions. This edition requires 19–20 megs of application RAM with entire vocabulary loaded. I don't usually use the extra vo-

cabulary myself, as I prefer running the application using 13 megs of RAM.

MED Edition

$2,495. This edition is promoted to physicians, nurses, physician assistants, other healthcare professionals, medical transcriptionists, and healthcare administrators. It contains the same dictionaries as the Power Edition but with Specialized Medical Terminology as well. This includes the same macro and scripting abilities as Power Edition plus QuicKeys. It includes a customized healthcare language model for higher accuracy with medical terms.

Personal Edition

$595 introductory special. This edition works with one of four applications only: Word 6, FileMaker, WordPerfect, or ClarisWorks. For an extra $200 or so (check for prices when ordering) you can add an application. ClarisWorks and FileMaker for about $800 gets you the most bang for the buck. This version is not fully scriptable, nor does it include QuicKeys. But you can add that on your own. It comes with a smaller dictionary but is still very functional if you mainly want voice dictation and aren't physically disabled. This version makes an affordable solution for RSI folks. (RSI is a disability, but most RSI patients still have some use of their hands, which a quadriplegic, for example would not.)

Upgrades

Upgrades are one reason for registering. These will cost just *$9.95* —the cost of shipping. For example, I'm upgrading my Power Edition v2.0.3 to 2.0.6/7 for that price. Nice. You do need your registration number, as you should. Plus, pirating won't help you. You need a special pre-amp and microphone. If this product works for you it's worth purchasing.

Who PowerSecretary Helps

- Anyone whose hands and wrists are tired
- RSI (Repetitive Stress Injury) sufferers
- The physically disabled
- Medical Professionals
- Those with a temporary injury—like those with broken wrists, and a deadline due on that Sci-Fi short story
- Poor typists

MED Edition includes a customized healthcare language model for higher accuracy with medical terms.

- Business executives
- Those seeking higher productivity and the better use of macros.

What PowerSecretary Doesn't Do

- It's not an out-of-the-box solution until it has been trained.
- It won't run well on anything older or slower than a Quadra 650.
- It doesn't contain its own spell checker (at least not in version 2.0.3, which I used for this review), so you're dependent on your word processor. If you teach it a wrong spelling, that's what you'll dictate. On the other hand, once it learns the word correctly, you'll always get the same spelling of a dictated word. So you don't need a spell check feature as much. However, any word processor worth its salt already has its own spell checker.
- It won't start the computer up by speaking to it. This would be a nice feature to figure out, especially for folks with a physical disability. Also it would be nice to be able to dictate without putting on the headset. (Will the new mic due this spring help out here?) Maybe Articulate could get together with the PowerKey folks and offer some kind of bundle. (Hope you're reading this, Gerry…)
- It's not a substitute for Ghiradelli's Super Rich Hot Chocolate.

System Requirements

Hardware

PowerSecretary works with Quadra 650 or better, plus all PowerMacs except the 52XX and 62XX Performa family. Models were verified by Articulate as compatible as of August 1996 (http://www.artsys.com/asi/products.html).

Here are the computers and special configurations required to run PowerSecretary:

Quadra 650
: Requires add-in Nubus sound card. Slow performance.

Quadra 660AV
: Slow performance.

Quadra 700
: Requires add-in Nubus sound card.

Quadra 800
: Requires add-in Nubus sound card.

Quadra 840AV

Quadra 900
: Requires add-in Nubus sound card.

Quadra 950
: Requires add-in Nubus sound card.

PowerComputing Machines
: PowerWave, PowerCenter, and PowerTower.

PowerBook 540 and 540c

Power Macintosh 6100, 7100, 8100

Performa 6110–6117CD

Performa 6118CD
: Used in a 40 Meg RAM/500 Meg HD configuration for this issue.

PCI Power Macintoshes 7200, 7600, 8500, 9500
: Requires PowerSecretary version 2.0.4 or later

PowerBook 5300
: Requires PowerSecretary version 2.0.4 or later

Note: The 52XX and 62XX Performa family of Macintoshes *are not* compatible. These entry-level Macs process sound input less reliably than other models. According to Articulate, this exaggerates speech recognition inaccuracies. These Macs are not reliable options for use with PowerSecretary. Also, I have no information on any Radius or UMAX clones. If you want to run PowerSecretary on a machine other than those listed give the Articulate sales department a call first to be sure.

PowerSecretary is also compatible with all 68K Macs which have been upgraded to Power Macintosh via the Apple Logic Board upgrades, but they require sound input cards. These are included from the manufacturer in the purchase price, so be sure to specify your Mac type when ordering.

Basically, you want a fast PowerMac with a lot of RAM. The program itself needs 13 megs to run—19 megs if you have the full dictionary loaded in the Power Edition. The voice processing is actually done in RAM. This is *not* an occasion to use RAM Doubler. I suggest at least 32 Megs RAM and a minimum 60 MHz PPC Processor. However, I got excellent performance myself on a Performa 6118 (6100 PPC 601 chip) running at 60 MHz with a 256K Cache, 40 megs of physical RAM, and Speed Doubler set with a software cache of 1024K (1 meg).

I have run the software cache at 256K when I need the room for more apps; for example, when Net cruising with PowerSecretary, Netscape, WordPerfect, and Photoshop all loaded. Articulate suggests that you buy the fastest processor you can find, but based on my experience, you probably won't speak fast enough to justify a processor faster than 150 MHz for now. Of course, we'll see 300+ MHz processors soon, but you don't need to spend the money for a 9500 or the fastest Power Computing clone to get good use from PowerSecretary.

System Software Compatibility

PS needs System 7.5 or later. I tested it using 7.5.1, 7.5.3 (update 2.0), and 7.5.5. I encountered occasional problems with 7.5.5, but these happened even when I wasn't running PowerSecretary so I suspect a bug in the OS release. (There have been reports of 7.5.5 crashing because applications and the Finder aren't being allocated sufficient memory at times. A good source for info on new System release problems is the MacinTouch column in MacWEEK.) Anyway, if you're not using a PCI PowerMac, System 7.5.3 ran the most reliably for me. If you have problems after you've purchased the product, Articulate has *excellent technical support,* which will hopefully continue under the new Dragon Systems ownership.

Software Compatibility

In terms of other software, I ran PS with Disinfectant 3.6, WorldScript, ATM 3.9, Global Village 2.5.5, Word 6, WordPerfect 3 (PPC native version), Nisus 4.1, AppleTalk active (both LocalTalk & Standard Ethernet), MacTCP, Netscape 2.02, Excel 5, Inspiration 4.1, and FileMaker Pro 2.1. Sorry, PS does *not* work well with Word 5.1. However it should be noted that PowerSecretary comes with a complete set of macros designed specifically for WordPerfect, which I prefer anyway. WordPerfect is really your best bet with PowerSecretary, although I like Nisus as well.

Articulate suggests that you buy the fastest processor you can find, but based on my experience, you probably won't speak fast enough to justify a processor faster than 150 MHz…

I would have liked to try out PS with Spanish and see if there are other language versions available—particularly a Hebrew version. I didn't have time or space to include that in this review, but I'll do my best to review foreign language voice-dictation (how English-centric of me, I mean *non-English* voice-dictation), in a future issue of The BMUG Newsletter. By the way, if you have experience with a voice-dictation product that is adapted for use with Spanish, French, Hebrew, or Arabic, I'd be interested to have your input. When PowerSecretary was demonstrated at a BMUG main meeting in 1995, Articulate did say the technology (licensed originally from Dragon) is portable to other languages.

What I Got with the Power Edition v2.0.3

- PowerSecretary User Guide
- PowerSecretary WordPerfect Macro Addendum
- Fourteen PowerSecretary Diskettes (or CD for later editions)
- PowerSecretary Headset Microphone
- Complete Version of CE Software's QuicKeys Program
- PowerSecretary Microphone Pre-Amp
- Registration Card, License Agreement, and Warranty Card

Installation

Ah, the fun part. I first did mine from floppies in October 1995. Fourteen floppies if I recall. Fortunately it's now available on a CD version as well. This is one software system where you must read the manual! Luckily it's clearly written, concise, and comes in a nice binder.

The first thing to do is, yes, send in your registration card. This entitles you to important upgrades and technical support. Also, check that you received everything ordered. Next, make sure you've got at least 25 megs of free hard disk space. More is nice. You'll want lots of room for backups of your vocabulary files. If you're going to have more than one user, you should allot 5 megs of hard drive space for each user. It's also a good idea to run Disk First Aid to make sure your hard drive directory is healthy.

Next, install your sound card if necessary (certain Quadra models), the microphone headset (leads to your sound input jack), and the pre-amp (powered off the ADB port). There is an in-line continuation so you can still plug in your keyboard or other ADB devices. See your manual for further instructions.

One word about the headphone—it's critical to keep it to within one-half inch (13mm) of your mouth when speaking. It seems to work best to keep it at one of your mouth corners, not directly in front. You may have to play with it a little to get the optimum positioning. Also, when dictating, stay at least 18 inches away from your monitor and CPU so the mic doesn't pick up noise interference.

Okay, now boot with extensions off by holding down the Shift key on start-up, then install PowerSecretary, then the

Figure 1 Adjusting Sound input with the Sound control panel

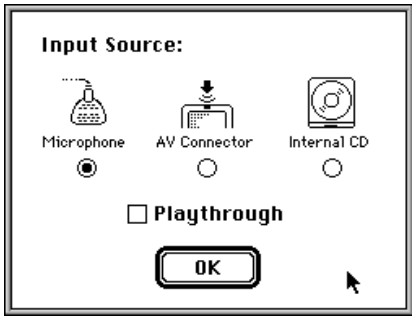

Figure 2 Adjusting Sound input using the Input Source Option of the Sound control panel

Vocabulary, and then QuicKeys. Reboot and rebuild your Desktop. The final step is to open your Sound control panel and make sure it's correctly configured for input with your mic (see Figure 2). From the Sound-In option choose Built-in if you have a PowerMac, or PAS 16 if you have the add-on 16-bit sound card (see Figure 1). I won't list the numerous installed files here or where they go, because there's a complete description in the manual. But remember, if you're using a utility like Conflict Catcher or Extensions Manager, make sure all your newly-installed control panels and extensions are turned on! You might want to make an extensions set just for PowerSecretary. Get yourself a drink of your favorite beverage. Now you're ready to begin training.

Training

Training is broken up into three stages: Voice Classification, which takes 5 minutes, Initial Training which takes about 2 hours and gets you to between 90 and 95% recognition accuracy, and then a third period of Intensive Training, where you gradually build up voice recognition accuracy. This last period varies, but to really get good it's an investment of 10–20 hours of training. After that, the accuracy will continue to slowly increase over time if you're training properly. Remember to have some of that beverage. As you use PowerSecretary you won't strain your wrists, but it will help to wet your whistle as you dictate.

The Voice Classification consists of reading about twenty words into the mic. This helps PowerSecretary determine your voice type. You'll first see the Status window, which is a small floating palette (see Figure 3). This palette, when enabled, will float above any application and is always available. In fact, I found it a bit annoying at first, but if you really want to you can hide it. It indicates whether your mic is on, off, resting, or receiving dictation; it also lists words, commands, or macros as you dictate. You can also tell what mode you're in by alternating colors under the mic indicator. It then opens a Save file dialogue automatically so it can save your voice model file, generates a default vocabulary file and preferences file, and then it opens the initial training dialogue.

The Initial Training can take as little as 90 minutes or as long as 3 hours. It consists of repeating word-for-word lists of basic vocabulary, commands, QuicKeys macros, and Text macros. You say individual words and short phrases. If you have trouble with particular vocabulary, a window pops up automatically and asks you to repeat the word three times to make sure it's learning the word or phrase properly. Also, during the initial training you have the Vocabulary window up all the time. It shows a list of words in your dictionary. An italicized word means you've not yet trained with that word, regular text indicates you've already taught PowerSecretary how you pronounce the word.

Finally, once your Initial Training is finished, you're ready to open up an application and start dictating. There are some limitations. You have to pause when speaking. At first you pause a lot, then later, much less. However, you soon get the hang of it. I can get about 50 words per minute. I know other people who get more, some less. The default *dictation word gap* (see preferences) is set to 190 milliseconds between words. I find myself moving the setting to between 130

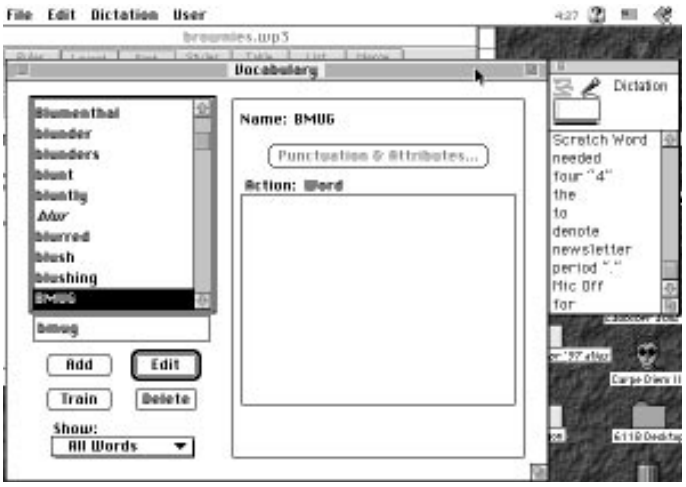

Figure 3 The Vocabulary window and Floating Status Palette

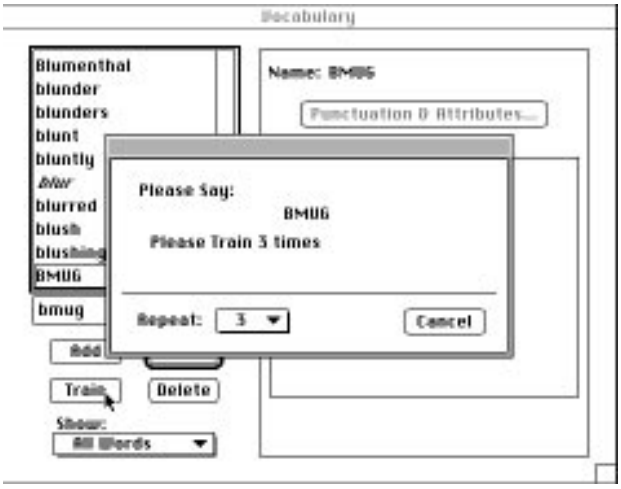

Figure 4 Intensive Training with BMUG

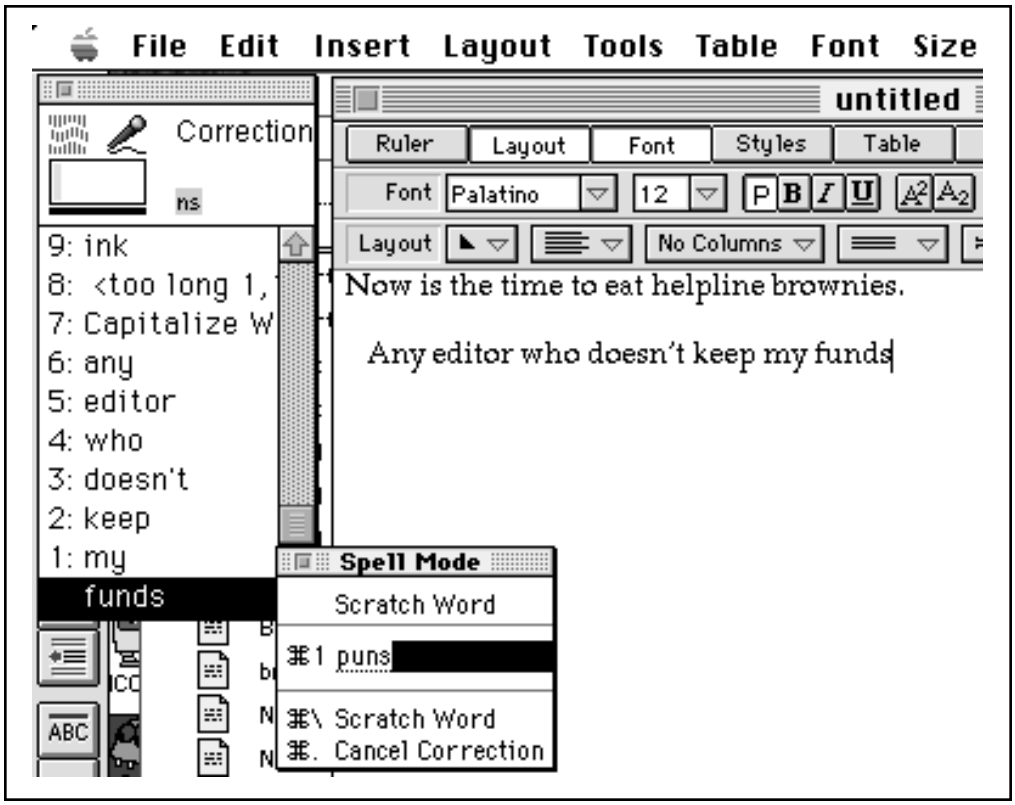

Figure 5. Spelling window with WordPerfect

and 150 once I've built up the accuracy by dictating for a while and then saving. This also helps you vary dictation speed. During this period, expect to do a fair amount of Intensive Training (repeating vocabulary 3 times - see Figure 4). Also, sometimes PowerSecretary incorrectly learns a word and you have to retrain it.

For numbers, you say "numeral" before all numbers from 1 to 9. Above that you say the number itself. Otherwise PowerSecretary will give you a *four* instead of *4*. You sometimes have to go into the handy Spell mode (see Figure 5). If PowerSecretary really can't understand you, or you need to dictate a spelling, this is available as well. It operates after the Nautical call signs (Alpha, Bravo, Charley for A, B, C). After a while, PowerSecretary will learn your speaking style. The important thing here is to try to be consistent. Also, *remember to make backups of your Voice Recognition files!*

Future Releases

At this writing v2.0.7 is due out in November 1996. Also, I was graciously given a long phone interview by Gerry Foley, Product Manager for PowerSecretary. He tells me that even though Articulate Systems was acquired by Dragon Systems in August 1996 (they own the original technology and distribute DragonDictate for the PC side) they are encouraging the development of PowerSecretary and definitely will continue product support. So look for a major upgrade (perhaps v3.0?) sometime in spring 1997. This will reportedly feature more Drag and Drop capabilities, a new "universal mic" and an improved interface. Maybe we'll even get that PowerKey bundle.

World Wide Web:
http://www.artsys.com
http://www.dragonsys.com/marketing/mac.html

Snailmail:
(Merged with Dragon Systems Summer 1996)
Dragon Systems
320 Nevada St.
Newton, MA 02160

Telephony:
Dragon Sales/Customer Service
(800) 443-7077
Fax: (617) 935-0490 (PowerSecretary)
Fax Back Info: (617) 527-4568 (PowerSecretary)

Minimum System Requirements:
Operating System 7.5 or later.
Quadra 650 or faster Mac with 16-bit sound capability. Nubus sound cards available.
24 megs of RAM
30 megs of hard drive space

Recommended System:
PowerMac with 32–48 megs of RAM and lots of hard drive space.

Jonathan Arthur drives a Performa 6118, 40/500 with lots of goodies, and a PowerBook 140, 8/340. He alternates between running his computer consulting and training business, Chocolate INK, munching chocolate, studying Talmud, recovering from RSI, and leading the Thursday BMUG Helpline (good Lord willin' and the creek don't rise). He has been known to tell puns. In spite of this Helpline volunteers still come by. We suspect it's for the homemade brownies and M&Ms. He can be reached via email at yonatan@lanminds.com or jonathan_arthur@bmug.org.

BBEdit 4

It doesn't suck

by Julie Bernstein

Bare Bones Software got it just right with the slogan for their wonder child, BBEdit. "It doesn't suck" is quite an understatement for this great program, but it's a good synopsis. This program does its job very well, and does it cleanly and unpretentiously.

What is it?

BBEdit is a text editor. It is very different from a word processor, which is designed for creating formatted documents ready for publication. BBEdit concerns itself with the manipulation of words and other combinations of characters, not with how the output looks on the page or screen.

Compared to many text editors, however, BBEdit is unusually powerful. It can open very large documents (no SimpleText 32K limitation here), search and replace among multiple documents, and integrate with Internet, scripting, and programming environments.

Programmers will find BBEdit a helpful companion to their favorite compiler. The program features customizable syntax coloring of source code, support for MPW ToolServer, and integration with THINK C, Symantec C++, Metrowerks CodeWarrior, and other programming environments.

Web authors have long used BBEdit as an HTML editor. The latest version integrates a floating palette of HTML tools, syntax checking, and a one-click switch to a browser for preview, among other features.

General features

BBEdit has far too many features to mention here. A few of the most notable include the following:

Macintosh savvy

BBEdit is a good Mac citizen, supporting Macintosh Drag and Drop, Apple Guide, Internet Config, and AppleScript (and Frontier), and containing native PowerPC code.

Unlimited file sizes

File size for BBEdit is limited only by available memory, with a 2GB theoretical maximum.

Powerful search and replace

BBEdit supports multi-file search and replace, so you change the same text string in a whole folder or disk full of text files at once. Using optional "grep" patterns, you can search for a word or text string matching certain criteria, such as beginning or ending with a certain letter.

Find differences

BBEdit can compare two files, folders, or projects to see where they differ, and copy the differing portions from one to the other.

Extensions

Functionality can be expanded by adding extensions, which go inside BBEdit's extensions folder and not inside the System Folder. Many extensions are included with the program, including HTML features. Keyboard shortcuts can be assigned to all extensions.

Spell checking

BBEdit contains a spell checker, which is HTML-savvy (it skips over tags). Several specialized dictionaries (medical, Dutch, etc.) are included.

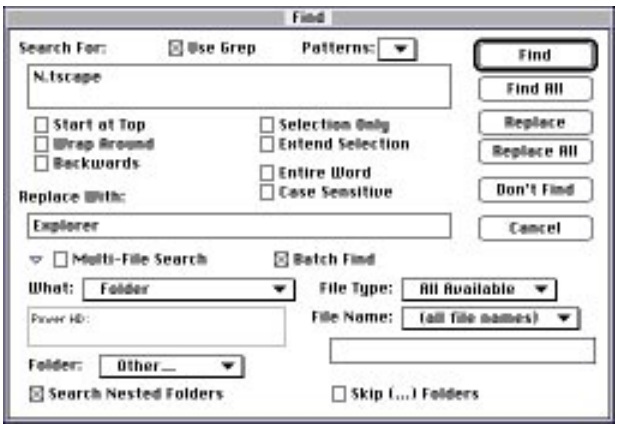

Figure 1. The powerful Find command allows pattern matching and multi-file search and replace.

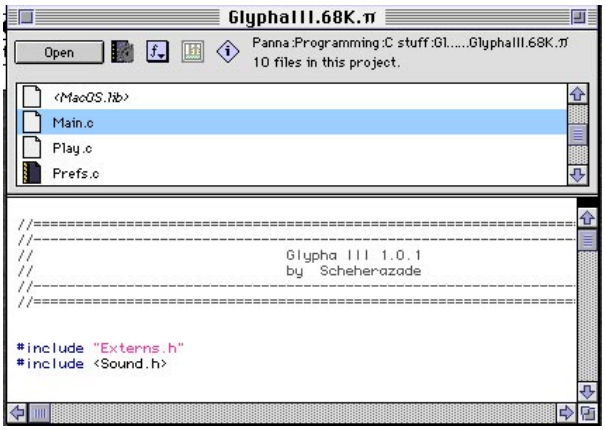

Figure 2. Open project files to browse source code.

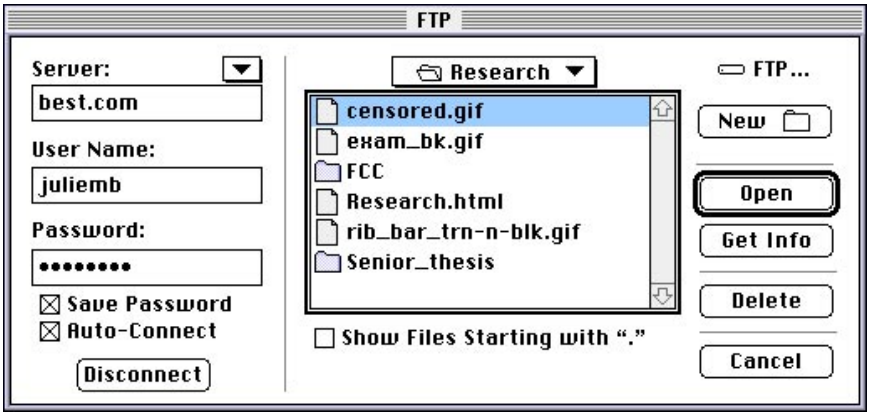

Figure 3. Download and edit files from FTP servers directly with BBEdit.

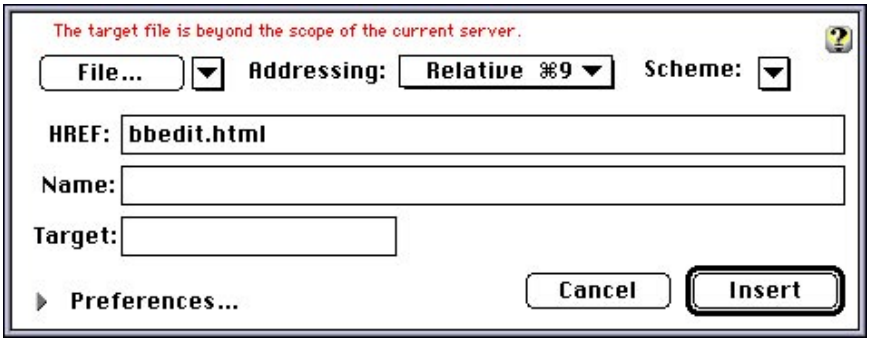

Figure 5. Insert links quickly with the HTML Anchor tool.

Figure 4. The floating palette provides one-click HTML markup.

Programming features

Syntax coloring

Text in source files (including HTML) can be colored to make it easier to find keywords, comments, and the like.

Project browsing

You can open a THINK Pascal, THINK C/Symantec C++, or CodeWarrior project in BBEdit and browse the associated source files.

Function popups

A function menu allows quick navigation of source files by scrolling instantly to the function (or HTML header) selected.

Web features

Server mirror

BBEdit encourages you to create a mirror on your hard drive of the server you're working on. Once you tell BBEdit where the root of the mirror server is, the program can check link validity within the server structure. When you're ready to move the files to or from your live server, you can transfer them using FTP protocol from within the program.

Floating palette of HTML tools

A customizable floating palette of HTML tools allows you to enter HTML tags with a single click.

Anchors

Including links to HTML documents is straightforward. Simply highlight the text to be linked, click the Anchor tool, and type in the URL. If the text itself is a URL or email address, BBEdit will automatically enter the URL in the Anchor box.

Images

Inserting image tags into HTML documents is also simple. A dialog box allows you to enter the pathname or click a button to browse your disk for the image, or you can drag the image into the text file to make the dialog box appear. The correct pathname (full or relative as you choose) is inserted and the dimensions are calculated, and you can specify an ALT tag and other characteristics.

Tables

BBEdit can create tables, either from scratch or by converting them from delimited text.

Preview

Click the Preview button in the HTML tools palette and BBEdit switches instantly to the browser of your choice to view the page. You can specify more than one browser and click the arrow next to the Preview button to choose a different viewer.

Syntax checking

A built-in HTML syntax checker alerts you to errors in your code. Of course, as HTML standards evolve this feature will need to be updated. Fortunately, Bare Bones Software provides email alerts to its registered customers and makes minor updates available to all from its Website.

Why not WYSIWIG HTML?

I have done *all* of my Web authoring in BBEdit, ever since my very first foray into HTML in August 1994. In that time I have tried many other editors, but have not found any that I am comfortable with. None of the so-called WYSIWIG applications give me the sense of ultimate control I have with BBEdit. I don't want to have to open the source with a text editor or even switch to a different window to tweak it. With BBEdit the source is right there, and with one click I can preview it in a real browser, not in a pseudo-browser window.

Documentation

BBEdit contains excellent online Apple Guide and Balloon Help, HTML tools documentation in HTML format, and manuals in PDF format. Sample templates and scripts are also included, as well as a programmer's guide for writing extensions.

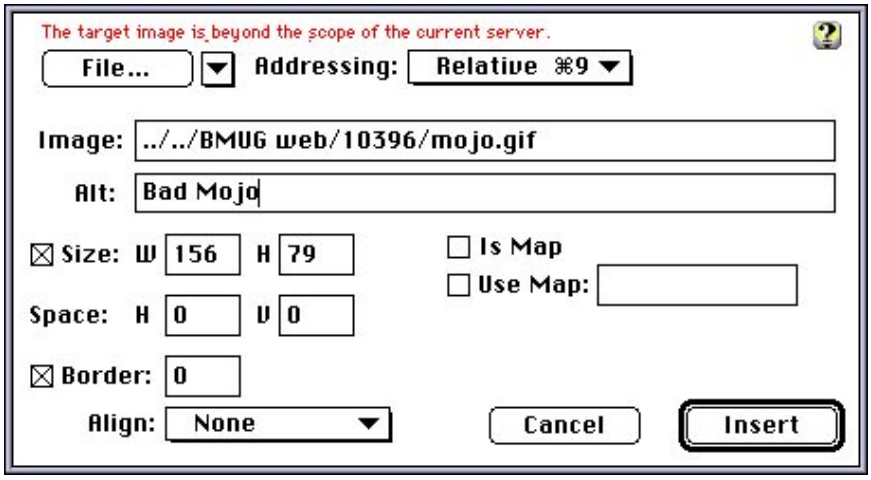

Figure 6. Images are automatically sized when placed.

Commercial vs. Lite

While the freeware BBEdit Lite is a fine text editor in its own right, the commercial version has many advantages that make it well worth the price. BBEdit Lite lacks Macintosh Drag and Drop support, scriptability, spell checking, Apple Guide, and many other useful features. However, much of the core functionality of the full BBEdit package is present, so it is worth trying out before investing in the commercial product. Also, a full-featured demo (lacking only the ability to save) of the commercial BBEdit is available for download from Bare Bones Software's Website, so you can compare the differences without spending a dime.

Conclusion

I wish I could find something negative to say about BBEdit, to give the appearance of a more balanced review. But to be honest, I can't find anything wrong with it. I love this program, and I use it practically every day for all of my HTML and most of my text-based work. I strongly recommend this product to every serious Web author, programmer, and anyone else who manipulates text files.

BBEdit 4
Minimum System Requirements
RAM: 700K min, 1000K recommended
(1851K/2151K for PPC without VM)
Disk space: 4MB (typical install)
System: 7.0 required,
7.5 recommended
CPU: Macintosh Plus or later
Price: $119;
$79 competitive upgrade/related product discount/educational price (academic/faculty/staff)
$39 student discount

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Spell Catcher

No More (Misteaks) Mistakes!

by Peter Goodman

Several years ago I found myself completely fed up with QuarkXPress's anemic spellchecker, and obtained a copy of Thunder 7. Thunder 7 was a spellchecker with a difference; it didn't work "inside" any single program but was available to all Macintosh applications equally. You could use it with your word processor to spellcheck a document and create a custom dictionary, and then use that same custom dictionary to spellcheck text you had ported over to a page-layout program, an illustration program, or even an email file. Very convenient, and a great way of preserving consistency over the lifetime of a project.

You could use [Thunder 7] with your word processor to spellcheck a document and create a custom dictionary, and then use that same custom dictionary to spellcheck text you had ported over to a page-layout program, an illustration program, or even an email file.

Boy, was I dumb. I ended up returning Thunder 7 for a refund, because I didn't like one feature of its spellcheck as it applied to Quark. You couldn't check an entire document at one time, only what Quark calls a "story," or text that is "linked" from beginning to end. So, if my document was in several discrete text boxes, I had to check each text box separately with Thunder 7. A small price to pay, you say, but I was foolish. Two months later, when I came to my senses, I tried to get another copy of Thunder, but by then it was gone, ejected into the maw of redevelopment as its former publisher went down in flames.

Finally, Thunder is back, renamed Spell Catcher to fit into the product line of Casady & Greene (the same folks who publish Conflict Catcher). Spell Catcher seems largely the handiwork of Evan Gross, Thunder's original developer, and a saintly sort who is regularly available on various forums (including CompuServe and America Online) to guide his users to spellcheck heaven. The program is, literally, a blessing, certainly to anyone who has ever used Quark, but to everyone else as well. It's smart, fast, user friendly, fully developed, flexible, and accessible—and the manual's not bad either. . .

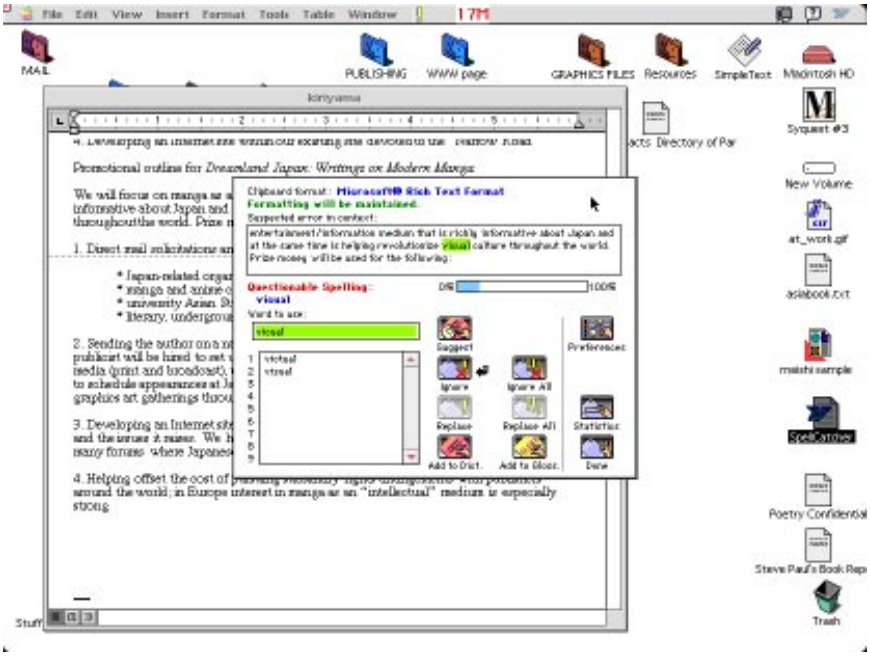

Figure 1. Spellcheck: The heart of Spell Catcher is the spellcheck window. Functions here are pretty standard. Note how easy it is to access the Preferences, even from here.

Spell Catcher doesn't do everything, but it does plenty, and has some delightful bells and whistles that could only be the product of consultation with wordsmiths and copyeditors.

Spell Catcher helps you correct spelling errors in two modes: interactive and by forced selection. In interactive mode, Spell Catcher captures keystrokes as you type, and silently compares them against its Main Dictionary (86,000 words) and whatever supplementary dictionaries are loaded, as well as a "shorthand glossary" of custom abbreviations for frequently typed words and phrases. When it runs across a glossary entry, such as "sc" for "Spell Catcher," it automatically expands it. When it comes across a word it doesn't recognize, your Mac will discreetly alert you of a possible error by making a sound or silently flashing the program's menu bar. You can then correct the error on the spot, by hand, or do a forced selection check—assuming there is really an error, of course, since some fairly common words do get flagged as suspect.

In interactive mode you can also set the preferences to disallow two consecutive spaces (anathema to typesetters); to catch, and in some cases, repair common capitalization and punctuation errors (no cap at the beginning of a sentence, a comma outside double quotes, for example); to automatically change two hyphens to an em dash, and so on.

In forced selection mode you highlight the text you need to have spellchecked, and choose "Check Selected" from the Spell Catcher drop menu (or you can use a customizable hot key). Spell Catcher then copies the entire selection to the Macintosh Clipboard, and opens up a window as it cruises through the selection word by word, stopping wherever it finds a suspect spelling or

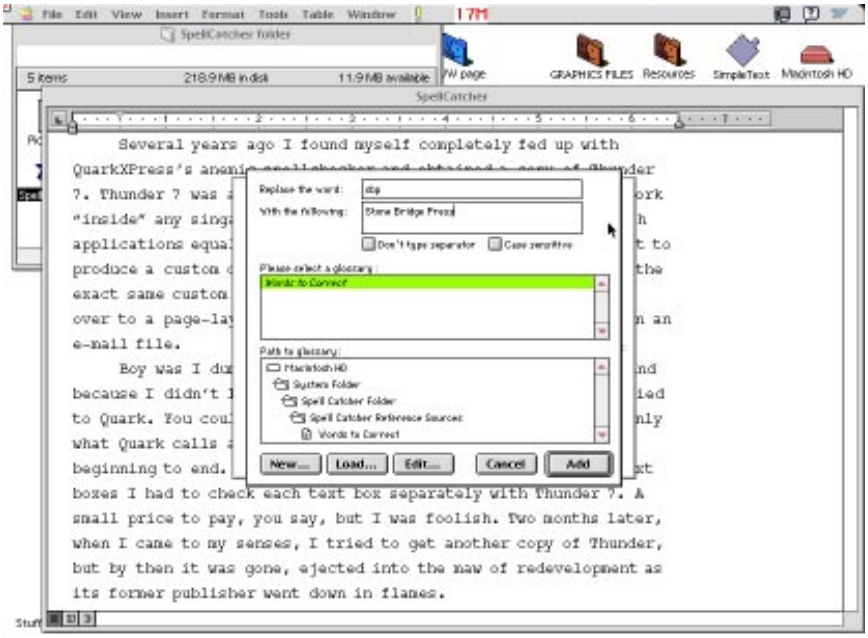

Figure 2. Shorthand: You can have any abbreviation be immediately expanded as you type. For example, "ddd" can be set to expand to today's date. Formatting, however, is not included in the expansion command.

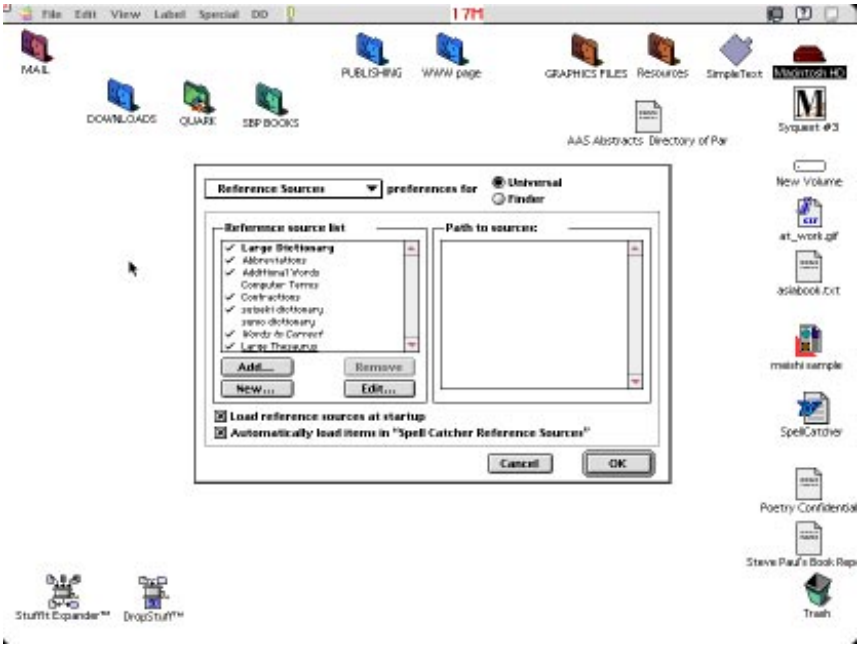

Figure 3. Preferences: You can determine which dictionaries are loaded into memory as well as customize checking parameters and display.

You can simply add the word as is, or you can append a host of suffixes so that the new word and its variants (singular/plural forms, tenses, and cases) will be added to the dictionary at the same time.

punctuation error. As with other spellcheckers, you can correct the word, ignore it, or add it to a supplementary dictionary of your own creation.

Spell Catcher's dictionary window offers further opportunities for customization when you choose the "Add to Dictionary" command. You can simply add the word as is, or you can append a host of suffixes so that the new word and its variants (singular/plural forms, tenses, and cases) will be added to the dictionary at the same time. You can create a new supplementary dictionary on the spot, or edit an old one, without leaving your spellcheck session. Spell Catcher has made it easy to choose a replacement word by presenting candidates in a numbered list; all you have to do is hit the corresponding number of the correct word on your keyboard to add it to your text.

Such a wealth of choices takes some getting used to. It would be nice if Spell Catcher allowed you to cancel a spellcheck midstream without going through some extra steps. I have worn glasses since the age of 6, and I thus would also have liked the clipboard text stream to be displayed in something larger than boring-legal-stuff-size type.

One of the niceties of forced selection mode is the way you can use it to do some very useful text operations that have more to do with text appearance than with spelling. For example, if you're composing email in Eudora, or working with text received via email, you can use Spell Catcher's "Modify Selected" mode to "quote" text with the greater-than sign (>) at the beginning of each line, to smarten quotes, to switch capitalization modes, to form paragraphs from hard-returned lines, to remove extra spaces, and so on.

Like the spellcheck, these miniprograms operate by copying text to the Clipboard and then back into your file. On my Quadra 610 this takes about 3 seconds. For a small operation like capitalizing a few words, it would be quicker to do it manually (the capitalization mode in Microsoft Word 6.0.1 is nearly instantaneous). But for working with lists, tables, and the like, these features come in very handy. And since Spell Catcher is an umbrella over the System, and can be configured to always work the same, regardless of application, you can learn its universal command set, and ignore the sometimes arcane command sequences you encounter in your other programs. (Nothing, by the way, in Spell Catcher interferes with the way the spellcheck utility in another program operates, so you can use both of them. Spell Catcher's control panel also enables you to turn it on/off for individual applications, or to completely customize its features to make them application specific. Word, for example, has its own method of shorthand expansion, so you could turn off just that feature in Spell Catcher when working in Word, but have it turn back on when you open Eudora.)

Figure 4. Hot Key: Spell Catcher can be invoked from the menu bar or from hot keys you assign.

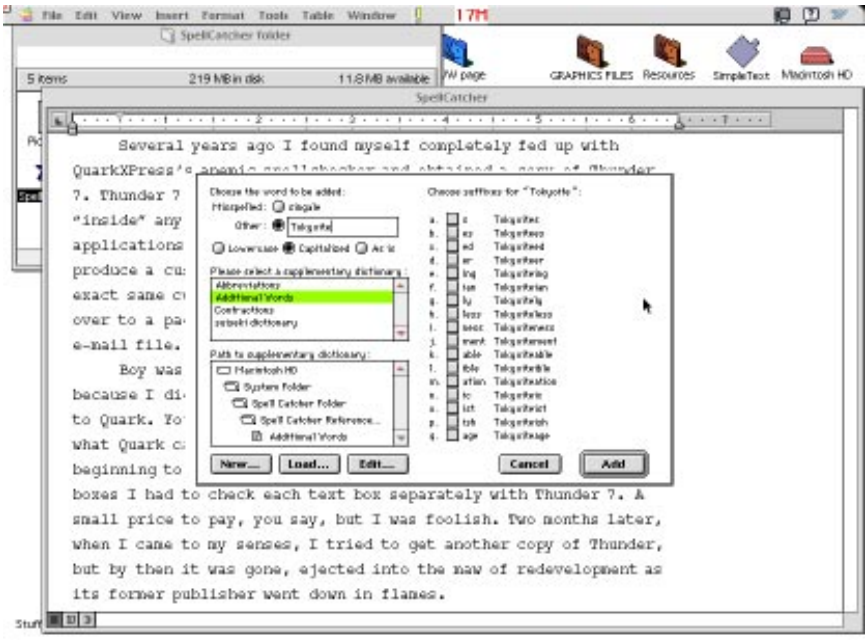

Figure 5. Supplementary Dictionary: It's easy to add words to a supplementary dictionary of your own creation. You can edit dictionaries during the same session.

Figure 6. Control Panel: The Control Panel allows you to install Spell Catcher for specific applications.

Spell Catcher's umbrella-like nature is an aesthetic complement to the Mac's familiar interface design. But there is a down side. The Macintosh common clipboard is text-only, yet most documents in the real world are heavily formatted. This means that italicized text or differently sized text may lose its formatting if it is imported back into a document from the Clipboard after the spellcheck. The makers of Spell Catcher have tried to get around this problem by creating program-specific replacement modules that are stored in the System Folder. In the case of QuarkXPress, corrections from the Clipboard are inserted using Quark's own search-and-replace window, and for the most part this solution works problem free. It also works fine in CompuServe, AOL, Eudora, and Photoshop. To my chagrin, Spell Catcher's performance with Microsoft Word 6.0.1 files is very inconsistent, and potentially disastrous.

My first trial had Word crashing every time I ran Spell Catcher. The always helpful Evan Gross advised me to remove older Word modules from the Spell Catcher folder in the System Folder; doing so solved the crashing problem. But instead of search and replace (like Quark), Spell Catcher relies on Word converting text to Rich Text Format (RTF) before placing it in the Clipboard for spellchecking. Great, except half the time when I run Spell Catcher, RTF is not invoked and the text is dumped back into Word as plain text, with complete, 100% loss of formatting. Also, about every other time I start up Spell Catcher in Word, I get an error message saying there is not enough room on the Clipboard. Try again, and it works fine. Another problem involved the text being "read" but not "checked," resulting in an incorrect "No errors found" message (this would invariably happen when selecting a single word to be checked).

As of this writing, I'm not sure whether this is a memory problem (doubtful with my 16 Megs of RAM) an extension problem unique to my system, or a Word problem. On the AOL message board, I've seen other users report problems with invoking Spell Catcher in Word. The absence of consistent performance in Word detracts from Spell Catcher's value, obviously. My guess is that this problem will be solved in time (remember how new Spell Catcher is) and in any case, it is quite easy to adapt Word's customized dictionary for use in Spell Catcher with other programs, and vice versa.

The exact same problem—loss of formatting—occurred in Illustrator; users should be careful to precheck their text before they apply formatting to Illustrator text.

Spell Catcher also comes with a powerful thesaurus for looking up synonyms, antonyms, and related words; jumping to cross-references is fast, and by double-clicking you can drop the new word into your text. As a freebie, Spell Catcher includes a plain vanilla emergency text retriever named Ghostwriter. I suppose that since Spell Catcher is capturing keystroke streams anyway, it was not a big leap to create Ghostwriter, which silently saves everything you type in case of equipment failure. That juicy zinger you thought up need no longer disappear in a power surge. You just go to your Ghostwriter folder (automatically created) and retrieve your text.

Like the other modules in Spell Catcher, both the Thesaurus and Ghostwriter

[S]pell Catcher includes a plain vanilla emergency text retriever named Ghostwriter…, which silently saves everything you type in case of equipment failure. That juicy zinger you thought up need no longer disappear in a power surge.

The developers are clearly addressing real-world concerns about how programs are used and what the needs of writers and editors are. (They have, for example, provided with Spell Catcher an HTML supplementary dictionary so you can check your web pages without getting stopped at every HTML code; also included are medical, legal, and engineering/ scientific dictionaries.)

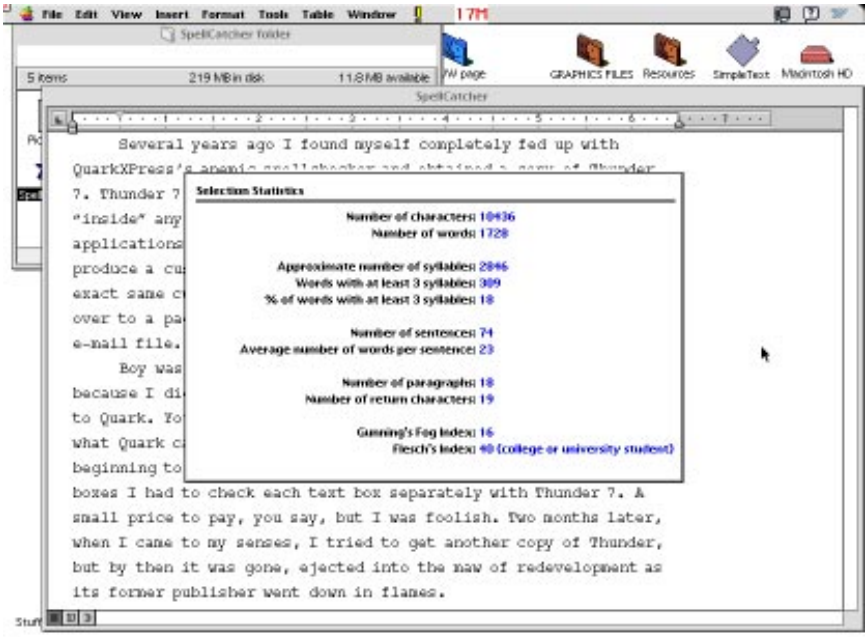

Figure 7. Statistics: Spell Catcher will tell you what level your text is written at—of interest to teachers and journalists.

are highly customizable. Ghostwriter, for example, lets you tell it what creator code to use when it saves the text stream, as well as how many characters to capture at a time, and how long to keep them around before automatically deleting them.

Again, it's nice to have so many options. As a book publisher concerned with orthography and consistency, I am impressed at the degree of kindness displayed by Spell Catcher at nearly every level, from the well-written manual to the easy-to-access interface (a "Preferences" button for instantly customizing the program seems to be available from every single operation window). The developers are clearly addressing real-world concerns about how programs are used and what the needs of writers and editors are. (They have, for example, provided with Spell Catcher an HTML supplementary dictionary so you can check your web pages without getting stopped at every HTML code; also included are medical, legal, and engineering/scientific dictionaries.)

On the cover of the manual is the moustachioed Casady & Greene guy, dressed in a baseball uniform, and leaping in delight as the word "potatoe"—with the Dan Quayle "e"—slides effortlessly into his glove. No doubt he's happy because he knows his team is ahead by a home run.

Peter Goodman is publisher of Stone Bridge Press (www.stonebridge.com) in Berkeley, which specializes in books and software about Japan.

Spell Catcher
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http://www.casadyg.com
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User Groups $29.95 + s/h
Contact the publisher at
(800)359-4920 (U.S.) or
(408)484-9228 (International) or
sales@casadyg.com (email)
for price to upgrade from Thunder 7

Minimum system requirements
Macintosh SE or better
System 7.0 or higher
4 or more megs RAM (8 Megs recommended)
2 megs hard disk space

MacLink Plus Translators 8.1

by C.R. Clowery

The Value of Translation

If you show up on the streets of Shanghai, phrase book in hand, and try to get to the post office, your attempts at the four tones of Mandarin Chinese will generate a crowd of smiling faces and helpful fingers gesticulating east and west. You will make new friends, but you may wind up at the department store. Before long, a friendly English-speaking policeman may appear to translate for you. Likewise, if you arrive in the typical Windows-Intel business office with Macintosh files on your diskette, last night's careful formatting and spell checking won't even show up on the PC Desktop, much less make it to a printout (Figure 1). You will appreciate the value of accurate translation. You will be glad to have MacLinkPlus Translators 8.1 on your Mac.

Figure 1

MacLinkPlus Translators can make virtually any non-Macintosh file, regardless of its original computer platform, database, or spreadsheet, pop up on your Desktop, translated perfectly, with every italic, column and tab intact.

You will understand why *MacUser* magazine in June 1993 awarded DataViz's MacLink Plus Translators four and a half mice and called it "one of the 13 utilities you can't live without." You will understand why Apple, since System 7.5, bundled this technology with every new Macintosh.

MacLinkPlus Translators can make virtually any non-Macintosh file, regardless of its original computer platform, database, or spreadsheet, pop up on your Desktop, translated perfectly, with every italic, column and tab intact.

What's New?

MacLinkPlus Translators 8.0 (reviewed in the BMUG Fall 1995 Newsletter) has since been upgraded to version 8.1. Along with new translators for ClarisWorks 4.1 and Nisus Writer 4.1, it includes an Internet Translation Kit, for converting GIF and JPEG graphics (commonly used on the World Wide Web) and HTML tags into application formats that you can use on your Mac.

DataViz supplies a pamphlet explaining Internet basics for dummies, and prepares the ground to translate Netscape Navigator, Microsoft Internet Explorer, and NCSA Mosaic protocols from one platform to another.

Version 8.1 also includes DataViz FileView, a nifty gadget that displays text files and graphics in a scrollable window

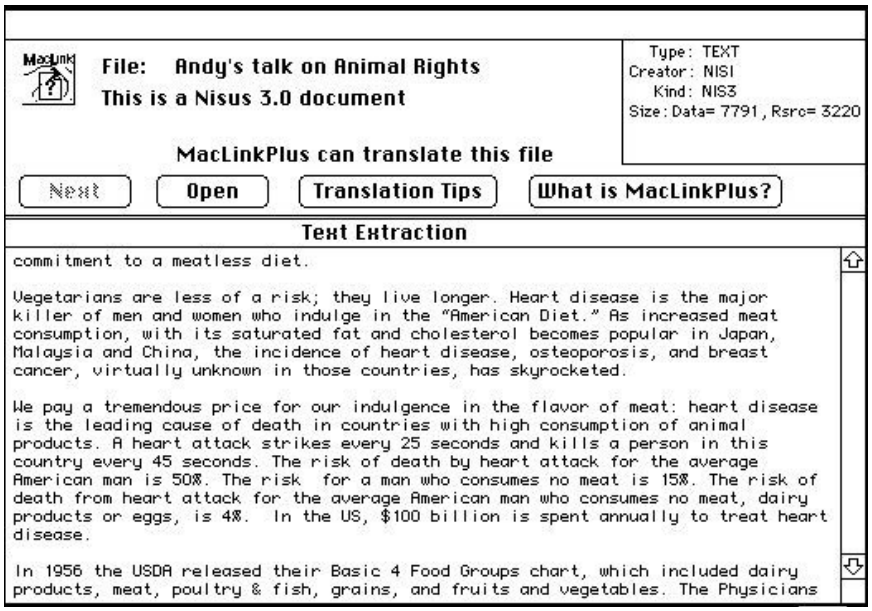

Figure 2

so you can know the contents without launching the application (Figure 2).

The latest advertisement for MacLink Plus software in the glossy trade journals is "little known Mac fact #9." It shows a busy executive leaving the urban workplace at sunset, heading for his cozy duplex in the suburbs. He's tugging a little red wagon filled with Win95 diskettes, full, no doubt of PC-platform workplace data: documents, spreadsheets, and graphics. You get the point: he's taking his office work home because he prefers to work on his Mac. Before MacLink Plus, PC-based files came up as plain ASCII text, with lots of gobbledy gook to clean up.

Now you can bring your office files home, translate and manipulate them all on your Mac. When your homework is finished, you run MacLink Plus one more time, in reverse. You drop the Mac document onto the MacLink icon on your Desktop Sunday night. When the changes have been made, the work is faithfully rendered in fluent Windows-speak, ready for the workplace Monday morning. The data will read perfectly on your Wintel PC tomorrow at the office.

MacOS 7.5 bundles MacLink Plus

Apple liked MacLink Plus so much it licensed the technology and incorporated the translators into the MacOS. Since system 7.5, all new Macs include Easy Open Translators. MacLink Plus Easy Open Translators appeared first on PowerBooks, then with Performas, and recently DataViz signed an agreement with Apple to bundle MacLink Plus on every Macintosh computer that ships.

For power users, the MacLink Plus setup control panel gives you options to resolve several translation issues. The preferences ask which language, which graphic clipboard formats, which PCX colors, which graphic sizes, etc., you use most often. The preferences setup dialogue lets you choose between DOS and Windows text files formats because the use of extended ASCII characters will influence text files.

Automatic File Recognition: Cool!

DataViz's MacLink Plus sets the standard for file conversion. Earlier incarnations of MacLink Plus Translators had a clunky interface that resembled the notorious Font DA Mover, only worse, it required manual file recognition (Figure 3).

That is to say, you had to thread the needle with every unknown file, and tell the left window what format your foreign file was, and then on the other window, select the application and platform you wanted to translate into. If you guessed wrong, you had to get three steps into the process, name the new file, and watch the progress arrow run before you won the booby prize. The alarm sounded and the message read, "Sorry, MacLink doesn't recognize this format; are you sure it is really a DataGlitch Pro file?"

In preparing MacLink Plus Version 7.5 for life inside the MacOS, DataViz completely revamped the interface. They made a good thing better by automating the conversion process and taking the guesswork out of file conversions. You slip a DOS floppy into the Mac's hard drive, and double-click on the desired file.

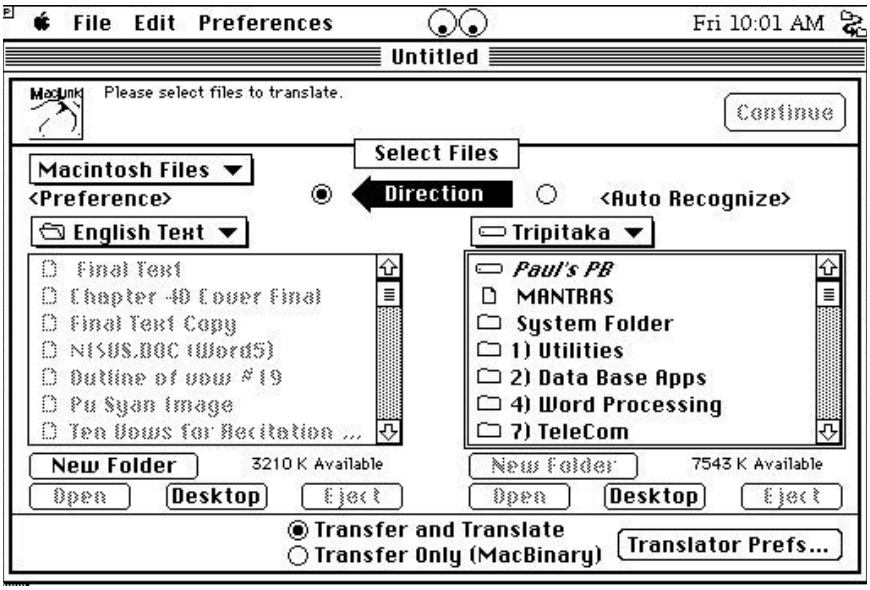

Figure 3

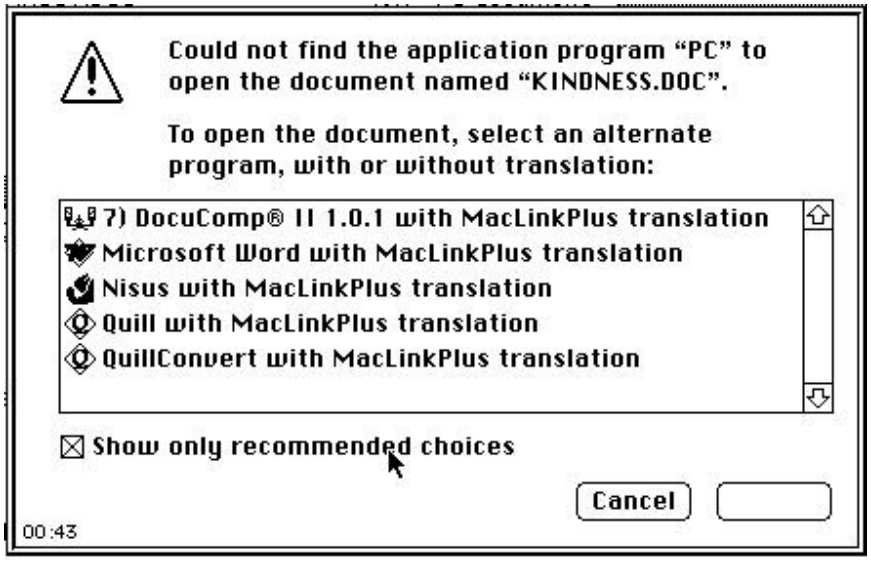

Figure 4

Note: Don't try the reverse! Mac-formatted floppies inserted into a PC drive do not compute. They don't even show up! You are told that your Macintosh floppy is an incompatible file format! The end. Wintel-Chauvinism!

Automatically the MacLink Plus Translators read the file's format and tell you what application on your hard drive can bring that PC file into perfect shape on the Mac Desktop (Figure 4). For example, you can convert a Microsoft Works word processing document into a ClarisWorks word processing document—or whatever other word processor you use. You can convert a spreadsheet from Quattro Pro for Windows into Microsoft Excel for the Mac. In all cases, formatting and other aspects of the document are retained and the result of the translation looks and acts just like the original document did.

DataViz makes a conversion utility for Windows, too: DataViz Conversions Plus, which allows your secretary to read, write to, and format your Mac HD floppies on the office PC.

DataViz FileView

The FileView utility allows you to view the contents of any readable file before attempting to convert them. FileView recognizes Mac, DOS, and Windows formats, so you can easily view mystery files with generic, blank icons, and graphic documents such as: PICT, WMF, and EPS files. FileView installs an alias that sits on the Desktop waiting for you to drop an unknown file, or files, on top of the icon. It automatically scans the file and tells you what kind of document it is and gives you the contents in under ten seconds (Figure 2). It is not an editing utility, files appear for viewing only, stripped of their formatting, but it saves you much time and grief in identifying it. FileView can also change file type and creator information, if you care to.

Document Converter

The MacLink Plus package provides Document Converter, another way to translate the files you use most often (Figure 5). Document Converter is a pre-set configuration. First you make a duplicate of the tiny Doc Converter application (only 5k). Next you click on the Copy button and choose your preferred destination application format, then click Set. An icon appears bearing the pre-set final format. You drag your Windows, DOS or Mac file on top of the icon, and magically the file is translated into your choice. It automatically launches the application as well. Since this is MacLink Plus, all formatted dots and titles are where they belong.

Version Checker Chutzpah!

DataViz has come up with a clever new marketing scheme. When you visit DataViz's Website: www.dataviz.com, you are invited to download their Version Checker. The installer first asks if you have a modem, and then launches your browser and dials up the DataViz Web site. It fetches the file, and when you run the little application it searches your hard drive for the version of MacLink Plus you own. It will note the version, check the site for the current shipping version and compare the two. If you are up-to-date, you will get a congratulation message, and information about DataViz's other products. If there is a more recent version available, the little electronic snooper automatically sends you to a page that has information about the latest version and how you can order it. I guess DataViz figures that businesses and individuals whose livelihood depends on the latest software upgrades won't mind

Figure 5

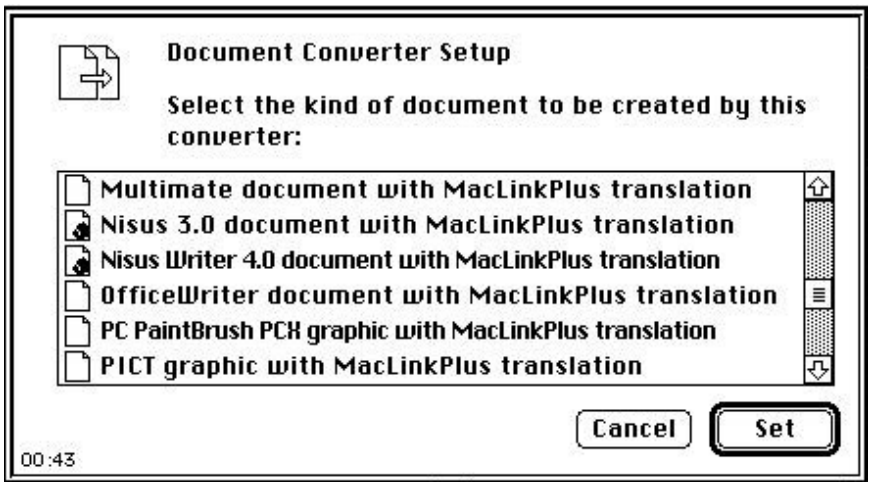

Figure 6

spending the bucks to stay competitive. Golly, pretty smart! Version Checker will tell you automatically when it wants your money, and you pay for the connect time, too. Not only that, you also get a lesson in marketing chutzpah (Figure 6)!

File Conversion Cash Cow Moola!

Software upgrades happen when paradigms shift in digital media, when hardware platforms evolve, or when companies need money. DataViz is in the connectivity business; their market niche defines the computer idiom "well positioned." It used to be that software underwent a major upgrade every two or three years. Recently the obsolescence cycle has shortened to a year or less.

For more on this see Marc Zeedar's article, "A Bad Case of Upgraditis" in TidBITS #347/30-Sep-96, www.tidbits.com.

Software upgrades happen when paradigms shift in digital media, when hardware platforms evolve, or when companies need money.

When one program is upgraded, all the other programs that a user works with must be rendered compatible as well. This requires upgraded translators to connect with the latest versions. DataViz stands to profit handsomely from this trend. Proof of the principle: ClarisWorks version 4.0 comes bundled with nearly every Mac sold recently by Apple—or may be ordered via mail order catalog. The document processor NisusWriter 4.1 is being bundled with the popular Power Computing clones. So what upgrades does MacLink Plus 8.1 add to their support modules? You guessed it. ClarisWorks and NisusWriter. Successful software gets the support. The cash cow moos, and DataViz gets milk.

Future Directions

The latest word from DataViz hints that the next upgrade of MacLink Plus will be PowerMac native. It will include support for sharing more Win95 files, such as MS Word 7.0, WordPerfect, and Quattro Pro, among others. The FileView utility will expand to not only display any file, but also give advice on the applications available, and then it will launch the application most equiped to deal with the data.

Future versions of the Internet Kit will be able to translate hypertext links. For example, if you want to translate a Web page from Word 7.0 with HTML hyperlinks to Word 6.0, with DataViz's Internet assistance, any HTML link will port over to the new format ready to click and connect to the Web.

DataViz has filled a need and found a niche. Their R & D folks and marketing group work at the cutting edge. Their PR agency creates some of the most clever ads on the market. Their product delivers. MacLink Plus is money well spent.

Minimum System Requirements:
Any Macintosh II or newer
A hard drive
System 6.0.5 or higher
Macintosh Easy Open Translators requires System 7.0 or higher

DataViz Inc.
55 Corporate Drive
Trumbell, CT 06611
(800) 733-0030
Web site: www.dataviz.com

MacLinkPlus Easy Open Translators 8.0
Retail Price: $109
Street Price: $69
Contains entire Mac plus Mac-to-PC translation library.
For use if you already have a way to move PC files and disks to your Desktop.

MacLink Plus/Translators Pro 8.0
Retail Price: $149
Street Price: $95
Contains entire translation library and Macintosh PC Exchange from Apple, for using DOS disks in a Mac.
For power users who need to do batch conversions.

MacLink Plus/PC Connect 8.0
Retail Price: $199
Street Price: $129
Contains entire translation library, Macintosh PC Exchange, and cable and modem communications software.
For any situation including connecting a Mac and a PC. For direct Mac to PC connectivity.

C.R. Clowery translates from Chinese, French, Japanese, and DOS. He has reviewed Chinese and Japanese language software for the BMUG Newsletter since 1993.

StuffIt Deluxe 4.0

The Essential Compression Tool

by John Christopher

With the Internet and the World Wide Web growing in popularity by the millisecond, using an effective compression utility is more of a requirement than an option. Aladdin Systems' StuffIt Deluxe has long been the Macintosh standard for compression, squeezing files down to minuscule proportions, saving you a few dollars in online charges, and helping reclaim free space on your hard drive.

Chances are you already know StuffIt if you subscribe to a commercial online service or the use the Internet. Portions of the program are built into America Online's software and Browser programs like Netscape Navigator; they rely on StuffIt as a helper application to decode and decompress files downloaded over the Net.

Aladdin's latest feat is a complete rewrite of StuffIt which adds a few enhancements and brings the program to version 4.0. The key to most of the new capabilities is the True Finder Integration (TFI) control panel. TFI integrates control of three programs into one: Providing support for StuffIt's Magic Menu, Archive Via Rename, and Browser functions. Through TFI, a new Browser feature allows archives to be created on the desktop by selecting a command in the Finder's File menu as shown in Figure 1. Items to be compressed are dragged directly into archives as easily as moving a file into a folder. Archives can also be opened simply by double clicking on them—see Figure 2. Items are now added or removed without launching the StuffIt application.

In addition to the new Browser feature, StuffIt also offers three additional ways to compress and decompress files without ever launching the main application. While not a new feature, StuffIt's Archive Via Rename option offers effortless compression of files by simply adding ".sea" or ".sit" to the name of a given item. This instantly changes it to a compressed archive. Conversely, files are decompressed when the suffix additions are removed.

StuffIt's Archive Via Rename option offers effortless compression of files by simply adding ".sea" or ".sit" to the name of a given item. This instantly changes it to a compressed archive.

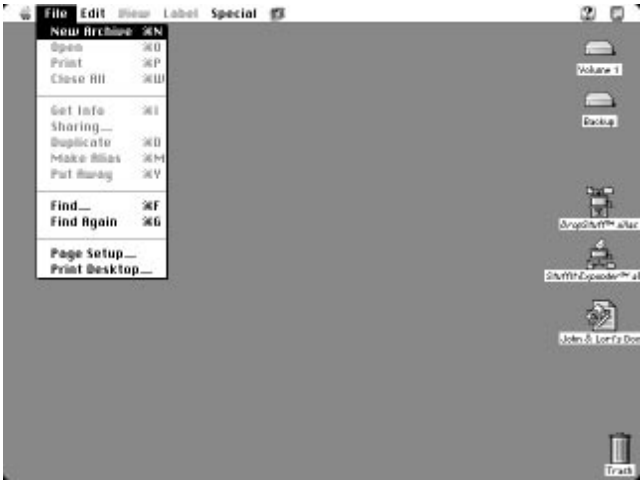

Figure 1. StuffIt's convenient New Archive command makes it easier than ever to create archives on the desktop.

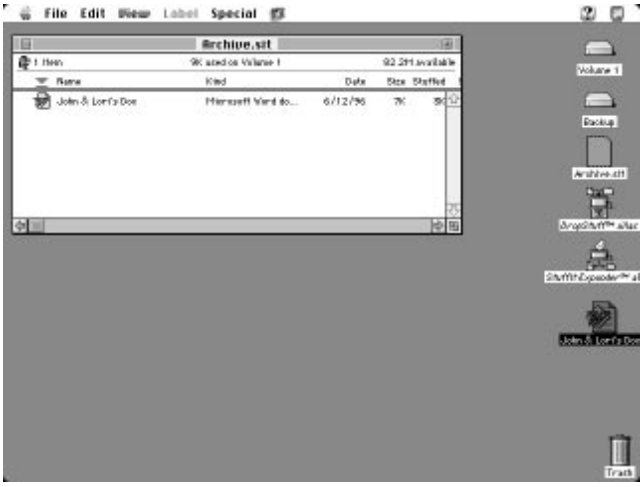

Figure 2. You can view, add, or remove the contents of an archive directly from the Finder now.

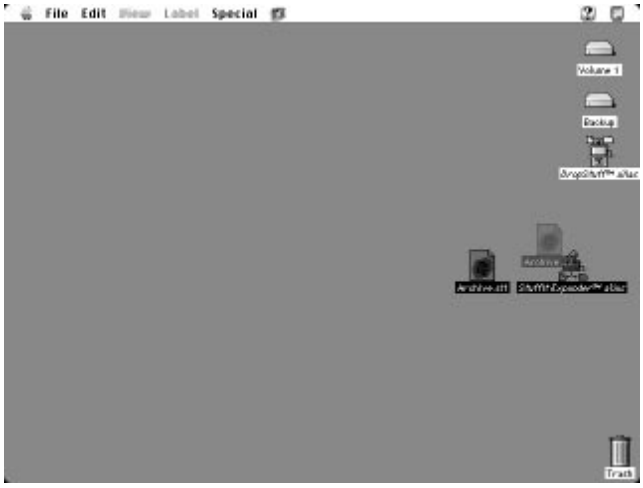

Figure 3. Just drag and drop a file to stuff, expand, or segment it.

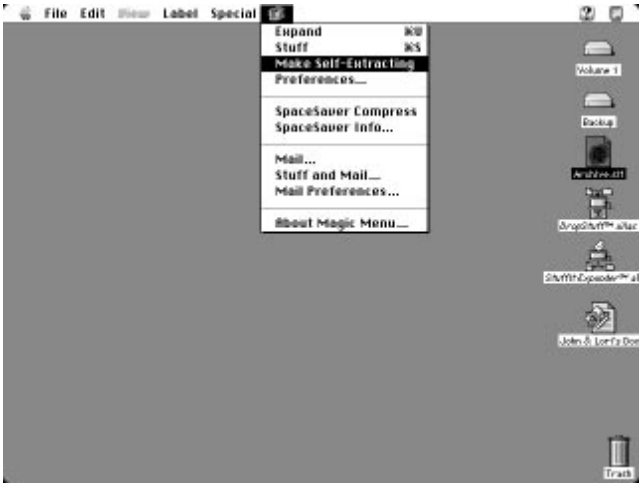

Figure 4. The Magic Menu lets you control various options and sports the new Stuff and Mail feature.

StuffIt also takes full advantage of System 7's drag and drop capabilities with its DropStuff, Expander, and Segment mini-applications. During installation, Aliases are placed on the desktop so files may be dragged and dropped onto them, providing a quick and efficient way to handle compression tasks (Figure 3). The latest version adds the ability to expand and create segmented archives and even convert text files created on other computer systems to Macintosh format.

StuffIt's Magic Menu (Figure 4) has gained a new Stuff and Mail feature that lets users of Qualcomm's Eudora, CE Software's QuickMail, or Microsoft Mail compress and mail a file using one convenient menu command. Aladdin has also integrated further support for encoded files such as BinHex, UUEncode, and MacBinary, as well as cross platform decompression of Zip, ARC, TAR, and others into the Magic Menu.

Version 4.0 does offer a minor speed boost over previous versions of the program. You can expect an average of about 25% faster expansion of compressed archives, and 15% for compressing files. In the real world that works out to about a one to one-and-a-half second difference which is almost imperceptible, but it depends on the file you are compressing.

To help reclaim free space on your hard drive StuffIt Deluxe includes StuffIt SpaceSaver, a separate utility designed to compress inactive files at a user definable interval. It can be configured to work in the background while the system is idle, monitoring and compressing files that are not being used. In version 4, files compressed with SpaceSaver are now tagged with a special mini-icon for easy identification.

StuffIt Deluxe has only one drawback—the Finder Integration and SpaceSaver control panels require a good chunk of your Mac's memory. With both running, a little under one megabyte is used. Such is the price for seamless compression integration.

Conclusions

As the only utility capable of integrating compression, decompression and cross platform translation, StuffIt Deluxe belongs on the tool belt of every Net surfer with a Macintosh. Version 4.0—while being a complete rewrite of the program—only offers a handful of positively new features such as the TFI control panel, Browser, DropSegment, and Stuff and Mail.

Performance-wise you may not see any noticeable speed improvements, but the new Finder integration with its Browser feature is worth the price of the upgrade. Longtime StuffIt users will be pleased with the latest additions but may be disappointed if they were expecting more. On a scale of 1 to 10 I'd give this version of StuffIt an 8.5.

Stuffit Deluxe 4.0
Minimum System Requirements
6.0.5 or above.
Suggested Retail Price: $129.95
Upgrade: $29.95

Aladdin Systems
165 Westridge Drive
Watsonville, CA 95076
Phone: (408) 761-6200
Fax: (408) 761-6206
www.aladdinsys.com

John Christopher is a Data Recovery Engineer at DriveSavers in Novato, CA. When he's not knee deep in other people's data he writes for various publications including MacUser and Mac Home Journal. He co-authored Netscape Navigator Starter Kit for Macintosh (Hayden Books), and edited Basic Peripherals and Storage chapters for The Macintosh Bible (from Peachpit Press). John can be reached by e-mail at: datadoc@linex.com.

McAfee Virus Scan 2

by Lyle H. Nishida

The world just seems to be a less safe place than it was just a little bit ago.

I cannot imagine why anyone would want to create a computer virus. I don't see what the creators of these things feel that they accomplish but this has become a commonplace occurrence. I have always used John Norstad's Freeware utility Disinfectant and been happy with its ability to keep the few Macintosh viruses at bay. With the recent creation of Microsoft Word and Excel Macro Viruses, there is a need for something which can detect these viruses too.

My employer standardized on Microsoft Office for both WINTEL machines and Macs. McAfee VirusScan is the corporate anti–virus standard. The first version I used was v1.0.1 and it didn't seem to do anything more than Disinfectant so I didn't feel the need to switch. There were also a few users using SAM but they did not seem to be keeping their descriptions files up-to-date. To me it seems that old anti-virus software is worse than no anti virus software since it tends to lull users into thinking that they are protected when they are not.

Microsoft has released a Word - Macro Virus Protection Tool. The problem with the Macro Virus Protection Tool starts with its scan speed. It is very slow to scan—to the point where most users will not even bother with it. The other problem is the Word Macro Virus Protection Tool has not been updated as of this writing (October 1996) since October 1995. One year in the computer virus world is like one year to a toddler. Lots of new things can and do happen—just ask my toddler. My opinion of Microsoft's tools and help in this matter is not very polite.

There have been several outbreaks of CONCEPT, and other much more destructive strains of the Word Macro Viruses. The Word Macro Virus Protection Tool, Disinfectant, and McAfee VirusScan v1.0.1 were either not able to detect or eliminate these from the files.

Old anti-virus software is worse than no anti virus software since it tends to lull users into thinking that they are protected when they are not.

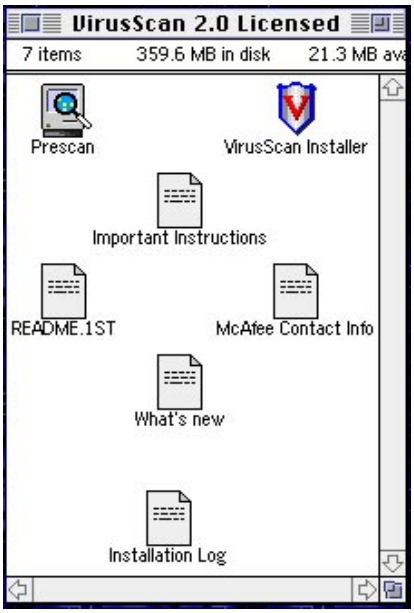

Figure 1. Virus Scan Parts & Pieces. After you unstuff the archive, you get a prescan application and a VirusScan installer.

With Version 2 McAfee has added support for finding and eliminating the Word Macro Viruses. So I thought I would at least give it a try.

I went to the McAfee web site, logged in and downloaded version 2 of VirusScan Macintosh. Like most files from the web it installs by first unstuffing the archive. You are given a prescan application and a VirusScan Installer.

The prescan software is VirusScan 1.0.1. I used it on one machine and decided that it did not find out anything I didn't already know so for the other installs I skipped using the prescan.

Running the installer loads a Virus Scanner extension into your System Folder, and places an application and a couple of read me files on your desktop. The installer does not give you a FAT install option so you end up with an install that is CPU dependent. Since it is installed on your start–up drive, in your system folder, this should not make a difference for most users but system administrators should be aware of this.

I moved the application into the utility folder of most users machines (unlike the Microsoft Anti Virus tools which must reside in the templates folder of your Word folder). Running the application the first time takes you to the configuration setup. McAfee has given you several tracks to follow. Either manually setting up—letting the application choose on its own—or for you to answer a few questions and then the application sets itself up.

I have individual users set up with varying degrees and times of scanning. The ease and depth of the set up is an area where VirusScan does an excellent job. I found no needed set up option to be missing.

I guess the best that you could hope for with anti–virus software is that it nev-

er finds one. Viruses are much more common on the WINTEL side of things but the need for protection continues on the Mac.

I am much more concerned with false positives since this tends to lull users into assuming that every alarm is a false alarm and as a result they dismiss all of the alarms. I found that SAM (Symantec Anti–Virus Macintosh) ended up like this when there actually was a virus outbreak. SAM may or may not have caught it, but the users went along their merry way. At the very least, with VirusScan there have been few false positives.

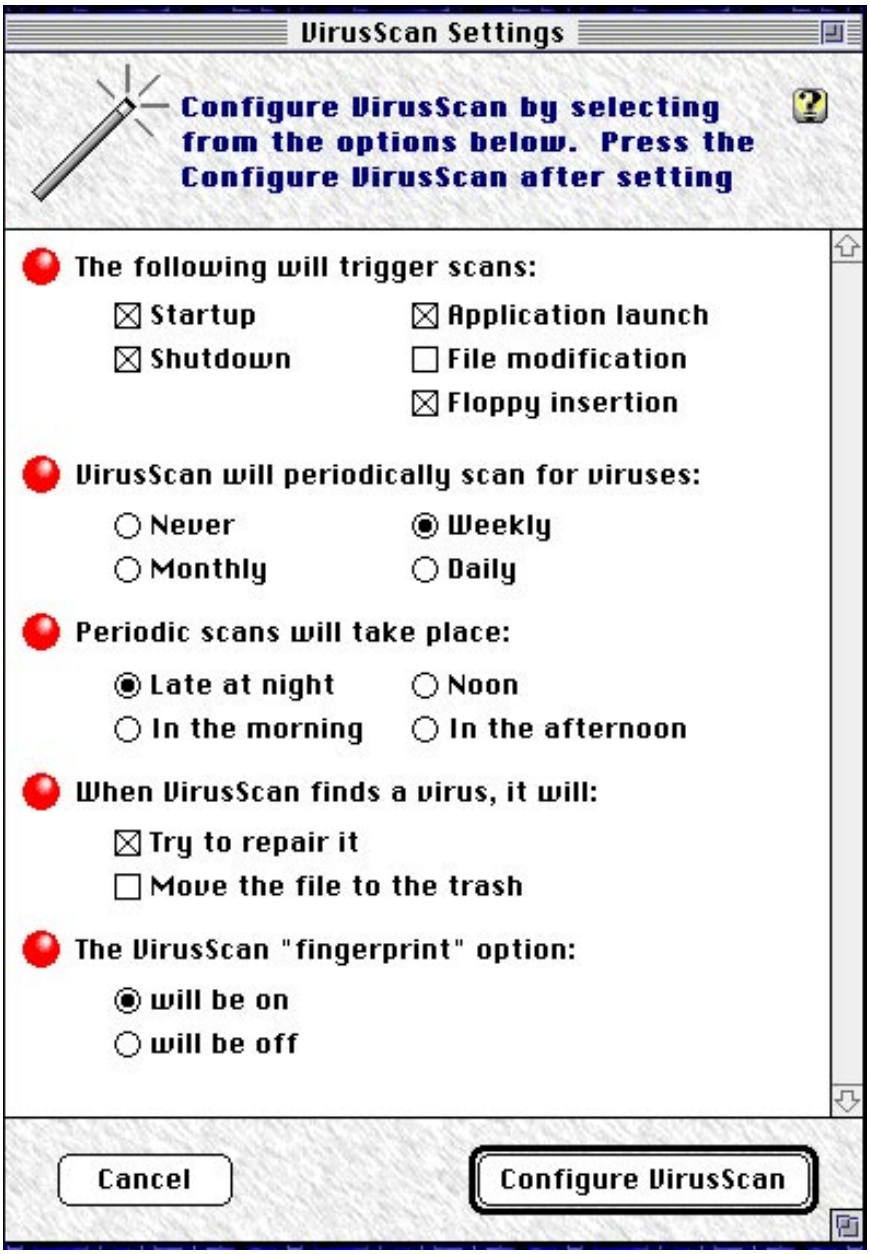

Figure 2. VirusScan Settings. If you select the "Use a settings dialog to configure VirusScan…" you end up with a series of check boxes to configure your options.

With VirusScan I was able to catch and remove all of the MS Word Macro viruses. I did not find any "Macintosh" viruses—that is to say, none of the viruses native to the Mac. What I did find was upwards of four thousand infected MS Word files which Virus Scan was able to clean. In terms of scan speed VirusScan was able to scan and clean a whole hard drive for all viruses faster than the MS Word Macro Virus Protection Tool was able just to scan. At the very least, users will be less likely to bail out of the scanning process.

It also detects damaged resource forks which is a small but important side benefit. While it cannot correct the damaged resource forks, at least you have been warned to do something with the files.

The other vital area will be updates. Somewhat like human viruses, computer ones are mutating and changing all of the time. This creates a need for updates. On Planet BMUG there is always the latest version of Disinfectant and if you are a registered user, McAfee has their updates on their Web site. If you visit their area on America On Line a dedicated Mac user can enjoy a good laugh. McAfee's instructions for using their Mac software consist of the following:

VirusScan for the Macintosh is self-installing, but you can clean your hard drive of viruses during installation. It contains:
- The standalone scanner
- An INIT to offer an "immune system" for your computer

This file has been BinHexed to allow it to be stored safely on non-Macintosh systems. Stuffit Expander or another BinHex-compatible decompressor must be used to open this file.

Transmitted: 8/23/96 7:01 PM

The Windows instructions are about three pages of detailed instructions. Hmm…

Of course it is the very use of the web that created the need to be ever more vigilant in this area, since you really have no idea where the file(s) may have come from.

My conclusion about VirusScan is that it is recommended as the preferred anti–virus software. Especially if you use any of the Microsoft Office products.

MasterJuggler Pro

by Leslie Zemenek

Ever since I started working on a computer (a Macintosh from the very beginning), I have been fascinated with fonts. I began to collect them fanatically, loading up my system with script faces that I might use the next time my cousin Sally's best friend's sister decides she needs an invitation designed for her engagement party. So I decided to buy a font manager. Everyone told me Suitcase, Suitcase, Suitcase! But I was at a Mac show where I met the folks from Alsoft and thought them so friendly and helpful that I shot my wad on MasterJuggler instead. And I have never been sorry.

When you're getting your files ready to send out to the service bureau … now you can just choose Gather Fonts from MasterJuggler's Special menu and Voila! All the correct fonts go to the service bureau

Now comes MasterJuggler Pro. This product definitely deserves the name Pro. First of all it is finally PowerMac native. Then there is a whole slew of other really cool features. The first and most obvious for those of you upgrading from previous versions of MasterJuggler: you no longer have to go through a series of semi-complex steps using a separate utility to retain your old MasterJuggler settings. As part of the installation process, a dialog box pops up asking you if you wish to keep your old settings. Just click Yes and it is done. Nothing could be simpler.

In my day-to-day use of MasterJuggler, I haven't noticed much difference. Which is to say, it continues to operate just as seamlessly and effortlessly as I have come to expect in the past. When I start my Mac every day, I know just which fonts are loaded. If I crash (which happens all too often, as Netscape is one of the primary programs that I have open all of the time), I don't have to re-open MasterJuggler to reload my fonts. It all happens behind the scenes as my Mac starts up. I have worked in offices where Suitcase is the preferred font management program. I always remember having to open Suitcase in order for the startup sets to load. (Maybe I just never learned how to use it correctly. Maybe not. When Suitcase 3.0 arrived, it came with a cute new interface but seemed more difficult than ever to use.) Crash? Open Suitcase again to load startup fonts. In each instance where Suitcase was installed on my work Mac, I waited until the IS department manager had been busy elsewhere and very quietly replaced Suitcase with MasterJuggler. Now with this latest version, if my machine crashes, MasterJuggler will automatically detect that your machine was not shut down properly and will remember which fonts were opened as "temporary"! It will re-open them for you as if you never crashed.

[MasterJuggler] will automatically inspect your fonts for corruption.

Speaking of temporary fonts, MasterJuggler allows you to choose to have all fonts, that you add as you are working, open as "temporary" by default. Or not. You choose. You can even open these temporary fonts (and close them) via Drag and Drop. Just keep aliases of MasterJuggler's cool new icons on your Desktop. If you like to try out lots of different fonts in your page layout work the way I do, this is a great feature.

And if we're talking great features here, there is one that should have graphic designers and service bureaus alike throwing their hands up into the air and shouting "Hallelujah!" with religious fervor. That feature is the Gather Fonts command. When you're getting your files ready to send out to the service bureau for color comps or getting films made for printing, QuarkXPress has its Collect for Output command. The only thing it does not collect are the necessary fonts. Well, now you can just choose Gather Fonts from MasterJuggler's Special menu and Voila! All the correct fonts go to the service bureau or the printer right along with your other files. No more manual copying of fonts to your removable media. This process is especially easy if you have defined a font set for the document you are working with. All the fonts go with the click of one button. An added

checkbox will make sure that you gather Postscript outline files as well. As far as I am concerned, this one feature alone makes the upgrade to MasterJuggler Pro a more than worthwhile investment.

I could go on and on about all the other cool new features in MasterJuggler. It will automatically inspect your fonts for corruption. If you hold down the Option key and select one of your open fonts, MasterJuggler will display its directory path. There is even a pop-up menu that remembers the last ten directories from which you opened fonts. I haven't even begun to explore all of the fun things that you can do with sounds with MasterJuggler Pro. My only criticism is that Alsoft has removed the Quit button from the dialog box. They suggest that you keep the MasterJuggler window open the entire time you are working away. I for one don't like having a lot of windows cluttering my Desktop and even if I hide it in the Finder menu, program windows tend to eventually make their way back onto the Desktop. Old habits die hard, I guess. I for one do remember the keyboard command for Quit and use it. But this is a minor complaint compared to all the cool improvements to what was already a great program.

So if you, like me, are a font junkie, indulge! Get MasterJuggler Pro.

MasterJuggler Pro
Minimum System Requirements:
Mac, PowerMac, or compatible
System 7.0 or later
at least 1 meg of RAM

Alsoft, Inc.
PO Box 927
Spring, Texas 77383-0927
Sales: (713) 353-4090,
Fax: (713) 353-9868
Email: Sales.Info@AlsoftInc.com
Technical Support: (713) 353-1510
Email: tech.support@alsoftinc.com

Leslie Zemenek is a New Media Graphic Designer at Triad Inc. Marketing Communications in Larkspur, CA. Her most recent projects include web sites for The San Francisco SPCA (www.sfspca.org), Keyboard Magazine (www.keyboardmag.com), Java Doc's Coffee Merchants (www.javadoc.com) and the redesign of Macworld Online (www.macworld.com), which debuted at Macworld Boston this past August.

FrameMaker 5

by Julie Bernstein

What is FrameMaker?

Adobe is trying hard to monopolize the desktop publishing market. Perennial favorites PageMaker, Photoshop, and Illustrator are already on most every publishing professional's hard disk. Adobe's recent acquisitions of PageMill, a graphical Web page designer, and FrameMaker, a sophisticated document creation package, further tighten the company's grip on this lucrative market.

FrameMaker is not for casual users. If all you need to do is write a book report or update your résumé, Word, WordPerfect, or even ClarisWorks will do the job for hundreds of dollars less. FrameMaker is best for writing technical documents, such as software manuals.

FrameMaker is especially popular in the technical writing market because of its cross-platform support. Documents can be exchanged easily between Mac, PC, and UNIX machines. The Macintosh interface is reasonably familiar, though some notable features such as Drag and Drop are not supported. The printed manual notes differences between performing operations on the Mac and Windows, and displays screen shots from both versions when appropriate.

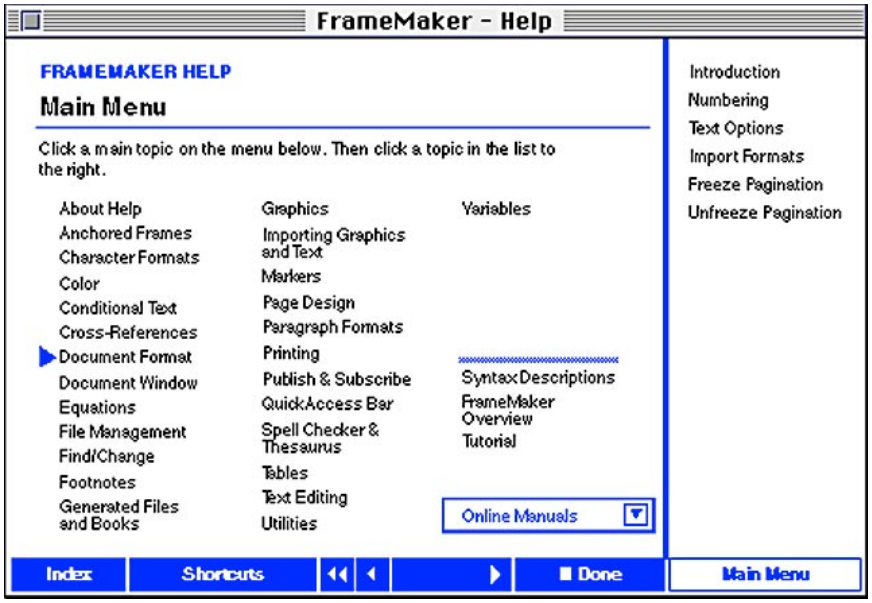

Figure 1. The main Help menu squeezes in the information.

Installation

FrameMaker ships on both floppies and CD, so people without a CD-ROM drive are not left out (though they won't be able to install fonts from the included Type On Call CD). The installer is straightforward and provides both Easy and Custom Install options. The installer generates a log of all files installed, their locations, and creates a folder for any system files that it moves in the process of updating your disk. The default installation takes a sizable chunk of disk space, 25 megs or so, but no more than we've become used to expecting from today's business applications.

Those who never get around to mailing in registration cards may appreciate FrameMaker's register by modem option, a handy feature becoming common in many products. Type in your vitals, let the computer make a toll-free call, and you're on your way. If you're paranoid about the software uploading too much information about you and your machine, you may want to skip this option and go for the good old US Postal Service.

FrameMaker is especially popular in the technical writing market because of its cross-platform support. Documents can be exchanged easily between Mac, PC, and UNIX machines.

Documentation

FrameMaker comes with both online and printed manuals. Unlike some other products which are now eliminating paper documentation all together, Frame-

Figure 2. The QuickAccess bar is multi-tiered. The first layer is displayed here.

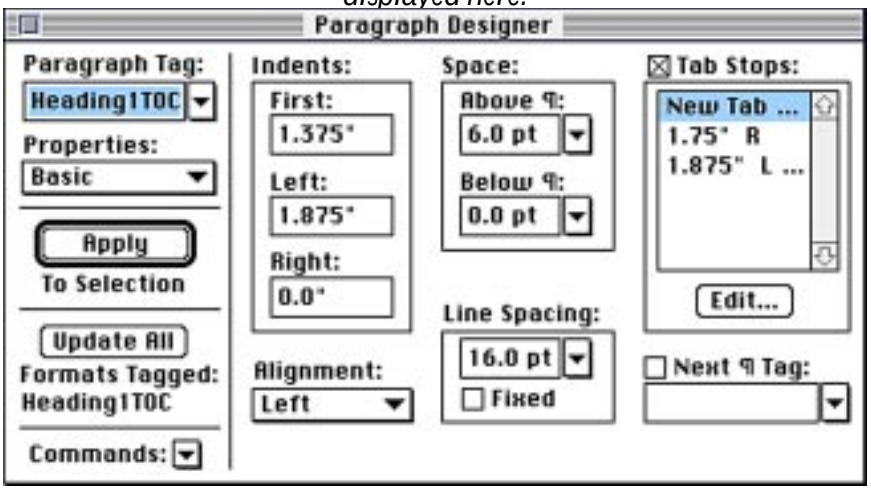

Figure 3. The Paragraph Designer is powerful but intimidating.

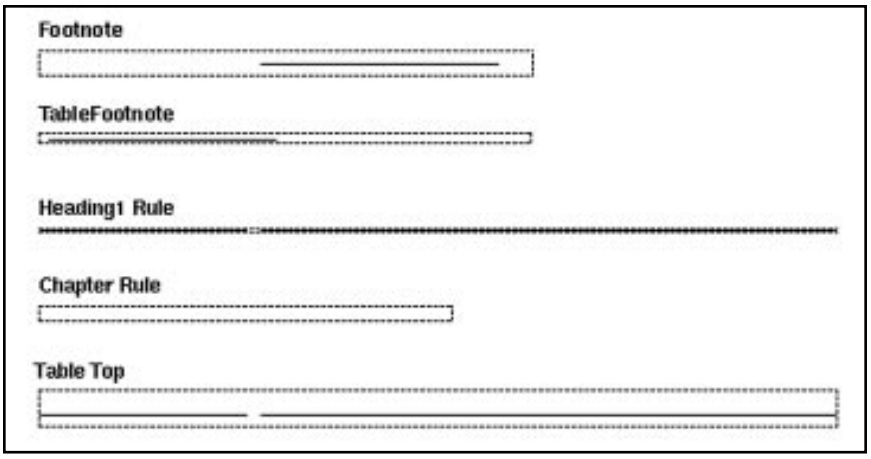

Figure 4. A Reference page stores common page elements.

Maker ships with a thick manual, a quick reference guide, and a pocket guide.

Online reference is available, but the print in many windows is small and hard to read. The help files include an index and links to the online manuals, but no Search function.

A better choice for getting started are the online tutorials. These miniature applications guide you through many features of the product, including paragraph and character formatting, placing graphics, and generating a table of contents. Each tutorial program uses actual FrameMaker files for practice. The program senses whether you follow the instructions correctly, correcting you when you make a mistake and automatically advancing to the next step when you perform the requested action. The tutorials are created with FrameMaker itself and illustrate an excellent high-end use of this product.

Interface

FrameMaker is not your average word processor; expect a definite learning curve. Some familiar word processing interface elements are present, but they work somewhat differently than in other programs.

FrameMaker has a single toolbar (called a QuickAccess bar) with several "pages" that you flip through by clicking a button on the bar. All pages share a set of common commands, while the remainder of the buttons differ with each page. While this feature saves screen space, it would be nice to have the option of having several toolbars open at once, since some of us do have large monitors—after all, Adobe does state "two page display recommended" in the system requirements on the package. Another helpful option to include would be a small pop up box listing each button's name as it is pointed to, as in Word 6 and other programs. While some of the buttons' functions are obvious, many are not and could benefit from an explanatory pop up.

Text formatting in FrameMaker uses the powerful Paragraph and Character Designers and Catalogs. If the paragraph style you want is already stored in the document's catalog, you can simply click on the paragraph (no need to highlight it) and then click on the style in the floating catalog palette. For a character style, you need to highlight the selection to be formatted.

Creating styles, however, is more difficult. The Designer dialog looks intimidating. Fortunately, the online tutorial guides you through your first steps in creating and modifying styles. Also, you can import styles from other documents. I gave a fairly ordinary document a professional, polished look by importing the styles from one of FrameMaker's report templates. Of course, I needed to have styles already defined for this process to work when the template's styles replaced mine. FrameMaker won't attempt miracles like Word 6's questionable "AutoFormat" feature.

Master and Reference pages allow you to specify formatting to be applied to groups of pages, such as: Right, Left, and First Page. You can also specify common page elements and their placement, such as: Rules and footnotes. Unfortunately, you cannot view the Body pages at the same time as the Master and Reference pages. Once again, those using large monitors may resent this limitation.

Document types

FrameMaker is ideal for creating long, detailed, technical documents such as software manuals or books. You can

create a FrameMaker book document containing a menu with links to each section of the file. Table support is robust. A built-in equation editor allows creation of scientific text.

FrameMaker can open and save documents in many common application formats, including Word, WordPerfect, MacWrite, Nisus, and WriteNow. The program didn't do too well with an outline created in Word 5.1, but the styles may have been too difficult to convert properly. A Rich Text Format (RTF) document also didn't quite display properly. Perfection is elusive in the confusing universe of document formats.

FrameMaker excels in its support for hyperlinked documents. Hyperlinks allow easy navigation of documents, similar to browsing a Web page. Creating a hypertext table of contents based on section headers is fairly simple. Far more complex projects are possible, including the interactive tutorial files included with the distribution. However, such a project requires a lot of work and typing many commands—no drag and drop file building here. Projects can be freely distributed with the FrameViewer application for people who don't have FrameMaker.

Like most current desktop publishing programs, FrameMaker attempts to provide some support for the World Wide Web. Unfortunately, I was unable to find anything in the online or printed documentation about it. You can save a file as HTML, but the results may be unpredictable depending on what kind of formatting is used. I did have great success with converting an HTML document to FrameMaker (most of the styles stayed intact) and the targets of hyperlinks were even indicated as footnotes. However, most people will probably want to convert from FrameMaker to HTML and not the other way around. Providing more documentation on how to perform this conversion would be very useful.

FrameMaker excels in its support for hyperlinked documents. Hyperlinks allow easy navigation of documents, similar to browsing a Web page.

Graphics

It is not surprising that the makers of Photoshop and Illustrator include robust graphics support in FrameMaker. Many image formats, including GIF, can be placed in a document, either by reference or contained within the document itself. The graphics look great on the screen, and can be manipulated, to some extent, within the program. FrameMaker comes with a basic set of drawing tools, but you're unlikely to do any serious graphics work here.

Stability

When testing FrameMaker, I experienced a few crashes. Freezes and bombs are not all that unusual in my long Macintosh experience, but my machine has been fairly stable and I was surprised to have several crashes over just a few days time. I must say that I was most pleasantly surprised by the particulars of the first crash.

While performing the innocent action of pulling down the View menu, the program informed me that something had gone wrong and it would simply have to quit. Before doing so, however, it listed an internal error number and an email address for reporting the error, and asked if I wanted to save my work before quitting with a Type 3 error. The program even generated a log file of all actions leading up to the crash. How polite! Unfortunately, the next two times the program crashed it took my whole system down with it, without any warning or explanation—well, the third time was an "Illegal instruction error" bomb, but I believe Apple provided that information.

Perfection is elusive in the confusing universe of document formats.

The Big Picture

All in all, FrameMaker is an powerful tool for creating polished, complex technical documents. If you are not in a technical field, you can probably make do with cheaper software. This software is also not a great tool for Web publishing—at least, not yet. Whatever you use it for, expect to spend some time learning its features and quirks. The time will be well invested.

FrameMaker 5
Minimum system requirements:
CPU: 68020 or greater
(68040 recommended)
Operating System: 7.0.1 or later
(7.1.2 for PowerPC)
RAM: 5 megs
(8 megs recommended) for 68K systems, 8 megs with virtual memory on, 16 megs recommended for PowerPC systems.
Disk space: 10–30 megs free hard disk space, 25 megs recommended.
Display: 640x400 or higher VGA monitor, two page display recommended

I tested FrameMaker on a PowerComputing PowerCenter 150 with 88-megs of RAM, a 1-gig hard drive, and a 21" Radius PrecisionColor Display.

Contact information:
Adobe Systems Incorporated
1598 Charleston Road, P.O. Box 7900
Mountain View, CA 94039-7900
www.adobe.com

Price: $895 (retail)

Julie Bernstein is a computer specialist and Webmaster at UC Berkeley and lives virtually on the Web at www.base.com/juliemb/juliemb.html.

Wanna Make a Book?

Get FrameMaker, It'll Do It

by Yvonne Mann

I started with FrameMaker for Windows six years ago. To this day, I am most comfortable with this particular document publishing software. PC Windows is my day-to-day platform, but I had a chance to try FrameMaker Release 5 on a Macintosh. To my surprise, the menu selections and navigations were almost identical to the Windows version, with a few Mac specifics (some of which I will go into). It was just like home!

One of the most powerful tools FrameMaker offers is the ability to generate a "book" complete with generated lists, such as table of contents, lists of figures, tables, indexes, and cross-referencing across chapters (files). The book format is a reference master file that lists the order of all the other files linked together to make that book. A simple example of a book is a cover page file, followed by table of contents file, a body of contents file(s) usually expressed in chapters, ending perhaps with an index file.

Adding or deleting a chapter, or updating the table of contents is a cinch. So are many other editing processes. From the reference master file, you have the capability to change the order of the files, delete or add files, manipulate the page and paragraph numbering flow, generate and update the book, and print a partial or complete book. The end result can be a very professional looking manuscript or book. My company uses FrameMaker to generate all of our field manuals; some as little as 10 pages and others as much as up to 800 pages.

One drawback to FrameMaker is that customizing the appearance of generated lists—like table of contents file—may not be an easy task to do. It relies on keyed predefined building blocks and associated styles to help define and present the layout on a reference page. To fully get what you want usually takes trial and error. It took me about one to one-and-a-half hours to get the initial table of content layout done the way I wanted. But once a layout is established, it can be saved as a template for future use on other generated table of contents.

What else can FrameMaker do? Like many word processing software programs, FrameMaker can generate articles, reports, letters, memos, and slides.

Features

What's a Book without Pictures?

In the FrameMaker Mac version, you can import QuickTime movies, and play the movies from within the FrameMaker document, assuming QuickTime is installed (not included with FrameMaker). This capability can be effective for presentation documents. Let's suppose you've sold an idea to a progressive car company. You're in the middle of making a manual of your product while some chapters are still out, pending the editorial department. Your client, however, wants to see what's happening with the product they're buying from you. Right now. The moving pictures (standing in for the missing text) can *illustrate*, for example, how energy can be stored in flywheels of a regenerative braking system, thus developing a zero-emission automotive power system. (Meanwhile your engineers and tech writers are frantically figuring out the wheels' optimal angular velocity and revolutions per minute for the different stages of the braking system.)

In the FrameMaker Mac version, you can import QuickTime movies, and play the movies from within the FrameMaker document…

You can include illustrations in your FrameMaker document by using the drawing tool palette or importing graphic files. When importing graphic files, such as bitmaps, vector graphics, and Desktop Color Separations (DCS), you can import by referencing the graphic file or copy the file into your working document.

For graphics intensive manuals with many recurring graphics, referencing graphic files is the better option over copying the files to the document. When it comes time to update a recurring graphic, updating the graphic file will update each and every occurrence of that graphic in the working document.

Once an imported graphic is copied into the document, it becomes an object and can be manipulated with FrameMaker drawing tools—fills, line widths, colors, size and shape, repositioning, cut/paste, copy/delete, drop shadow, object stacking, flipping, rotating (Mac only), anchor to text, ungroup/regroup objects, and more. Another Mac feature is the ability to take an imported PICT image and Ungroup the image to its component objects. You can then edit the object using the drawing tools and graphic commands. (Some of the PICT information may be lost in the process however.)

Table Format

The table format feature is worth mentioning. I like the fact that when a ta-

ble overflows onto the next page, the header row is automatically placed at the top of the continuing body table row. Three years ago, I found that Word did not automatically handle the header row. Since I am mainly a FrameMaker user now, I'm not sure if Word offers this feature now. Also, rotating or straddling (combining) individual cells in a table gives users more variations on table formatting.

Cross-Referencing

Cross-referencing is cool to use. For example, you can reference to an original source from any file, and then define what it is that you want referenced—the page number, the heading numbering, the heading text, a particular paragraph, a particular table or figure, some of the above or all of the above combinations. When required to change the source, maintaining the reference update is as simple as using Update Reference in a dialog box or allowing FrameMaker to automatically update cross-references whenever opening or printing a document. In the course of bad cross-referencing, you will be notified of any unresolved cross-references. You will then have the opportunity to ignore the message or investigate and correct the unresolved cross-reference.

Variables

The variables feature is defined by two types of categories: system variables and user-defined variables. System variables are as follows: current page, total page count, current date, modify date, creation date, and file name. User-defined variables are whatever you want to set a variable to. For instance, I can set Author to Jane Doe. Variables are most commonly used in headers and footers, but can be used anywhere in the document. The powerful advantage in using variables is that it is a universal feature. Changing a variable will apply to *all* documents/files using this variable. So, let's say Jane Doe has her name in the header of a 800 page manual she has written. The manual is separated into 20 chapters (files). For whatever reason, Jane Doe has become John Doe. With the variables feature, 800 pages of Jane becomes 800 pages of John via a simple matter of several keystrokes. In other words, you don't have to open each and every file that contains this variable to change it.

Conditional Text

Conditional text is an intriguing and powerful feature. It is commonly used when one single document contains several versions for viewing or printing.

> *[V]ariables … is a universal feature. … [Y]ou don't have to open each and every file that contains [the] variable to change it.*

Let's take a simple example. A car company generates a single manual to cover car operations in all their line of cars. This company's line of cars includes sports vehicles, sedan vehicles, recreational sports vehicles, and trucks. Within this single manual, the user can use conditional text to Show/Hide text that is specific to each line of cars when viewing and/or printing the car operation manual to the specific line.

Let me give you another example to really hone in on the versatility of this feature. My company is global. A typical manual has a version for the American market, as well as versions for the German or Chinese markets (text is all in English). For *viewing* purposes, the American specific text is displayed as black type, the German specific text in blue, and the Chinese specific text is shown in red. When the time comes to generate the German version, I hide the American and Chinese specific text. On the receiving end of this single document, the viewer, the German division, will see the appropriate version, specific to their country. This is nifty.

Math

One feature I don't use frequently but cannot dismiss here is the math elements palette. It has equations, functions (trigonometric, hyperbolic, logarithmic, etc.), delimiters, calculus, relations, and matrices. The extension to this feature is the ability to evaluate equations and expressions by substituting values and performing the computations: addition, subtraction, multiplication, division, evaluate exponents, expressions, derivatives, integrals, summations, intersections, unions, and much more than I would ever want to tangle with.

Our engineers find this aspect of FrameMaker very handy.

In Sum…

I have shown how powerful FrameMaker can be. I use FrameMaker for just about everything and anything. Besides books, manuals, reports, and memos, FrameMaker can come in handy for fun projects such as greeting cards, labels, signs, business cards, calendars, etc.

My gripes are: The software takes up too much memory, it takes some time to follow and understand the rules for customizing the appearance of text relative to styles. I once had an intensively customized book containing 10 chapters which required about 40 defined paragraph styles. I felt like I was a software programmer.

Among the benefits of this complexity are: shared documents can be used consistently by all members; global changes in such things as style and cross referencing are possible. This kind of power and flexibility is of greatest benefit for longer, more complicated works.

FrameMaker can be very powerful, once you've learned it.

Thanks to E.M. Sanchez for helping me set up the different examples of how FrameMaker can be best utilized.

FrameMaker 5
Minimum system requirements:
Computer: 68020 or greater (68040 recommended), with 7.0.1 or later (7.1.2 for PPC)
Memory: 5 megs (8 megs recommended) for 68K, 8 megs with virtual memory on (16 megs recommended) for PPC
Disk space: 10-30 megs free hard disk space (25 megs recommended)
Display: 640x400 or higher VGA monitor (two-page display recommended)

Adobe Systems Incorporated
1598 Charleston Road, PO. Box 7900
Mountain View, CA 94039-7900
http://www.adobe.com/

Price: $895

Adobe Persuasion 3.0

by Tom Vernon

Just as word processing and desktop publishing programs are beginning to look more and more alike, so it is with multimedia and desktop presentations packages. Just a few years back, presentation programs like Power Point and Persuasion enabled you to quickly put together a slick-looking slide show and take it on the road. You could even do your handouts at the same time. This was a quantum leap from the days when thermal transparencies were the norm, and the media department needed a week's lead time just to make your overheads.

Before long, everyone was doing desktop presentations with LCD pads, and the law of diminishing astonishment kicked in. You needed more to dazzle your audiences, or even keep them awake. As computing power increased, software manufacturers responded to this need with a greater array of bells and whistles. All of which brings us to today, and Adobe Persuasion 3.0, the latest example of this new hybrid desktop presentation/multimedia product.

This is the first release of Persuasion since Adobe acquired Aldus Corporation. Long-time users will no doubt be familiar with the interface, but will also note many of the product's new features. Users can now create and format charts and tables using Adobe Chart and Adobe Table, and OLE-embed them in Persuasion. Data can be shown in 2-D and true 3-D charts. Sound, video, and animation can be woven into your presentations with ease. Timing and transitions can be controlled for each slide layer individually. Finally, Mac users will appreciate that Persuasion 3.0 provides seamless transitions in and out of the PC environment.

Creating a Presentation

Adobe recommends a three-step process to create a presentation. First, you select your final output medium and design. Next, you enter the content. Finally, you proof your work and make sure the content and design are accurate. It's really a bit more complicated than this, but a fair beginning.

Your presentation may be output as overhead transparencies, 35 mm slides, or on-screen, to be used with a video projector or LCD pad. All have slightly different aspect ratios, so you'll want to choose before you begin entering text.

Having selected your medium, your next step is to choose a template to work with. Adobe provides a fair number with the program. Thoughtfully, they've put them all in an AutoTemplate guidebook so you can do side-by-side comparisons. You get twenty choices for on-screen video, thirty for 35 mm, and twenty-eight for overheads.

Different AutoTemplates serve different purposes. If you have lots of detailed instructions, you'll want one with a simple design that isn't distracting. A basic text presentation on the other hand, might be livened up with a template that's more striking.

Room environment factors into the selection [of templates] as well. A simple or neutral background is your best choice if your environment is an unknown. It's useful for daylight or short viewing distances. Complex templates tire viewers quickly, and are best reserved for fast-paced presentations in partially lit rooms.

Room environment factors in to the selection as well. A simple or neutral background is your best choice if your environment is an unknown. It's useful for daylight or short viewing distances. Complex templates tire viewers quickly, and are best reserved for fast-paced presentations in partially lit rooms.

Adobe knows that many of us are chromatically challenged, so each AutoTemplate comes with the colors for titles, subtitles and text already selected. Of course, any of the settings in the AutoTemplate can be changed to suit your special needs.

If you're brave, or just want to experiment, you may create your own templates for Persuasion. Existing AutoTemplates can be modified, or you can design your own from scratch. Doing this creates a black and white AutoTemplate with one slide master and one background. You can add as many slide masters and backgrounds to a template as you need.

Having determined your output medium and selected the right AutoTemplate, you need to enter the content: text, charts, and graphics. While you can enter text directly onto slides, it's much easier if you switch to the outline mode. By using the tab and arrow keys, you can quickly move between headings and subordinate levels. The usual Macintosh cut, paste, copy, and delete commands work as well.

The latest rave in presentation programs is doing it on the Web. Adobe Web Presenter is available to Persuasion 3.0 users for download from the Adobe WWW site, and includes features like drag and drop of URLs, customizable Internet AutoTemplates, and support of GIF and JPEG formats.

If you've already created an outline in a word processing program, you can save it as an ASCII text file and then import it to your Persuasion presentation.

The documentation that comes with Persuasion is fairly complete, but awkward. What you get is a 230-page user manual, an AutoTemplates guide, a directory of clip art, the chart manual, and presentation tips. The smaller documents are hard to store and easily lost. My vision for improved documentation would be a spiral-bound manual that stays flat. All of the extras could be easily included as appendices.

Getting ready to take your show on the road can be a bit tricky. You'll need the Mac or Windows runtime version of Persuasion which Adobe calls Players. You also need to save your completed slide show as a Player file, and here's where things can get rough. It doesn't take much to completely fill a 1.4-meg disk. My recent 20-slide presentation with two pieces of clip art and a modest number of transition effects was over the limit. After removing all of the transitions and clip art, it barely fit on the disk. There's some mention of this in the 'Presentation Tips' flyer, but when I needed the info, I'd forgotten about this little 3" X 7" item which I'd stuffed in the back of the manual.

The recent issue of *Adobe Magazine* had a good description of the problem in the 'Persuasion Q&A' section. By designing a slide show with a minimum of graduated fills, limiting auto animation effects, reducing the resolution and color depths of imported bitmap images, and reducing the number of layers in the file, you can probably get more than twenty slides on a disk.

Web Prsenter

The latest rave in presentation programs is doing it on the Web. Adobe Web Presenter is available to Persuasion 3.0 users for download from the Adobe WWW site, and includes features like drag and drop of URLs, customizable Internet AutoTemplates, and support of GIF and JPEG formats. Web Presenter will be included in the next release of Persuasion, due to be released soon.

Of course, there's a real danger that all of this newfound multimedia muscle will be used inappropriately. It's easy to envision the novice user sprinkling a presentation with every slide transition and effect available. The savvy speaker who understands presentation software will want to use the new multimedia features to show the audience the message rather than using the text to tell them. I have to wonder though, how many savvy users there will be.

To run Persuasion you'll need 68030-based Macintosh or higher. Of course, any Power Mac will do just fine. Depending on what options you install, 11–33 megs of real estate will be needed from your hard drive. You'll also need 5 megs of available RAM for older Macs, and at least 16 megs for Power PCs. While Persuasion 3.0 actually runs under System 6, companion programs like OLE, Adobe Chart, and Adobe Table, do not.

Adobe Persuasion is available through retailers and the leading software catalogs. One popular mail-order house has both the Mac and PC versions listed for $280.00.

Adobe Persuasion 3.0
Adobe Systems Incorporated
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PO Box 7900
Mountain View CA 94039-7900
Phone: (415) 961-4400
HTTP://www.adobe.com

Tom Vernon is completing his Ph.D. in education at UPenn in Philadelphia. In his nonexistent spare time, he reviews computer programs, CD-ROMs, and books for various publications.

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CorelDRAW 6 vs. Canvas 5.0

Battle of the Graphics Super Heavyweights

by Scott Beamer

After MS Excel, the piece of software longest on my hard disk is Deneba's Canvas. Various versions of it have been my graphics mainstay for almost nine years. I read with interest about the new version about to come out. I also noted Corel was about to release the long rumored CorelDRAW for the Mac. I sensed an article here, a classic head to head battle in the tradition of MS Word vs. WordPerfect, Illustrator vs. Freehand, or PageMaker vs. Quark Xpress.

Shock is how I'd describe my reaction to first hefting the package of CorelDRAW 6. The ballast in the large box is three manuals (over 500 pages each), weighing in at more than six pounds. The need for all the manuals is suggested by the three CDs also in the box. Actually, all the applications are on the first disk. The other two contain fonts and clip art.

The next jolt was to discover that Easy Install would require 220 megabytes on my hard disk. Yes, it requires a PowerMac or clone. To open two files in CorelDRAW, you need at least 20 megabytes of RAM. CorelDRAW itself requires 42.5 megabytes of hard disk space. Additional requirements are System 7.5 or better and a CD ROM drive.

Canvas 5.0 comes in a box almost as large as CorelDRAW, but inside is a single manual, about the same size as one of the CorelDRAW manuals. (The rest of the space in the box is taken up by a cardboard filler and incongruously, a box of ten floppy Installation disks.)

The next jolt was to discover that Easy Install would require 220 megabytes on my hard disk. …

One has to wonder what can Canvas offer in its 5 megabyte application to compete with Corel's overwhelming flood of software.

The Canvas manual is dual platform, for both Mac and Windows. Also inside are three CDs, but the Easy Install requires only 20 megs on your hard disk. Canvas 5.0 will work on 68020 machines or better, though a Power PC is recommended. It requires System 7.0 or better, and at least 12 megs of RAM, with at least 8 megs available to Canvas. A CD ROM drive is needed to access the clip art and fonts.

You're Going To Need A New Hard Disk For This

The most immediately apparent difference between CorelDRAW and Canvas is that Corel has a suite of standalone applications on its CDs. Canvas remains a single application with numerous modules.

In its suite, besides CorelDRAW, there is WordPerfect 3.5.2 (10 megs), CorelDREAM 3-D (21 megs, a 3-D modeling and rendering product. This is a version of Ray Dream ver. 4.0), Corel Artisan (7.5 megs, a bitmapped graphics and photo retouching application derived from Oasis, a Mac paint program), Corel TEXTURE (11 megs), and Corel TRACE (for converting bit mapped art to outlines to be used in CorelDRAW).

More surprising are the other products also included, but hardly mentioned in advertising. These include: Kai's Power Tools 3 SE (13.3 megs) used as a plug-in for Artisan, Corel MultiMedia Manager (5.8 megs), Corel Chart (16 megs), Netscape Navigator (4.3 megs, version 2.02), and also Master Juggler Pro 2.0 (900K) for font management. Just to fill out the CD, it contains 1,500 fonts, 25,000 clip art images, 1,000 photos, 750 3-D models, and hundreds of other textures, templates, and macros.

Especially amazing, considering the amount of software included in this package, is the price. While early advertising mentioned a list price of $595, current advertising claims a list price of $389.99. However, Corel does not seem to expect anyone to pay anything close to this price for some time to come.

The competitive upgrade offer is intended to include practically everyone, and its price is $149.99. To qualify, you merely need proof of ownership of CorelDRAW for Windows, WordPerfect, or any Mac graphics or photo editing software. Canvas 5.0 offers the same competitive upgrade price to those owning any Mac graphics program.

One has to wonder what Canvas can offer in its 5 megabyte application to compete with Corel's overwhelming flood of software. A little investigation will show it has much the same abilities, all integrated in a single package. For years, it has offered users the ability to combine Draw, Paint, and Illustration (bezier curve) graphics all in one document. Canvas 5.0 adds photo retouching, 3-D modeling and rendering, presentation, and page layout. Also, Deneba has put as much on its three CDs as Corel (about 1.9 gigabytes).

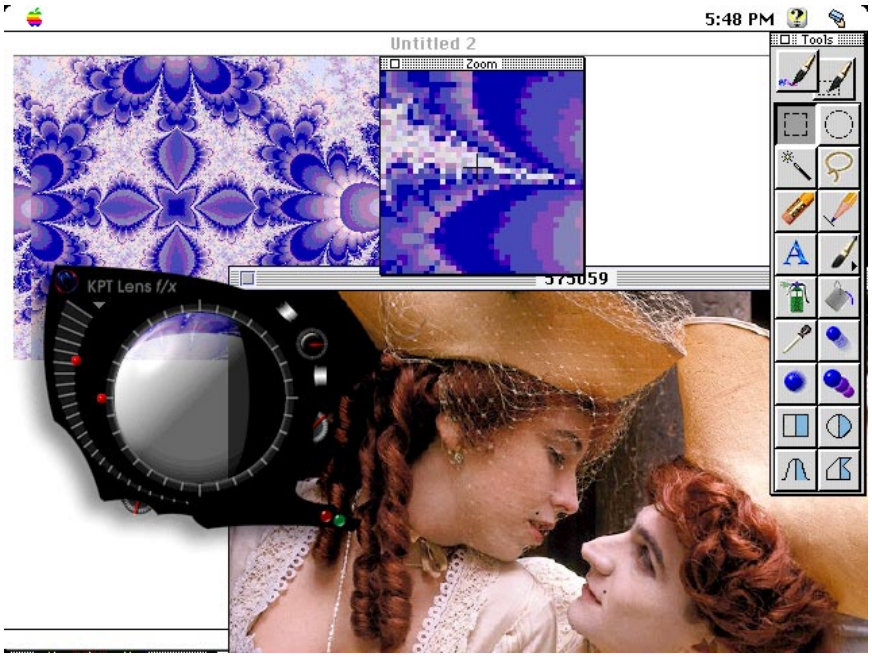

Figure 2. Corel Artisan handles both painting and photo retouch chores. The results can be included in CorelDRAW projects. Many plug-ins add power to the package, including Kai's Power Tools 3 SE.

Figure 1. Ever wish you could individually adjust the position of characters bound to a curve? In CorelDRAW you can, as well as rotate them individually. It also has so many other effects that it will take months to learn them all.

What Is It And Who Is It For?

It is tempting to consider these graphics packages as something of a ClarisWorks of graphics, but this understates their strength. The graphics abilities of these products are clearly aimed at the graphics professional.

Both Corel and Deneba have gone on record stating they do not expect users of Freehand, Illustrator, or PhotoShop to toss their old software and race out to buy CorelDRAW or Canvas. They do express optimism that such users will want to acquire CorelDRAW or Canvas to bulk out their overall graphic tool chest.

Those who are new to heavy duty graphics software face a daunting challenge to afford and learn to effectively use one of each kind of graphics software. Some seem to think that to be a professional, one must have the best tools, yet few have all the great Mac graphics applications.

For most, they would be prohibitively expensive to buy and keep updated, let alone deal with the hardware requirements of such a software library. This still does not address the time required to become an effective user of each. Even pros who are experts with one piece of graphics software rarely have a complete collection of top-of-the-line graphics products.

The competitive upgrade price for these two products makes either of them an excellent choice for anyone wanting to improve the graphics abilities of their software library. Schools, graphics studios, and small offices appear to be the likely users of these products, but even heavy duty graphics studios seem likely to be attracted by the price and breadth of features in these products.

A Closer Look

While CorelDRAW and Canvas 5.0 are too similar in features and abilities for anyone to want to own both, there are significant differences in their abilities. The biggest difference between them remains the key feature of Canvas: it allows the user to include Paint areas in the same document with Draw objects and bezier curves. The tools to edit the various elements are all on a single palette.

CorelDRAW has no answer to this. While it can combine Paint or photo elements in a Draw document, they cannot be edited there. Paint and photo retouch must be handled in Artisan, a separate application.

In its advertising, Canvas 5.0 emphasizes its text editing and page layout abilities. While these are even more powerful than before, I feel I can still do a better job in these areas with WordPerfect. CorelDRAW also has rather robust text editing capabilities.

For 3-D modeling and rendering, there is no contest. CorelDREAM 3-D is a full featured, standalone application, replete with over 750 3-D models to give one a head start on projects. While Canvas does support QuickDraw 3-D, and Corel doesn't, the extruding features in Canvas are no match for DREAM. Canvas has a texture tab in its Inks palette that allows one to choose textures and edit them, but CorelTEXTURE is far more powerful and comes with over 100 templates.

Some of the features in these packages seem to be attempts to match the features they expected the competition to have in their new Mac version. There is a presentation module in Canvas, presumably because there is one in the Windows version of Corel (There is none in CorelDRAW for Mac).

[Canvas] allows the user to include Paint areas in the same document with Draw objects and bezier curves. The tools to edit the various elements are all on a single palette.

CorelDRAW has no answer to this.

Similarly, the inclusion of WordPerfect on the CorelDRAW CDs and Netscape Navigator gives the suite modest HTML editing abilities. Corel may have done this in response to Deneba's press releases mentioning that Canvas 5.0 would include HTML tools. (It doesn't.)

Bigger Than A Truck Stop Breakfast

Corel seems to have an underlying philosophy in software design similar to that of a truck stop breakfast, namely "more on your plate for a lower price is better." CorelDRAW claims they permit document sizes up to 150 by 150 feet at a resolution up to 254,000 dpi (0.1 micron). Canvas claims similar but more modest stats in these areas. Both products have impressive color control abilities (including the option to use many standard color reference systems such as Pantone), for output as: color separations, presentations, color printouts, or on the web. They both import and export a wide range of graphics file types, perhaps the widest in the industry.

Canvas has a spelling checker and automatic hyphenation. CorelDRAW has these as well as a thesaurus and grammar checker, all in eleven different languages. In WordPerfect there are dictionaries, thesauri, and hyphenation dictionaries for four versions of English (Canada, UK, Australia, and USA) and three European languages (French, Spanish, German). It also has an English grammar checker.

The redundancy of these dictionaries in Corel's suite of products makes one wonder if, in fact, redundancy may explain much of the bulk of the Corel package. WordPerfect comes with a significant library of fonts and clip art from previous versions, cataloged in full color in its manual. These appear to duplicate Corel's own set.

Made For The Mac OS And Twisted For Windows Or Vice Versa

Perhaps even more bothersome is some redundancy in the CorelDRAW application caused by its porting to the Mac OS. This move has not been entirely comfortable. While I am impressed by how much progress has been made since I wrote a preview article about CorelDRAW for the previous BMUG Newsletter, "First Look—CorelDRAW for Macintosh," pp. 186-188, I still find several clumsy redundancies present.

Canvas has a spelling checker and automatic hyphenation. CorelDRAW has these as well as a thesaurus and grammar checker, all in eleven different languages.

For instance, Duplicate and Copy/Paste are both found under the Edit menu Copy/Paste takes many seconds even to copy a simple rectangle. Duplicate is instantaneous. The Document Layout dialog box seems fairly redundant to the Page Setup. Text can be edited in a document, but CorelDRAW seems to prefer text be edited in the "Edit Text …" window, which does not support Drag and Drop.

CorelDRAW claims to support Mac Drag and Drop, but most of its suite of applications don't support it. It took a few minutes for the text I dragged from CorelDRAW to appear in WordPerfect. It took about twenty seconds for the text I dragged back to appear in CorelDRAW. It took a minute and ten seconds to drag a bit of text to the Desktop, producing a low memory error. WordPerfect is the only application in Corel's suite that seems to support Drag and Drop as Apple intended.

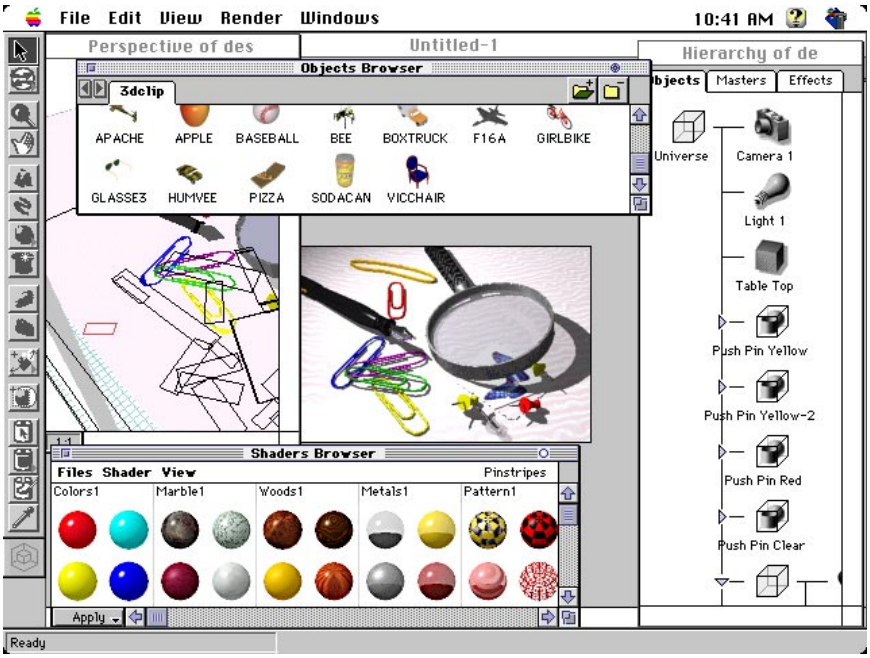

Figure 3. CorelDREAM 3D is a high powered 3D modeling and rendering program. While the learning curve is steep, even a beginner can give special lighting and shadowing effects to objects to include in CorelDRAW projects. There are also 750 templates to get you started.

Surprisingly, Canvas doesn't support Apple's Drag and Drop. It has its own version which allows text and graphics to be dragged between Canvas documents only. Note that Canvas does support Microsoft OLE under Windows. This is somewhat disappointing, as it is another sign of how much influence the design of their Windows version of Canvas is now having on their Mac product. Other signs of this reverse porting are the new gray dialog boxes with tabs, and a somewhat redundant "Document Setup" … dialog box. The knife to the heart, though, was when I went to save my first effort and found Canvas suggests the default suffix of ".CV5", as a Windows program would.

A Road Test

After running the tutorials, looking through templates, then finally trying out some efforts of my own, I am impressed by both the breadth and depth of the abilities of both these packages. People can create a wide range of professional quality documents. One can make a flow chart, weather chart, electronic layout, architectural rendering, or any number of other specialized drawings. There are also hundreds of standard business templates to choose from, such as Avery labels, which one can then modify.

The massive clip art collections are a major part of these abilities. In use, I found those with Canvas very difficult to sort through to find something I wanted. In addition, the only guide to the thousand or more fonts they claim is a poster-sized piece of paper showing perhaps all of the type faces. The way one is expected to browse the Clip art on CDs is to open the Art Gallery palette in Canvas, find the index on the CD and open it (nothing appears in the Gallery window), then type in key words. It will search through its index for images with that keyword on that CD. To look on another CD, it is necessary to put it in the drive and open its index. This is an unacceptably poor way to manage such a massive collection of clip art. Also, all clip art is saved in Canvas 5 file format, so other applications cannot directly access it.

In contrast, even though Corel seems to have considerably more variety of clip art, photos, templates, and samples, finding the thing I need is much easier. This may be due to the fact that one of the manuals (of over 500 pages) is entirely a full color catalog of all this, including seventy-five pages devoted to all the type faces alone. This is a far superior way to find something in such a collection. Additionally, Corel's software includes Master Juggler Pro to manage the fonts; and Corel Multimedia Manager which can browse clip art, fonts, sounds, QuickTime movies, and various graphic files and photos.

Even though Corel seems to have considerably more variety of clip art, photos, templates, and samples, finding the thing I need is much easier. This may be due to the fact that one of the manuals (of over 500 pages) is entirely a full color catalog of all this, including seventy-five pages devoted to all the type faces alone.

In terms of ease of use and actual utility of tools, I must admit a prejudice. I have used Canvas for something approaching ten years. By participating in beta testing, I have about six months experience with CorelDRAW. I find Canvas easier to use and more efficient in doing what I want to do.

A typical example is how things went when I had the opportunity to scan some photos on the Windows platform and save them to floppies. Back on the Mac, it was a simple matter to open them in Corel Artisan. However, I discovered two problems: one photo was sideways, and some others had an unexpected color shift (from the scanning, not Corel Artisan). I found no quick way to correct these problems in Corel Artisan. Trying the same exercise in Canvas, I had the task done in a few moments.

The Paint and photo retouch abilities of the two packages are an interesting comparison. I did not find the photo retouch abilities of Artisan especially effective. I particularly had trouble with the zoom of a photo. It is not possible to zoom an entire photo in Artisan. Instead, one opens a small zoom window that can't be resized. Zoom affects only it. In Canvas, one can use the normal zoom controls on a photographic image.

In general, I found the photo retouch capabilities in Canvas better than Artisan. Their Paint abilities compare quite differently. Artisan art can be imported by CorelDRAW, but it cannot be edited there. Similarly, DRAW art must be Saved As a Paint file to be imported by Artisan.

It is not possible to zoom an entire photo in Artisan. Instead, one opens a small zoom window that can't be resized. Zoom affects only it. In Canvas, one can use the normal zoom controls on a photographic image.

In Canvas, the two styles of art exist quite comfortably together in a single document (though it will take beginners a while to recognize what parts of a document were made with which set of tools).

Artisan started life as an elegant Paint program on the Mac. It was one of the first to support a pressure sensitive tablet, and it still does. The Tips and Tricks section of the manual shows how to get interesting effects that simulate pastels, charcoal, water color and such. Additionally, Artisan comes with several PhotoShop compatible plug ins, the most notable of which is Kai's Power Tools 3 SE. While trying about half of the effects in Kai's Power Tools produces a window telling you the feature doesn't work and how to buy the full featured version, enough features *do* work and are so spectacular that this is a big plus for Corel Artisan.

However, Kai's Power Tools are also one of the more notable examples of the thrown together feel of the Corel suite. Hidden in the plug-ins folder is Kai's own folder containing more than a megabyte of promotional material and a large useless Windows help file.

The suite of Corel products all share this disjointed feel. In truth, none of them were created to work together, and Corel has spent little time getting them to do so. In a similar way, WordPerfect frequently upstages CorelDRAW, the supposed flagship product in this suite. WordPerfect is much more of a Mac product and often works just plain better.

Canvas also has a rushed to market feel to it. One example is the lack of more appropriate tutorial files (there are only two). Another is the inclusion of a folder of clip art for Web pages, yet no other tools or discussion of the Web. The lack of management tools for clip art is inexcusable. It greatly reduces the value of the included material.

While Canvas claims heavy duty word processing and page layout abilities and has a long list of import filters for text, it does not include one for ASCII text. Canvas cannot read its own "Read Me" file! Also, the newest filter for MS Word is version 4-5 and for WordPerfect is 2.x. These are for versions of years ago, and they perform poorly even on older documents.

Figure 4. The only way Canvas provides access to 20,000 and more Clip art images on its CDs is with this art Gallery. Open the index on the CD, then type in key words.

WordPerfect Still Stands Alone

The inclusion of WordPerfect in the CorelDRAW suite is as ungainly a match as the prize in a CrackerJack box. What does the plastic toy have to do with caramelized popcorn? Yet, I suspect buyers of both are plenty happy for the addition.

Actually, WordPerfect adds some timely abilities to the CorelDRAW suite. WordPerfect includes a clunky but quaint HTML editor. It also includes Netscape Navigator (the elderly 2.0.2 version) which is necessary to see any HTML pages created in WordPerfect. MacWEEK reported that about the time you read this, Corel is expected to announce they are working on an OpenDoc version of WordPerfect.

This version of WordPerfect (3.5.2) will make many veteran users of the product happy, knowing that it seems to have finally found a good home. It includes about 30 bug fixes, but few new features. However, there are the foreign language dictionaries and a full color paper manual (things the Novell version of 3.5 didn't include).

Most WordPerfect users will have to be tempted by the CorelDRAW competitive upgrade offer. Those who aren't have other choices. While the list price is $249, the upgrade is $89. Those who have the Novell version 3.5 can get a new CD for $24.95. Those who don't need the CD

Figure 5. Canvas has added a zany new tool for controlling text on a curve. One of the little triangles allows you to drag the text further or closer to the curve. A second allows you to center the text. The little square allows you to drop the text below the curve or raise it above.

can download the upgrade free from Corel's web site. Note that the download version doesn't have the foreign language dictionaries.

Getting to Know Them

While it would seem that CorelDRAW's three full color manuals weighing in at over six pounds should get the job done, remember, one is just for WordPerfect, and the second is just a catalog of clip art and fonts. That leaves the third to cover seven applications. This manual is no more integrated than the products in the suite. There are even seven separate indices in the back of the book.

CorelDRAW has 142 pages to itself, and it only covers the Mac version of the product, but this is not a Mac style manual. There is no Quick Start nor Reference section, let alone trouble shooting. Instead, there is a good introduction to the concepts of a Draw program, seven tutorials which take up the bulk of the space, then a short chapter on working with color.

Though there are a handful of errors in the tutorials, they are otherwise fairly good. Still, the manual seems to mention less than one per cent of the features in the program. The user is left to trial and error as the primary way to learn. It may be there is no easy alternative, but one has to wonder. AppleGuide is included for most of Corel's suite, but it seems distinctly under powered for products of this size and complexity.

Make sure you read and heed the Read Me's on CorelDRAW's first CD. They read more like a list of "gotchas," mentioning such things as: the Undo menu choice does not work in CorelTRACE, and CorelDREAM 3D and CorelChart cannot exchange files with Windows versions of the same products.

Canvas comes with a single two color manual, written for both the Windows and Mac versions. It is relatively well-written, but abandons the traditional style of a Mac manual. It includes no tutorials, although there are two in the monochrome *Getting Started* pamphlet. Strangely, these are for a newsletter and a presentation. None of the Draw or photo retouch features are included. Still, the bulk of the large manual consists of enumerating the features of the program and how to use them. Another 60 page full color pamphlet, entitled *Color Printing Guide*, is included. It is a welcome addition. On disk, there is a slide show of very basic features.

Technical support is available in numerous ways from both companies. For 30 days from your first phone call, Corel provides tech support free (you pay the cost of the call to Ottawa). After that, you can get live phone support for a charge. Twenty four hour free support is offered by IVAN (Interactive Voice Answering Network), Corel's telephone version of FAQs. Answers can also be listened to, faxed or accessed by fax. There is Corel's own BBS, a Compuserve Forum, and a web site (http://corel.com). Updates and patches are also available at Corel's ftp site.

Canvas offers *free* (you pay the long distance charges) live phone support indefinitely for registered users. It also has support through email, bbs, web, and ftp.

Conclusion

It would be nice if I could assign a numeric score in comparing these products, or at least tell you which to choose and which to eschew. I feel this would be inappropriate in the vast majority of likely uses, as both products get the job done well. It is like choosing a car. You are going to have to spend some time comparing long lists of features: not only things like warranties and finance plans, but also the little door between the back seat and the trunk that lets you carry your skis inside, or how many cup holders are present.

The CorelDRAW suite clearly has more software and more bells and whistles. The inclusion of WordPerfect is like a "two for one" sale. I must admit I like WordPerfect better than CorelDRAW, but then, I am a wordsmith.

Canvas makes a game effort to keep up with CorelDRAW in extras and goodies, but in the end, it is not a close second. Where it excels is that all its features are integrated into one, normal sized, civilized, application. In fact, its Paint, Draw, and Illustration elements can exist elegantly in a single document. While Canvas should also be attractive for its adherence to the Mac interface, it has dropped the ball in this area by not including much of recent additions to the Mac OS (such as Drag and Drop), changing many details to give more of a Windows feel to the product, and including a single manual for both Mac and Windows.

The attention this head to head competition will attract may bring more publicity to both products. It would not surprise me to see many graphics professionals considering one of them the base of their software arsenal, to be augmented by one or two well chosen specialty products.

CorelDRAW 6 Suite
List Price $389.95
Competitive Upgrade $149.99

Corel Corporation
1600 Carling Ave. CANADA K1Z 8R7
Ottawa, Ontario
613/728-0826
800/772-6735
http://www.corel.com

Canvas 5.0
List Price $599
Competitive Upgrade $149.99

Deneba Software
7400 SW 87 Ave.
Miami, FL 33173
305/596-5644
FAX 305/273-9069
Email support@deneba.com
Web http://www.deneba.com

QuickTime VR: Showcase for Sacred (and Profane) Spaces

Kyoto Gardens CD-ROM

by C. R. Clowery

I remember my first visit to a Japanese Zen Garden. Macintosh computers and desktop multimedia had not been invented. Walking alone in autumn through Kyoto thirty years ago, I had never seen such subtle beauty, nor had I ever felt so lonely. I turned a corner in Kokodera and came upon a bed of emerald moss, blessed with a dozen crimson-scarlet leaves. The tableau was adorned by Mother Nature, the original Zen Master. The conjunction of vivid colors struck my eye and stopped the world. The sensation filled my heart; momentarily I forgot myself, and seeing nature's beauty as if for the first time, I forgot my loneliness. I learned the power of gardens to transform inner states. I was inspired to share the scene with friends back home. But that wish was frustrated.

Frustration arose because though the photos that passed from hand to hand among the folks in Toledo did communicate my awareness, they held only part of the experience—Fujichrome captured the bright colors, but the actual state of the gardens was elusive, and indescribable. I wanted to convey the universal philosophy embedded in stone, the wisdom of changes reflected in pine needles on a pond, passing on stone and lichen and leaf. A haiku line echoed in my mind's ear.

Kyoto garden rock;
A dew drop moistens
Green moss roots;
The universe in a crystal.

Lunaflora, the creators of Kyoto Gardens CD-ROM, have now brought my thirty-year-old wish a step closer to realization. This imaginative CD has enhanced the limits of eyes and ears. The project was an inspired idea waiting for the technology to catch up. And it has surpassed expectations! We may one day look back on QuickTime VR as a major advance in desktop media for illustrations and information in graphic form.

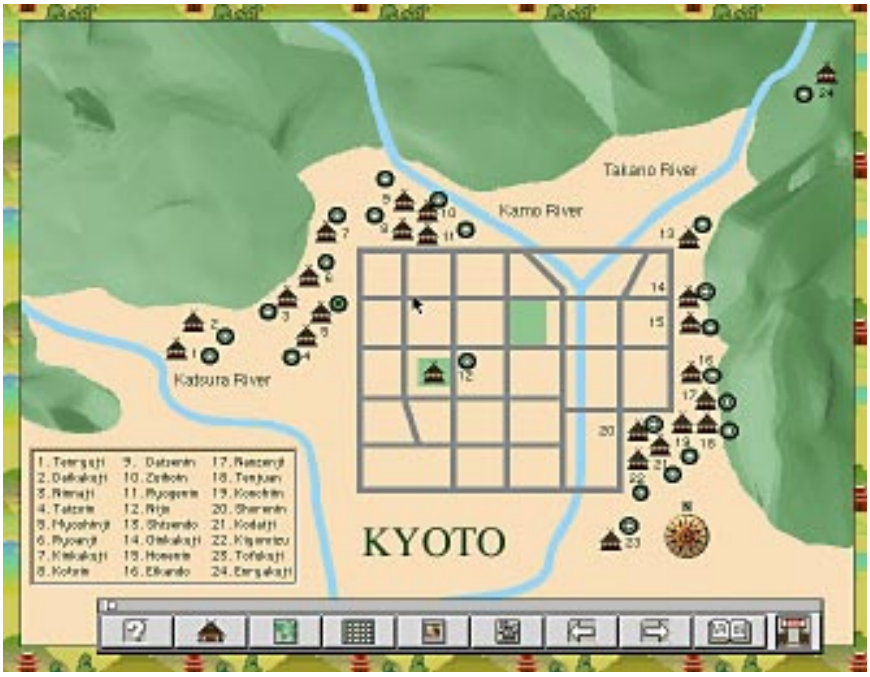

Figure 1. Garden map

Do you recall when you first saw theatre in the round? Breaking the proscenium arch, stepping out of the stage's confines into three-dimensional space made possible new uses of the senses in conveying drama, dance, mime, and music. I think QuickTime VR may generate a paradigm shift of the same magnitude.

Developing Awareness #1

When our grandparents first heard a phonograph play, and when motion picture "talkies" began to speak, the human mind saw new possibilities; little bridges were built across the synapses in our consciousness. We made connections we had never before imagined. I spontaneously registered "cool!" at first sight of Apple Computer's QuickTime VR—the showcase technology of the Kyoto Gardens project. And I nearly overlooked it! I overlooked it because I didn't think it was possible! You know the farm hand in *Oklahoma* who sings "Everything's up to date in Kansas City, it's better than a magic lantern show."

[A]s I pushed the mouse, suddenly the solid "walls" of the frame melted. The formerly inviolable limits of the monitor merged into the next frame, and the next, and then I was turning and viewing the entire scene, as if real!

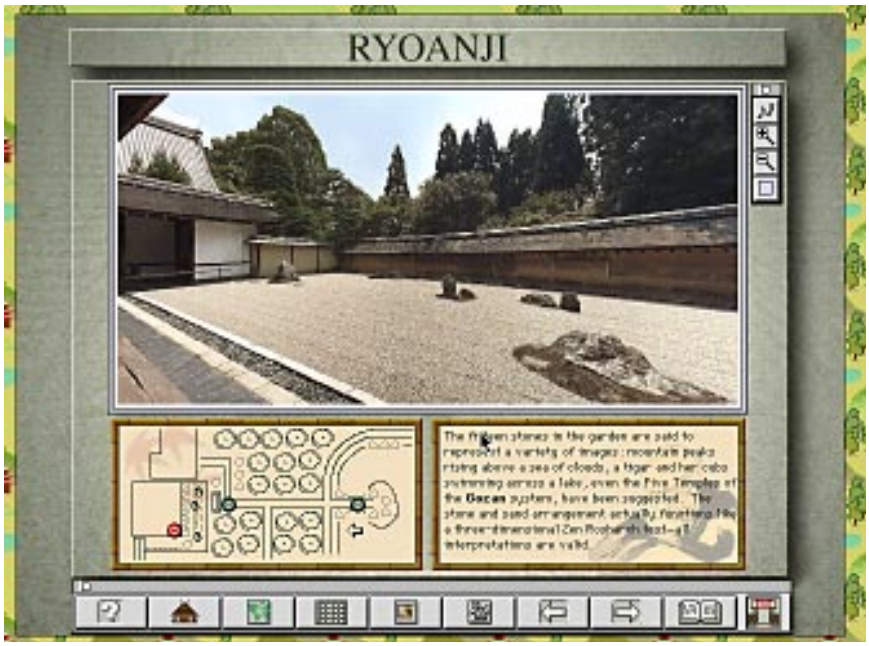

Figure 2. Ryoanji

I confess, at first I didn't know how to operate the all-around feature of the virtual reality camera. An arrow appeared on the cursor, and as I pushed the mouse, suddenly the solid "walls" of the frame melted. The formerly inviolable limits of the monitor merged into the next frame, and the next, and then I was turning and viewing the entire scene, as if real! If your PowerPC CPU is older, you may notice the seams between frames, but the mind quickly accommodates and compensates to participate in the moving picture experience, the way the eyes do with "flip-book" animation. After I caught on, I experimented with variety and customizing: one's changing state and mood can be reflected in each landscape tour. There are infinite possibilities. Each time I revisited the CD, I found new corners and angles of the gardens to explore.

New Sights, Old Stones

Apple's QuickTime VR technology places a special camera in the center of a space and then swings the lens around 360 degrees. Translated to your Desktop, the technology lets you follow your cursor in a full circle around your monitor and see what the camera saw, in all directions. Further, you can zoom in or out, advance or retreat like a wide-angle or telephoto lens on a 35mm camera. The first time you try it, you will need a moment to digest the experience and catch your breath. You will travel to new places in your mind.

Dragon at Peace (Ryoanji)

I first toured Ryoanji, "Dragon at Peace Temple." Although it is not my favorite garden, the world's most stared-at sand and rocks live in this small, functioning Zen temple in the northwest of Kyoto. Ryoanji's (Dragon at Peace Monastery) fifteen black stones and raked white sand has captured the imagination of meditators and philosophers since Soami designed it in 1499. Many eyes have blinked at the configuration of rocks and sand in Ryoanji, and conjured up one story after another. The struggle to make meaning out of rocks and sand seems to inspire humans to poetry. Here is the reaction to the Ryoanji garden that Harold Steward recorded in *Old Walls of Kyoto:*

> "Indomitably old, all insist
>
> On being, not extraordinary or rare,
>
> but merely common stones
>
> Which must exist:
>
> too simple for the mind to comprehend."

Too simple or not, my pattern-making intelligence tries to comprehend!

Background

Zen gardens in Kyoto originally were the province of aristocrats. Powerful clans controlled the land, commanded the wealth and patronized the monks. The Buddhist faith of the early Japanese Daimyos sparked the vision to create a religious oasis for the spirit. They found artisans in metal, stone, water, maple and bamboo, who dedicated years of their lives to a single garden, sometimes passing completion of the project on to the next generation. Many of these landscaped masterpieces were old centuries before Columbus laid eyes on North America.

New Again

Until Lunaflora's Kyoto Gardens CD-ROM, if you couldn't travel to Kyoto, a trip far beyond the means of most of us, the splendors of Japan's ancient

Figure 3. Garden screen

capital gardens were available only as armchair day-dreams or other people's travelogues. The best one could do was spend big yen for a large coffee table book and gaze at gardens frozen in exquisite, but static photographs. As much as you wanted to enter the gate of the garden and hear the sound of the bells, the pleasure of viewing was limited to the eye and the imagination. You had to supply in your mind the sharp "tok-tok" of the "han," the wooden signal board that opens the CD, and its haiku by Buson.

Having so many gardens together at once is unprecedented. In fact, securing permission these days to visit the gardens at all is increasingly difficult, and achingly expensive. Moreover, with luck, you might get to see half a dozen gardens on any one trip to Japan.

With a ticket assured for the CD-ROM tour, you can choose from two dozen gardens and virtually experience their space as never before. Pick a garden and a handbell sounds a clear note as you enter. LunaFlora and Digital Wallpaper add music, haiku, and a narrated tour of movement through the landscape. A directional arrow shows the viewpoint of each new location on an overhead bird's-eye map of the entire garden. Or you can view miniature frames of the gardens on a television set in the home room. You get as well, 150 color photos of garden scenes as souvenirs. You can ask for the photos one by one in slide show mode. Prepare for a rich treat for the eyes.

Add Light

The Kyoto Gardens CD illustrates the homily that a picture is worth a thousand words. Leave the gardens; mount the 150 dazzling photos into the slide show mode. The experience can leave you grasping for suitable adjectives, and several thousand words in debt. Perhaps no surrogate can replace the experience of actually being there, yet Lunaflora's multimedia tour of Kyoto's gardens creates a digital contemplative sanctuary; a virtual world. It sets a standard for computerized travel at its finest and most serene.

Add Sound

As you stroll you can command music to play. Pleasant sounds fill space; a Text window opens, Patriarch Bodhidharma looks on benignly as a text or a haiku poem narrates the history of each garden. The music is creative, varied, and enhances the experience. Last week as I played the CD in the BMUG office, I selected one of the temple tours, accompanied by its musical accompaniment, a *koto* lute and *shakuhachi* flute. When it finished, voices drifted over the workspace dividers to the left and right, "Hey, is there more of that? Can you play that again?"

Add Words

There is an electronic book of essays that discuss four aspects of the phenomenon of Kyoto Gardens. Scholars present their research on the historical, cultural, and architectural elements of the gardens. Tom Wright, an American Buddhist disciple of the Soto School's Elder Master Uchiyama Kosho Roshi, talks about the spirit of Zen. He sets a refreshing tone of humility by admitting that after 25 years of meditation practice, he is still a student, and expects to continue learning Buddhism his entire life. Urs App describes the History of Zen, and introduces the Ten Ox-herding Pictures, a popular artistic summary of the path to enlightenment. The Ox-herding pictures are not related to the gardens, but carry an essential message typical of the Zen school. Marc Keane discusses the design principles, elements, and techniques found in the gardens, and Preston Houser introduces the most famous masters of Tea Ceremony. There is an extensive reading list for those who want more information; scholarly and popular titles are included. The CD-ROM's articles, like the photos, give a feel and a flavor of the religious and artistic motivations behind the gardener's arrangement of pines and pools, rocks, and roofs.

Developing Awareness #2

You know a technological innovation is significant when without it, the old mode seems lacking. After the Kyoto Gardens VR experience, I simply wasn't satisfied with the inflexible and static boundaries of graphics on the monitor. You know a new medium is vital when it sparks an organic awareness in response to the computer's input. Until I hit the music button and listened to the sounds that accompany the garden tours, I didn't realize that spontaneously, I had always played music in my head while I toured Kyoto's gardens in 1969. The CD-ROM recreated the experience and showed me an old-but-unconscious dimension of organic reality.

Showcase for Significant Spaces

The QuickTime VR mode could take us virtually into other significant spaces and document the situation as never before. The implications could revolutionize history, journalism, and communication. Seeing is believing. Seeing in 360 degrees impresses the image in a new way. For instance, the Kyoto Gardens CD celebrates the sublime vision and craftsmanship of Japanese Zen Gardens. It elevates our appreciation of their outstanding architectural contribution. After this CD project, Japan's garden treasures may gain a new international stature among the earth's finest natural and man-made sacred spaces.

As you stroll you can command music to play. Pleasant sounds fill space; a text-window opens, Patriarch Bodhidharma looks on benignly as a text or a haiku poem narrates the history of each garden. The music is creative, varied, and enhances the experience.

Where else could we go? Certainly the Kyoto Garden's landscapes are no less compelling and suggestive than the breath-taking mountain tops of the Himalayas; maybe we could try QuickTime VR in the Annapurna or K2 ranges? Could we visit the clerestory windows of French cathedrals, L'Eglise Saint Chappelle, or the poems in stone inside the Cathedral de Notre Dame? Could we follow a moving sports car along California's Highway One, from the switchbacks and arroyos of the wild Big Sur coastline up to the cathedrals of the redwoods? To the Headwaters Grove to watch the last pristine redwoods fall to the bulldozers?

Décor and Fetch

After one look at Décor, a desktop picture "wallpaper" utility, you will want it to put a Zen garden photo on your Desktop. The landscape will command your attention, to say the least, and your colleagues'. With Kinkakuji's lotus pond gracing the display, your Mac will catch passing eyes. You may find yourself staring at your Desktop to rest your mind and your spirit.

You can also set Décor to slide show mode, to display a folder of landscape photos. Preference controls allow you to tailor the pictures to your monitor's size. A special version of Aldus Fetch, the graphics search engine, is included to allow easier access to the "photo gallery" collection.

Ideas and Gripes

There are a number of disturbing typos throughout the captions and texts; probably any English language CD prepared overseas will have difficulty avoiding spelling errors.

The opening home page is clever but too cryptic for my taste. To enter the garden and work the CD you have to click on every object in the room. A TV remote control, the screen of the TV, a book, a book shelf, and a wastebasket all yield secrets. You are supposed to explore and discover the purpose of each object. A Buddhist monk in his alms-rounds hat appears as the cursor while you wait for a command to execute. A word of explanation would be less (pseudo) "Zen," but much more helpful. Buddhism does have a mystical side, but its instructions are rarely unclear. A cultivator must spend years of effort to discipline a still mind and pure karma in order to gain the fruits of the Tao, the Way. But a multimedia CD is hardly the same thing. There is a Help Screen, but a clue telling one where to begin would be appreciated.

You need a fair amount of RAM to open the big graphics in Décor. Trying to place a 380K photo of bamboo crashed my PowerBook (with 12 megs of RAM and RamDoubler). Sometimes with Décor enabled the Desktop froze up on a restart.

A major gripe: Apple's Digital Wallpaper imprints their corporate logo in my mind with a noxious honky-tonk theme tune at the start. A poor introduction, folks. No Zen garden worth its sand offers amusement park organ music at the gate. The roller coaster at the Coney Island Boardwalk, maybe, or the Santa Cruz Ferris Wheel are at the opposite end of the feeling range from Kyoto Gardens. Perhaps it's a test, to subject us to the worst of ear assaults, to increase the experience of blessed relief after stepping into the cool reflective hush of the gardens.

Developing Awareness #3

I experienced as a hallmark of Buddhist Gardens a certain ineffable sense that comes up as well in the Gardens CD. Perhaps someone may investigate it more deeply. On my tour of Kokodera thirty years ago, the felicitous serendipity of crimson leaves on emerald moss broke through my self-centered loneliness to reveal a wider world outside my tiny state. In the Kyoto Gardens CD one gets a sense of a garden's power to open your eyes. The garden architect's samadhi-concentration presents to you the essence of all rock, as if for the first time. The isolation of the elements: water, stone, bamboo, pine, and then their combinations provide a brand-new, "almost first-time" encounter with the spirit of nature. Like green tea cleanses the palate and awakens the tongue to other flavors, master gardeners wash clean your vision of the familiar, to awaken the mind to color and form. Master Zen gardeners open a door to the sacred, and show you the holiness and transcendence of ordinary, everyday objects in the natural world.

Apple's Digital Wallpaper imprints their corporate logo in my mind with a noxious honky-tonk theme tune at the start. A poor introduction, folks. No Zen garden worth its sand offers amusement park organ music at the gate.

"Buddha Dharma is here in the world; don't leave the world in search of Dharma."

—Master Hui Neng, the Sixth Patriarch

Kyoto Gardens CD-ROM
Minimum System Requirements:
PowerPC processor
System 7.5 or greater
CD-ROM reader
8 megs of RAM
5-meg hard-drive
QuickTime 2.1 or greater
Turn off virtual memory
Set monitor to 32,000 colors

SRP $69.95 plus $5.50 shipping (UPS Ground)
Nisus Software Inc.
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Email: sales@nisus-soft.com
Web site: www.nisus-soft.com

C.R. Clowery thinks warring tribes and combating nations should sit together for tea in a Kyoto Zen garden. If they can do it virtually on a Macintosh computer, send the peace prize to LunaFlora, Nisus Software and Apple Computer.

Radar Training on your Mac

What Do All Those Blips on the Screen Mean?

by Charles Baker

We all know about radar. It shows you what is going on around you, right? Do terms like *target* and *CPA* just pop into mind when you think about radar? Never mind. The prime question is, why would you be interested?

1. Are you now or do you hope to be a marine radar user?
2. Are you just interested in general?

If the answer to either question is yes, you might wish to use this course, read on.

Marine radar has come a long way. It used to be that it was only practical on commercial ships and mega yachts—generally on big, power-hungry units. Then came raster scan and the screen kept the images instead of a beacon sweeping around. LCD displays followed (low power consumption), so now radar is practical for most boats.

With the new advances, radar has found many uses. To name a few:

- Navigation radar can be helpful in finding land or showing position from objects. Think of trying to find the entrance to a harbor during a dark night.
- For anchor watch, you set the radar to turn on at specified intervals and set a degree of variance (like 30 minutes and 20 feet). When the radar turns on and finds you have moved too much it gives a warning. Slick—and no more tiring anchor watches for the crew.
- The place where radar is most valuable is collision avoidance. Just think of being fog bound or in shipping lanes with poor visibility.

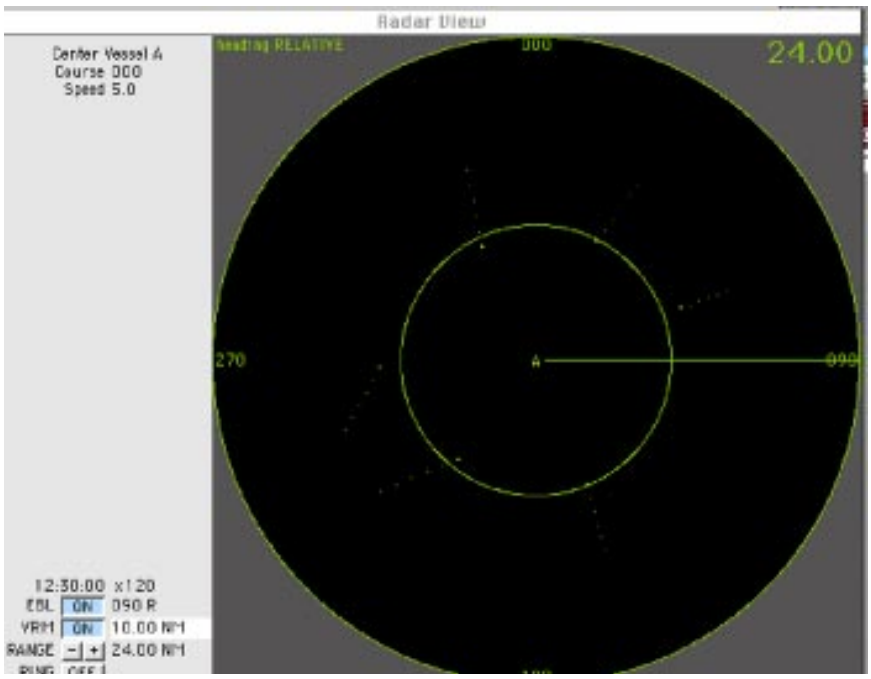
A case in point. One night, after a long day at sea, we were heading into the harbor. There were shore lights everywhere with car lights moving in the background. We were keeping a careful watch for traffic but it was hard to distinguish running lights from all the other lights. We thought we saw a boat moving in front of us so we changed course to go astern.

The crewman watching the radar finally noticed that there were two targets that kept the same distance from each other. As we looked at the image on the monitor we noticed that one was the boat that we had maneuvered to avoid. The other target was following at a fixed distance. But we could not see it. We stopped to figure out what was happening and finally saw a big barge with running lights so dim we could hardly make them out. If we had not stopped we would have gone between a tug and its towed barge. We surely would have ripped out our bottom on the steel towing cable. And then we would probably have been hit by the barge as we lay sinking.

The key is understanding the information shown on the monitor. This can be confusing and frustrating. Radar is a tool. Like all tools one needs practice to be effective, but when you get down to the boat, most people would rather go sailing than practice on the radar. In general we use radar only when we have to—learning under duress. Now we can study in the comfort of our home.

Enter Starpath® home study courses, specifically, Starpath Radar Trainer™.

The Radar Trainer course is designed to teach marine radar users how to interpret the moving targets on their radar screens.



The Radar Trainer course is designed to teach marine radar users how to interpret the moving targets on their radar screens.

And what a great course it is. It is basically a radar simulator that turns your monitor into a radar screen (see Figure 1). But don't be fooled, this is an in-depth course. It guides you through simple demonstrations and problems to sophisticated techniques. Therein lies one of the joys, you can progress at your own speed to whatever skill level you desire. You can actually have fun while you learn. It includes navigation games for one or more players.

Some of the Training Features are:

- Call up closest-point-of-approach (CPA) data for any target.
- View interactive demo targets to learn target identification.
- Practice with the built-in training drills with random targets, new on every run.
- Use the built-in calculator to find CPA from ranges and bearings.
- Or set your own target traffic to drive through.
- Use the true view option to study relative motion.
- Control course and speed of all vessels.
- Vary elapsed time rate at any time.

The manual is clear, direct, and comprehensive, covering over 70 topics, with explanations, descriptions, examples, exercises, and theory.

This course was developed by David Burch. He was a Fullbright Scholar, has a PhD in Physics and is the founder of the Starpath School of Navigation. His extensive background in education is evident throughout the course.

The software can be run on a Mac Plus or newer using System 6.0.5 or newer. Radar Trainer can run from a floppy or from your hard drive—it takes about 300k of hard disk space.

Starpath Radar Trainer is in use by NOAA, Navy, USCG, Harbor patrols, shipping agencies and numerous nautical schools around the world. The course sells for $89. If you mention that you are a BMUG member they will give you a 15% discount. You can check the Web page for info on excellent courses, books, etc.

Starpath Radar Trainer
Minimum System Requirements:
Mac Plus or better
System 6.0.5 or higher
Floppy drive, or 300K of hard disk space
Price: $89.00

Starpath School of Navigation
331 Fulton St.
Seattle, WA 98109-1740
Phone: (800) 955-8328 or (206) 284-8328
Fax: (206) 283-5074
Web site: www.starpath.com

Fundamental Astronomy: From Observation to Understanding

Stars, Canadian Style

by Joseph Coleman

Fundamental Astronomy is a basic primer to the science of astronomy, prepared by Mount Allison University. It is a very good introduction for a beginner who doesn't need to be hand-held all the way.

The case says it will run from any 68000-configured Mac with 4 megs of RAM, but I think the 68030 is a more realistic minimum. The program is driven by HyperCard technology, and the design is very inviting. From the opening screen (Figure 1), the layout is intuitive, the material is clearly written, and the graphic presentation is subdued and does not draw focus away from the information the CD provides. Installation of the CD and the utilities required to run the program follows the basic Macintosh interface, making it simple and intuitive.

I can see this as part of a CD library for young people entering the first bloom of a lifelong affair with science, and an equally good reference for the devotee of life-long learning when a substantial foundation in astronomy is the next selection on the self-education menu.

Some of the illustrations are surprisingly good—8-bit images called to overlay simple bitmap images on the cards. QuickTime movies enliven the learning with sharp images and relatively clean sound. Jumps and transitions are smooth and the arrangement of the overall presentation is very well thought out and executed, though I really wanted to see more.

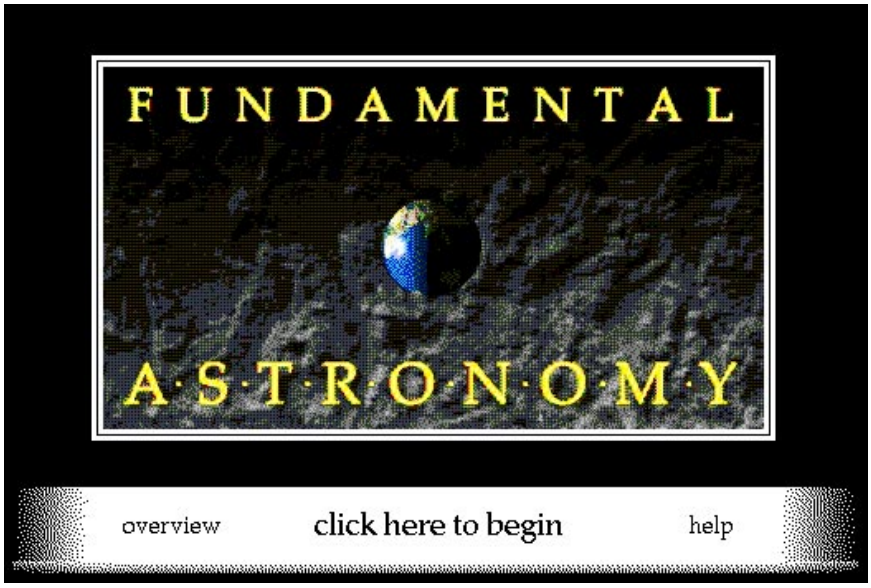


Figure 1.

Do our instructional programs at least hint that Copernicus and Galileo might not be from Des Moines, or that Einstein was a German Jew long before he was an American, and the astronomers on whom we base the science were Arabic, Hindu, and Chinese?

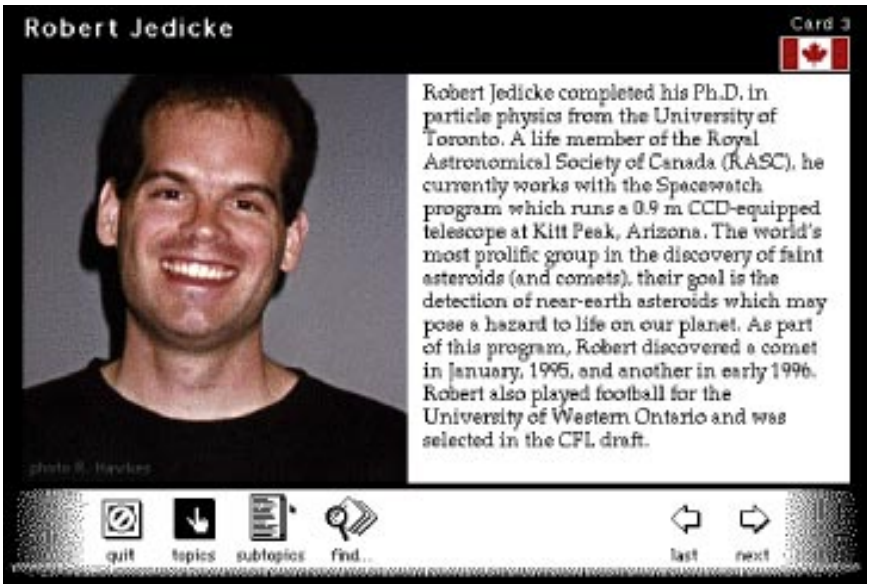


Figure 2.

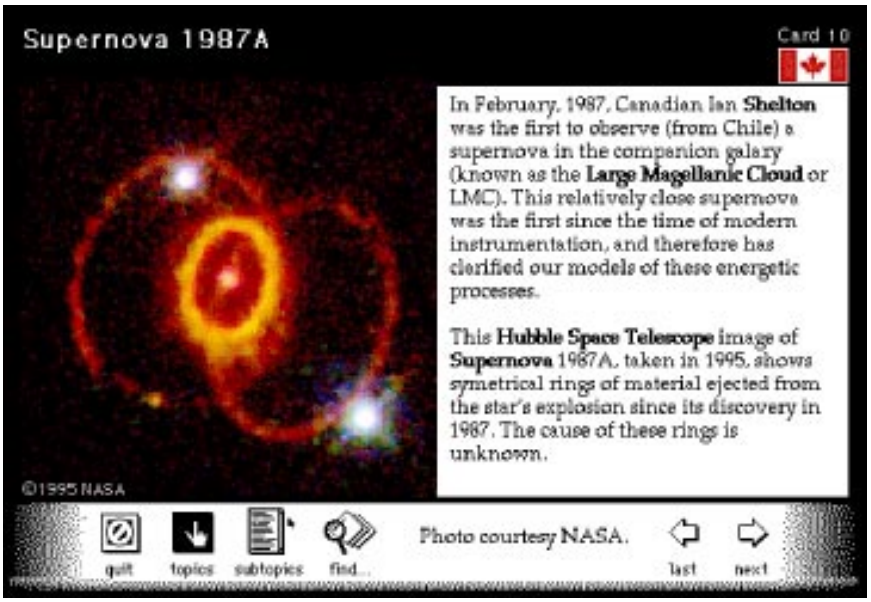


Figure 3.

Figure 4.

Is That What We Look Like?

Fundamental Astronomy succeeds as a basic text. But, for me, the most striking thing about is the intense "Canadicentric" presentation. There is a very fierce sense of Canadian scientific contributions to the field (Figures 2, 3, and 4). The continual focus on the Canadian side of the science makes me wonder how the educational programs produced in this country fare around the world. Does the non-USA audience have to endure the same kind of flag waving in their scientific instruction? Do our instructional programs at least hint that Copernicus and Galileo might not be from Des Moines, or that Einstein was a German Jew long before he was an American, and the astronomers on whom we base the science were Arabic, Hindu, and Chinese?

I hope we do the job of providing an overview of the science with a little more objectivity than does *Fundamental Astronomy*, but I'm afraid we don't. *Fundamental Astronomy* seems to be a mirror that makes me squirm a bit when it reminds me of our own nationalistic rants.

Conclusion

On a scale of one to ten, I'd give this an eight. I try to avoid giving anything a ten because it smacks of arrogance—as though everything that could be done to present a worthwhile introduction had been done and there was nowhere else to go. A rating of nine is also rare for me. I'd rather see something more exciting from a CD-ROM—three dimensional color, rather than flat bitmap images. But for what it is, *Fundamental Astronomy* is very, very good, losing just a few points for the knee-jerk flag waving and the low-tech design.

Joseph Steven Coleman is a writer, director, and designer who lives in the Bay Area with far too many books. He has been a member of BMUG since 1989. There will be a brief pause while you say, "So what?"

Fundamental Astronomy
Minimum System Requirements:
Mac or PowerMac running 7.0 or better
Memory: 4-8 megs of RAM
256-color monitor

Mount Allison University
Sackville NB E0A 3C0
Canada
astrocdhelp@mta.ca
http://aci.mta.ca/Fundamental/

Not For "The Rest of Us"

Encyclopedia Britannica CD 2.0

by Scott Beamer

Already possessing immense name recognition for… the best textual encyclopedia in the English language, they have chosen to make that available electronically with minimal redesign [with] no inclination to go mod. Perhaps it has always been part of the style of the Encyclopedia Britannica to be stuffy, patrician, and old-fashioned.

I jumped at the chance to review the Encyclopedia Britannica CD 2.0. I grew up on Encyclopedia Britannica and World Book at home. My kids have gotten good mileage out of Microsoft Encarta. If Encarta cost $75, what would a $300 (the price has been reduced from $495) CD-ROM encyclopedia be like?

The disappointment started when I opened the box. The all black box says nothing but "Britannica CD 2.0" on the outside. Inside, I was first confronted with a couple of loose-leaf sheets. One was a very fine print license agreement, the other a warning to be sure and use the correct dongle for your platform.

My heart sank. I've managed to avoid dongles up until now, self-righteously railing against copy protection at every opportunity. I didn't think CDs needed it, but come to think of it, a new hard disk could hold the contents of a CD with room left over. The only other things in the box were the CD, the dongle, a lean, Windows-centric manual (the CD is for both platforms), and a ten minute, forgettable video.

Hardware and system requirements are not severe: 8 megs RAM (16 recommended), System 7 required (7.5 recommended), 16 megs on a hard disk, and Apple CD-ROM extension 5.0.1 or later. Installation went smoothly.

The biggest disappointment was starting the program. Perhaps I've had too much eye candy from DK Publishing of late, but I winced when double-clicking the Britannica icon brought up Netscape Navigator 1.0.1 with a primitive home page for Britannica. I was certainly anticipating more for $300.

The Britannica folk have chosen a very different route. Already possessing immense name recognition for what is generally acknowledged as the best textual encyclopedia in the English language, they have chosen to make that available electronically with minimal redesign. They have shown no inclination to go mod. Perhaps it has always been part of the style of the Encyclopedia Britannica to be stuffy, patrician, and old-fashioned.

While you can go online with this version of Navigator, almost certainly you would prefer to use a newer version. However, you are stuck with this version as the only way to access the material on the Britannica CD, as it is in Navigator that the dongle software protection resides.

Asking the Britannica folk why they would choose such an unlikely interface for their CD, they pointed out that the online version came first, and they wanted to keep the CD interface as similar as possible.

I expect that the entire textual contents of the 32 volume encyclopedia ($995 plus $59 shipping and handling) is on the disk. That amounts to about 65,000 articles, forty million words or so. The only significant advantage in having this material available in electronic form is the ability to do searches. The Netscape interface and the search engine provide adequate, but not impressive, searching and links.

You can add Netscape Bookmarks to articles on the CD. This enables you to have easy access to articles you have already visited. It is also possible to copy and paste from Britannica CD into other Mac software and to print pages and graphics directly. Pages printed from Netscape, though, include extraneous elements you may prefer not to print.

Figure 1. The Britannica CD 2.0 home page. It is based on Navigator 1.0. You paid $300 for this?

Graphic Desert

Even this minimal conversion of the encyclopedia to electronic form has been made at some cost. While Encyclopedia Britannica has never been known for gaudy or bountiful graphics, the electronic version is essentially a graphic desert. I perused more than fifty articles without finding a single illustration. I did find reference to figures that were not present or linked.

There is a slide show feature which switches randomly between the graphics of the encyclopedia every ten seconds (the time lapse is adjustable). By backtracking to the articles listed for these illustrations, I found articles with illustrations.

Britannica illustrations tend to be as dry as the text. They seem predominantly illustrations of mathematical and engineering concepts with some tables and charts. None are animated. There are few photos, nothing flashy.

In discussing this graphic desert with a person at Britannica, I was given a partial explanation. For many of the illustrations, Britannica only owns the print rights. To reproduce them electronically, they have been forced to renegotiate deals with many sources. So far, they have been able to include on the CD about 3,000 of the 7,000 illustrations in the paper version. The new electronic version, due out by the time you read this, will take that number up to about 5,000 (It will also include a newer version of Netscape Navigator, but few other changes).

The Extras

The Britannica CD Home Page includes a modest collection of uninspired buttons, accessing modest extras (See Figure 1). One is for the Propaedia (a hot linked outline to the contents of the encyclopedia), another for Miriam Webster's Collegiate Dictionary, and a third opens Nations of the World, an electronic atlas. A fourth is to open a randomly selected article. A fifth begins a slide show of the illustrations from the encyclopedia. There are also buttons for Help and How To Search.

The Propaedia seems a nice idea, but I found it awkward to use. It is a tree structured outline of the contents of the encyclopedia. It begins with ten subjects of such a general nature as: Art, Technology, Religion, The Earth, or Branches of Knowledge. Clicking on any offers a half dozen or so other choices. One must work their way down through several levels of the outline before the links go to actual articles.

The Webster's Collegiate Dictionary is too lightweight for the sort of person who will be using this encyclopedia. Its contents can be accessed through the same search entry box as the encyclopedia. There is a pop up list that allows the search to be directed to the encyclopedia, the dictionary, or the index. My first try with the dictionary was a simple term I copied from the text of an article, "The Levant." The dictionary found no matches. My electronic American Heritage Dictionary had the proper definition.

The Nations of the World is also a throw away extra. For each country, there is a map, a full screen color flag, then one or more screens of national statistics. I do not see this as adding value to the Britannica CD. The CIA World Fact Book is available free from many sources and has more statistical information. The articles in the encyclopedia are also a richer source of information on the nations of the world.

Don't Judge a Book By Its Cover

I confess, I sometimes do judge books by their covers. I have a 1915 Encyclopedia Britannica in my living room, mostly because I love the elegant black leather binding and the reputation of the encyclopedia (and the 225 year old company behind it). Of course, it is also fun to look up Abyssinia and read about it from what was the contemporary point of view.

As I began to get my sea legs with the Britannica CD, I started to get engrossed in the material. The quality is there, only modified for computer use by the addition of indexing and links. In addition to the hot links and the search engine, you can toggle on and off marks for every indexed word in an article. These will take you to the index. From there, you can choose to go to other articles. At the bottom of many articles are links to other related topics.

The true value of Britannica CD is the same as the 32 volume version, the high quality scholarship behind the articles. This text, however, appears very severe on a computer screen, and that is not a particularly comfortable place to read it. Young readers will certainly go first to other sources, such as illustrated encyclopedias.

But then, I remember as I grew up, we had three encyclopedias in the house. We kids always went to the World Book

first because we preferred the simpler vocabulary and much more frequent illustrations. The Britannica was always our last choice because it was too hard to read. We used it mostly to fatten the bibliographies of our school papers. The text in the Encyclopedia Britannica hasn't changed much over the years. Young readers will still find it a challenge.

Searching goes well. It can be done using either plain English or Boolean input. The plain English mode automatically removes common connector words such as "the" "and," or "with." That means you must be aware of what words it will include in the search. The Boolean operators include one I am not accustomed to. "ADJ" must be put between adjoining words to prevent the search from including all articles with both words any place within.

Another surprise is that the Help file and manual warn you that the encyclopedia always uses the British spelling variant of many common words. This may affect search results. The Help file includes a list of these variants. There is also a lengthy list of abbreviations used in the encyclopedia. It would seem both of these lists need more prominent display.

Search speed is largely determined by the speed of your CD-ROM drive. While not instantaneous, it is reasonable. On my Power Mac 7200/75, most searches took about twenty seconds to display the results. The results are displayed as a list of titles with the first paragraph of each and the article size in bytes (See Figure 2). You can control the number of hits to display at a time. Ten is the default. The hits are listed in the expected order of relevance.

Online or CD?

Britannica has been available online to educational institutions for a while. It has recently been made available to individual subscribers, at $14.95 a month (or $150 a year, plus $25 registration fee). While there are a variety of features on their web site (including a one week free trial at http://www.eb.com), the focus is clearly the Encyclopedia Britannica. I also enjoyed the yearbooks for the quality of their in-depth summary on many subjects.

Surprisingly, the online search was actually faster than from the CD. This was in spite of my clunky 14.4K baud modem. For the individual, $150 a year will add up. The CD is a better value. However, the other question is whether you need either. Your local school or library is likely to have some form of Encyclopedia Britannica. Many universities and some prep schools give their students free access to Britannica online. These sources may be adequate access for most.

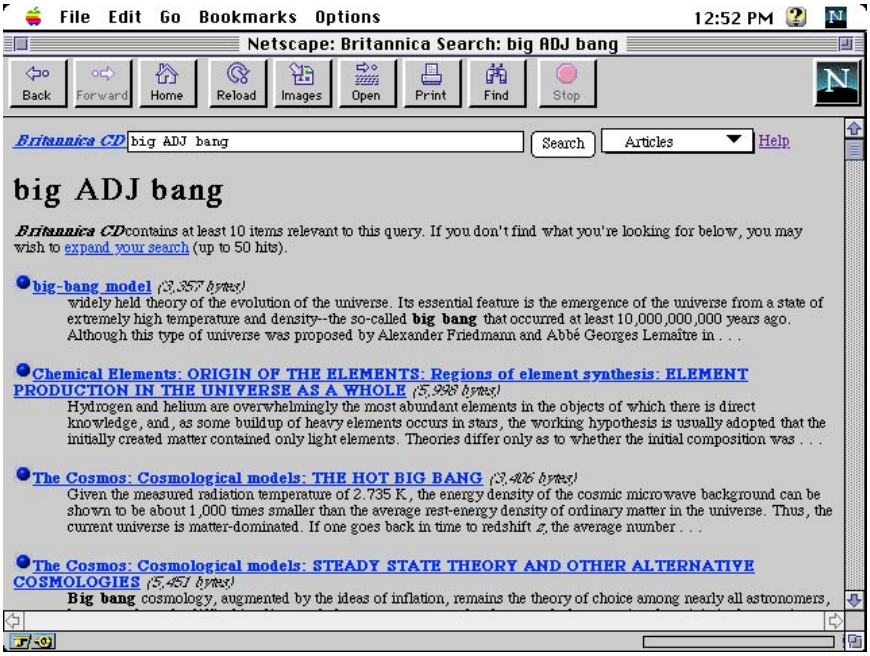


Figure 2. Britannica searches display the title of the article, the opening paragraph, and the size in bytes.

The Britannica CD contains the same vast array of in-depth articles from world class scholars that it always has. What has changed is what youth—and to a considerable degree, adults—are comfortable with. This is an age of non-stop bombardment of our senses by the media, ten second talking heads on the news, and point-and-click to go around the world on the net. I suspect there is an ever decreasing percentage of us who have the desire and determination to deal with the in-depth textual material of the Encyclopedia Britannica, even when it is available to us from among the CDs next to our computer or from a web page.

The promotional material from Britannica I have seen recently still shows the well dressed nuclear family, smiling and browsing the Encyclopedia. This seems at such odds with the reality of today's world of single parent families, eating dinner alone standing in front of the refrigerator, and twenty hours a week online.

I wonder how many of today's harried people have the desire and determination to make good use of this CD. I have to wonder if most families would not find their money better spent if they bought an illustrated CD encyclopedia, such as Encarta, and half a dozen edutainment CDs from DK Multimedia Publishing. I'm certain the kids would be more entertained, but I suspect they would also learn more.

Don't misunderstand, for the right person, the Britannica CD is an excellent resource. There are three key considerations. First, do you use the Encyclopedia Britannica often? You don't have to spend $300 to discover if you will. Second, the text is identical to the 32 volume set and the online edition. Other than search ability, there are no computer enhancements in the CD edition. The graphics are actually weaker. Third, at a price of $300, is the convenience of having one's own CD worth it, rather than going to the library?

Britannica CD 2.0
List Price $299

Encyclopedia Britannica, Inc.
310 S. Michigan Avenue
Chicago, IL 60604
(312) 347-7000
http://www.eb.com

Postcard Madness:

A Review of StarCore's Travelrama USA

by Lisa Taplin

As a lover of kitsch and cross-country driving, I was happy to see that StarCore had incorporated both into their new "fun-for-the-entire-family" CD-ROM game, Travelrama.

Geography was always my worst subject in school, but as I have grown older and driven across the country seven or eight times, I now know where to locate the Black Hills or Presque Isle on a map. But the things that interest me most, which you can't get in a geography class, is the Americana of this country: the cheesy teepee motels, South Dakota's Corn Palace, and even the odd natural places like Arches National Park or Black Canyon of the Gunnison. Finding my way to these places has undoubtedly instilled in me a sense of wonder (and geography) for my country and culture, which is what StarCore aims to do with this game: learn geography while searching out and collecting a series of silly and/or historical postcards.

At first, I liked the upbeat fiddling music which accompanies the opening credits and other screens of this game, but after a while it became a bit grating, so I chose my option, Start Game, quickly and moved on. For beginning users, you have the option of a tour of the game, narrated by a "down-home" guy who I kept expecting to say, "Ya'll come back now, ya hear?" You also have the option to view all of the postcards contained in the game—an album of sorts, where you can view a variety of American schlock, historical monuments and geographical wonders, as well as read information about each location or monument.

The game starts out with the essentials: choose your name, choose your car. There are two levels of difficulty: the Learner's Permit (for hints on a postcard's location), and the Driver's License (no hints). I obtained my Driver's License and decided to go through my cross-country adventure as Blinky and picked a bright shiny motorcycle as my ride.

[T]he things that interest me most, which you can't get in a geography class, is the Americana of this country: the cheesy teepee motels, South Dakota's Corn Palace, and even the odd natural places like Arches National Park or Black Canyon of the Gunnison.

The game then presents you with a list of postcards you must collect: Americana such as South of the Border or Santa Cruz Beach Boardwalk; Historical Points of Interest such as Washington's Monument or Ghost Town Church; and natural landmarks like Garden of the Gods or Oregon Dunes State Park. The gist of the game is to travel around the country collecting these postcards, then returning to your city of origin to win. Of course, you have some constraints. You have a limited amount of gas/miles you can travel, but there are opportunities to instantly jet to a faraway city (or to an out-of-the-way town, if you answer incorrectly). You also have to beat the other guy or gal, if you are playing with multiple characters.

You can choose your starting point on a map of the US (ideally close to one of the locations where you think you can find one or several postcards). At each city, the "down-home" narrator tells you some information about your location, over some music associated with that region. You are presented with an album of postcards promoting various landmarks within that city or area. If one of those postcards is on your list of cards to collect, take it and move on to your next city. Keep in mind, though, that you have a limited amount of miles you can use to travel on the road, as well as a limited amount of airlines tickets to hop from city to city. In a two-player game, you can "Spin for Miles," but when traveling solo, you have to make do with the mileage given to you.

The game incorporates a variety of surprises while on the road, including rest stops to help or hinder you and heated two-player competitions (nabbing the other player's postcards and strategic postcard trading). The most important thing to remember is where you started out: in my two-player game, I was ahead, but forgot where my city of origin was and lost, to my opponent's joy.

As a 27-year-old adult, I am not *exactly* StarCore's target audience, but the

I would have loved this game as a kid as it contains a great sense of non-competitive adventure as well as cool photos and downright weird places.

game appeals to my sense of nostalgia and love of maps. I would have loved this game as a kid as it contains a great sense of non-competitive adventure as well as cool photos and downright weird places. StarCore has developed an entertaining game that resparked my love of road tripping!

StarCore
(Apple Computers Discovery Studio)
PO Box 876
Brea, CA 92622
Phone: (800) 708-STAR

Lisa Taplin is the Marketing Director and Graphic Designer for an Oregon real estate company. She is also the Publicist and Reading Coordinator for a Eugene, OR bookstore. She can be reached at ltaplin@ccnet.com

Origami, the Secret Life of Paper

by Scott Beamer

Casady & Greene's new CD-ROM, *Origami, the Secret Life of Paper*, is radically different from their previous product line, and it is an unusual work among the CDs available for Macintosh. Few Mac users have not heard of origami, so the title of the CD should be self sorting.

In this age of overheated movies, television, and computer games full of nonstop action, bigger-than-life explosions and overwhelming sound, many will have no interest in this CD, as they rightly suspect—in this one, there is no place to pull the trigger. Those attracted to origami will find the mood of this CD contemplative, even delicate. In the opening screen (see Figure 1), one finds oneself at the open doorway of a traditional Japanese house, with flute music playing in the background.

In the entry hall (don't forget to take off your shoes), are shelves displaying twelve models of classic origami. Clicking on any of them will open a screen with a closer view and brief text on how to proceed to make this model. However, most important to the CD is a handful of QuickTime videos whose icons are displayed sequentially along the bottom of the screen.

These play a video showing a pair of hands making every fold to complete the work in question. If you have never had much luck with origami, the situation may change. Within five minutes of starting the CD, my 11-year-old son was following along with the videos as he folded a miniature samurai helmet (The CD comes with a package of origami paper). He got it right the first time, then proceeded to cut a spare poster into a large square and followed the videos again to produce a samurai helmet he could wear.

By pointing and clicking, one can wander through the six rooms of the house and its interior garden (there is also a navigator if you get confused). Rather than learning about traditional Japanese family life, one finds oneself in an art gallery dedicated to the folk art of origami. On the walls are pictures of more than one hundred works by over thirty artists. Clicking on any work brings up a picture of the artist (Figure 2), a personal sketch, and a handful of examples of their work.

The library is the room where one accesses most of the information on the CD. Here, one can see on one wall, a map of the world with pins representing the homes of all the artists on the CD. Clicking on a pin brings up their personal profile. The opposite wall is a chalkboard. Clicking on it brings up a large amount of text—about a chapter's worth—on origami and mathematics. This is a long and scholarly section with several illustrations.

Figure 1. The opening screen displays a dozen origami models. QuickTime movies show you how to make them.

Clicking on the bookshelf brings up an extensive bibliography on origami. Clicking on an hourglass brings up an illustrated chapter on the history of origami. In the kitchen, clicking on a picture on the wall brings up an illustrated chapter on traditional Japanese paper

making. Clicking on the blender brings up an illustrated chapter on how to make handmade paper from junk mail with a blender.

Reading through these chapters makes it obvious that this CD is much like a very thorough book on origami, the Japanese house metaphor notwithstanding. In fact, the only feature on the CD that would not fit comfortably in a book is the QuickTime videos of the actual folding of the twelve models. These are important, especially for anyone who has tried to fold origami from a book and not done well at following the instructions.

Actually, there is one other feature unique to the CD. Choosing New from the File menu opens a list of the twelve models in order of difficulty. Choosing one brings up a screen showing a piece of paper marked with the folds for that model. There is also a color palette allowing one to tint the paper. Even better, there are fifteen patterns of Japanese paper one can use on the paper; one can then print it out on a color printer. The results are impressive.

Though this product was obviously produced by Westerners, there is a sense of space that I find associated with ancient Japan, taking pleasure in small things. This begins when one opens the box and finds inside only a CD, a Quick Reference card, and a slim pack of paper.

It continues when one discovers that no installation is necessary. This assumes you have adequate resources in your System Folder. In case you don't, on the CD are Apple's Text to Speech and QuickTime 2.5 (2.1 or newer required). System Requirements are also minimal. Besides a CD-ROM drive, one only needs System 7.0 or newer, an LC III or newer, and 8 megs of RAM. Take a moment to see the About box, one of the more interesting I have seen in a long time.

[C]licking on a picture on the wall brings up an illustrated chapter on traditional Japanese paper making. Clicking on the blender brings up an illustrated chapter on how to make handmade paper from junk mail with a blender.

To start the program, one has only to click on the program icon in the CD window. The small Quick Reference card is quite adequate. This is an extremely straightforward program. While one is tempted to wish for QuickTime 3-D and virtual reality, perhaps it isn't necessary. One merely moves the cursor to the edge of the screen and clicks to go on. This leisurely pace seems more appropriate here.

Figure 2. The walls of the traditional Japanese house are lined with photos of origami from the masters. Some are truly amazing. There are profiles of the artists as well. This one is master Akira Yoshizawa.

The only significant criticism I have is that the Text-to-Speech is awful (you can turn it off). Perhaps I don't have the right software in my System Folder, but I prefer to read text, not have it spoken to me in a poor computer simulation of the human voice. Oh, and while I'm nitpicking, I couldn't copy and paste text or pictures from the program to my word processor. It makes it difficult for kids doing reports (and wordsmiths doing articles).

Conclusion

This CD is attractive in a quiet way, but possibly more on origami than many of us want to know. To justify the list price, one either needs to buy the CD because they have a significant interest in origami or to find that interest using the CD.

Origami, the Secret Life of Paper
List Price $59.95
Casady & Greene, Inc.
22734 Portola Drive
Salinas, CA 93908
Phone: (408) 484-9228
Fax: (408) 484-9218
Web Site: http://www.casadyg.com
Email: sales@casadyg.com
AOL: casadygree
CIS: 71333,616

System Requirements:
Computer: LC III or newer
OS: System 7.0 or newer
Memory: 8 megs of RAM
Other: CD-ROM drive

The Way Things Work 2.0

Info Lite Edutainment

by Scott Beamer

The Way Things Work 2.0, just out from DK Multimedia Publishing, is a sure best-seller. After all, the first CD of this title was, as was the book. This is a lightly reworked new version with only slightly more machines covered. The new volume adds DK Multimedia's latest favorite tricks, and more of David Macaulay. He pops up like a TV personality throughout the CD. In fact, if you don't touch the mouse for a few minutes, he will pop up and scold you for not being "interactive" (Figure 1).

The section on inventions relies heavily on Macaulay's enjoyable cartoon illustrations and his mascot, the Mammoth. The explanations on this CD have about the same text as the book. Explaining how a telephone works in a couple of paragraphs (Figure 2) may not satisfy even an eight year old, but the cartoon, the Mammoth, and the animations are likely to distract the youngster until their attention moves on to the next subject.

They will be naturally drawn on to the next subject through hypertext links to inventors, principles of science, or "See Also" subjects. The explanations and the drawings are light and simplistic, not intended to be studied as the illustrations in other Macaulay books, such as Cathedral or Underground (a view of the world from underground, looking up). The profiles of inventors are a bit more informative, and the time line showing when individual inventions showed up, is interesting and informative.

Figure 1. If you don't touch the mouse for a few minutes, author David Macaulay will pop up and scold you, "Hey, this is interactive, so interact!"

Promotional material and packaging for this CD stress that it has Internet links. There is a button that will easily take you to Mammoth.Net (the only link offered). Once there, you will find a kid's clubhouse based on the Mammoth; however, there is no opportunity to learn anything, and no interesting links. In fact, the site already has a rather abandoned feel to it. The Classroom section still bore a sign "Closed for the Summer," though I was viewing this in late October. Also, Macaulay's personal diary entry was for September.

I fear the only reason for the Web page is to get the unwary to add their names to a mailing list (they ask you to register for the site with name and mailing address). The content of the site is pure entertainment and silliness based on the Mammoth. Few kids will want to log on more than a couple of times.

There is a fair amount of silliness throughout the CD. Even on the pages explaining how things work, clicking on a button may only play a silly animation and add no more explanation. For instance, on the page explaining photocopiers, clicking on the Copy button causes the copier to shoot numerous pages up in the air and the user to collapse on the lid in exasperation.

Another feature found in other DK CDs is a chance to download or print out material. Here, the Storeroom offers you stationery and postcards that can be printed in color, a dozen or so screen savers in After Dark file format, sounds, and movies. All are humorous material, usually involving the Mammoth.

Figure 2. One screen to each invention. They are information-lite, but entertaining.

It is not possible to copy text from the CD, except as a graphic of a whole page. These can be saved to disk or printed.

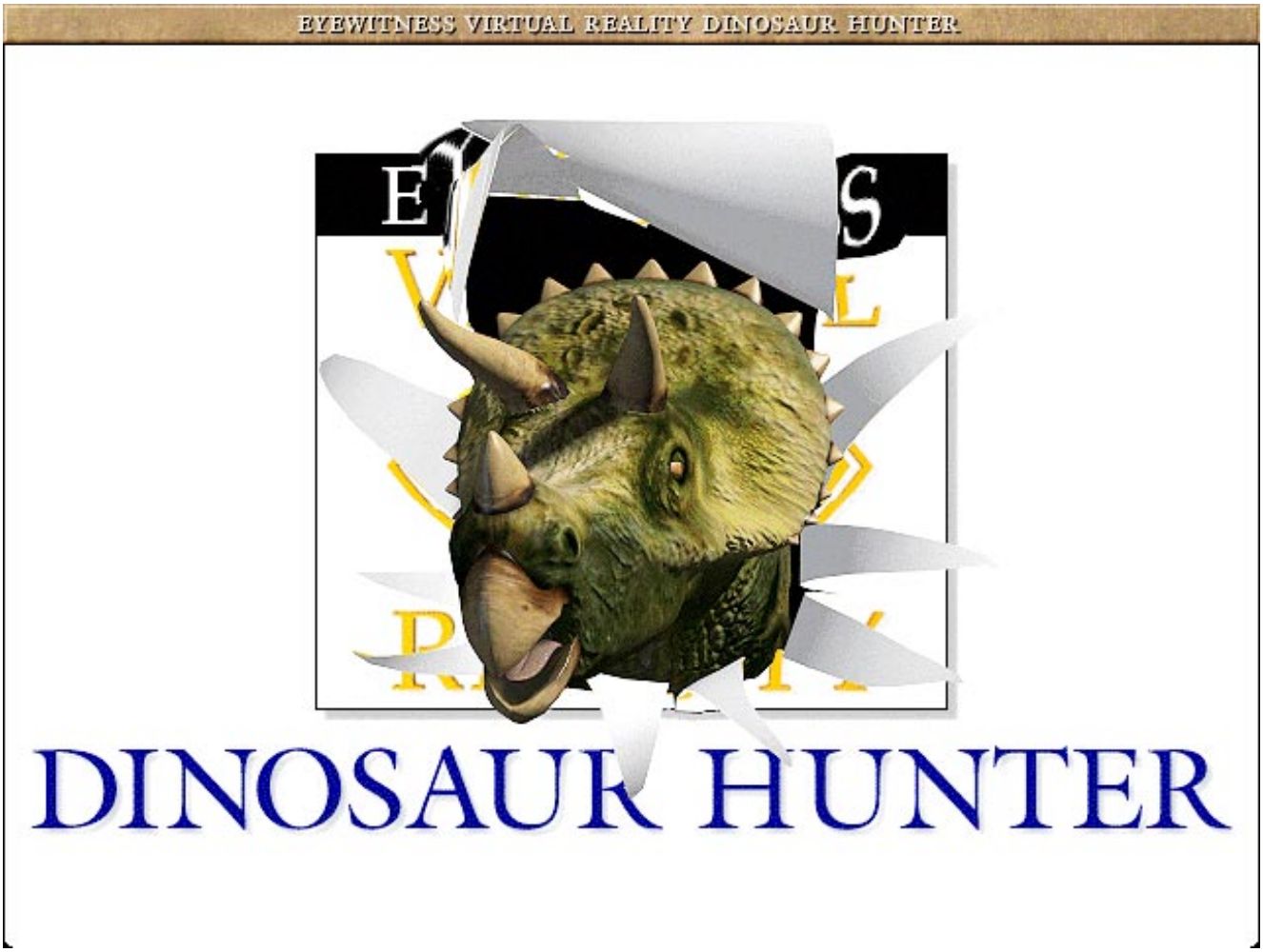
Conclusion

Don't buy this CD for the budding young inventor, or scholarly type child. They will be frustrated by the lack of information, but most kids from eight to 12 should be reasonably entertained by this product and may even learn a little.

The Way Things Work 2.0
The same CD works on Mac or Windows.

Minimum System Requirements:
25 MHz 68040LC or better
System 7.0
8 megs of RAM
3 megs of hard drive space
8-bit color
2x CD-ROM drive

Expected Street Price $39.95
Dorling Kindersley Publishing, Ltd.
95 Madison Ave.
NY, NY 10016
(212) 213-4800
(800) DKMM 575
fax (212) 213-5240
http://www.dk.com



Eyewitness Dinosaur Hunter

by Scott Beamer III

DK Multimedia released Dinosaur Hunter in August of 1996. It's estimated street price is $29.95. The package includes DK's pocketbook on dinosaurs and a 27-inch pop-up 3D model of a stegosaurus. My reviewer's version didn't include these.

This program is a virtual museum. There are lots of animations and information. In this museum, it is fun to explore the Arena, Excavation Site, Timeline, and the *free* store.

There are both Windows and Mac versions of Dinosaur Hunter. The Mac version's requirements are 25MHz, 68030 or faster processor, with at least 8 megs of RAM, 8-bit (256 color) display at 680 by 480 resolution, double-speed CD-ROM drive, 18 megs of disk space, and system 7.0 or later.

Installing it is very easy. Just double-click on the icon on the CD. Every time you start it you have to insert the CD to play it. It has over 50,000 words, fifteen videos, fifty animations, 340 rendered views, 650 screens, thirty 3D consoles, and 470 illustrations.

You start out in a lobby. From here you can take a tour, or go to the Arena, the store, or to Dino Online (if you have Internet access).

The Arena is the main exhibit, with giant models of a T-Rex and a Triceratops. The Arena has three floors that go in a spiral around the models, allowing you to view them in 3D. From a room off the Arena, you can jump to other DK multimedia products if you have the CDs. Along the stairs are exhibits and viewing scopes.

The dinosaur excavation site lets you dig up remaining bones to complete skeletons which will come to life (See Figure 1). When you are digging you can test the age of the bones by carbon dating. Once your dinosaur is alive, you can bury its bones again or follow it around the museum.

The World of Dinosaurs is a room filled with exhibits and models of what we have learned about dinosaurs, such as environment and evolution. The room has two entrances: one from the Time Line and another from the Arena.

The store is free. It lets you download stationery, party invitations, desktop patterns, masks, labels, do not disturb signs, dinosaur calls and posters. You can print out all of them except the dinosaur calls. You can print out the masks, cut them out, and glue them together.

The Time Line goes through the rest of the rooms, on the museum floor. The timeline has dates showing where in time you are. Along the timeline you will also see skeletons, pictures of dinosaurs, and 3D models you can rotate. On the wall there are plenty of exhibits to explore.

Dino On-line (see Figure 2) takes you directly to a Web site for dinosaurs. It is free and available only to owners of the CD (you need a password). On the Web page there is another free store, and it will also help you keep up with recent discoveries.

There is a navigator that lets you go to any part of the museum at any time. It also shows the location of any live dinosaurs roaming the museum.

This product may be scary for little kids. I think adults would have more fun if they used the CD with a kid. My favorite part of this product is releasing your dinosaur from the excavation site. I think this is a good deal for your money. It is exciting, entertaining, and I've learned plenty.

The Mac version's requirements are 25MHz, 68030 processor or faster, with at least 8 megs of RAM, 8-bit (256 color) display at 680 by 480 resolution, double-speed CD-ROM drive, 18 megs of disk space and system 7.0 or later.

Eyewitness Dinosaur Hunter
Street price: $29.95
DK Multimedia
95 Madison Avenue
New York, NY 10016
Phone: (212) 213 4800
Website: http://www.dkonline.com

Scott Beamer III is in the 6th grade at Anthony Chabot, a public school in Oakland, CA. He has been using a Mac since before he could talk.

Figure 1. Retrieving bones in the Excavation Area isn't very realistic. It's more like playing Myst, but still fun.

Figure 3. Dino Online is available free to owners of the CD.

DK's Castle Explorer

Hollywood Ruins A Kid's Book

by Scott Beamer

Boy, was my eleven year old son excited when a new CD unexpectedly showed up for review. It's called Castle Explorer, from DK Multimedia. It is taken from one of my son's very favorite books, *Castle*, by Stephen Biesty. My son has taken this book out of his school library multiple times in the last couple of years. He likes Biesty's other books as well.

The *Castle* book is a collection of very detailed black and white line drawings of a castle. The text tells why, where, and how the fictional castle was built. The considerable text fits so well between the numerous illustrations, that it is absorbed without much distraction from the engrossing drawings. The book has considerable intelligence and charm.

We started exploring the CD full of anticipation of a good time. This ended fairly quickly when we discovered that Biesty's drawings are overshadowed by a fairly vapid, interactive role playing game. The game is so different from the castle drawings that it's as if it were tacked on as an afterthought. Unfortunately, it is in the foreground. To do anything with the CD, one must begin by choosing to either start a new game or to continue a saved game.

I have an image of marketing types seeing Biesty's CD illustrations and deciding they were not interactive enough. So, in the same session they designed a game, including the plot, to give the CD more pizzazz.

Its graphics are totally different than Biesty's, and it takes place almost entirely in about ten rooms which the user can enter and explore. While Biesty's drawings are crammed with detail and full of surprises, these dull rooms contain a modest collection of very predictable items. Even the palette of colors is much drabber than Biesty's drawings.

To gain access to these rooms, one must deal with the person in charge of each (See Figure 1). This is done through QuickTime movies of actors who suspect you of being a spy and ask you questions about the castle. These video segments remind me of a small college Shakespeare production. The actors seem unsure of themselves and are overly loud and hale and hearty in their strange accents. If these were scenes from a Saturday morning kid's show, the kids would be channel surfing after only a moment or two.

The other problem with being hustled into the game when one first tries out the CD, is that to gain access to the rooms where the game takes place, one must answer fairly obscure questions about castle life. The answers are found in the text about the castle, best absorbed while exploring the castle. Those who follow the packaging PR and product design and play the game first, will get the answers wrong, be accused of being a spy, and be locked in the dark dungeon. They begin the game with enough gold to bribe their way out of jail once, but the second time, there is no way out. The player must learn how to quit the game and start a new one.

Eventually, people will learn how to explore the castle and leave the game for later. This is when the fun starts. From the navigation screen, choosing a part of the castle or its surroundings starts a great flying zoom in on a 3-D view of the castle (See Figure 2).

Other than this one view, Biesty's illustrations are actually two dimensional. However, they are crammed with the same detail as his book illustrations. The user will soon discover he can drag away parts of the roof or walls to reveal still more detail.

Running the cursor over the illustration pops up labels for dozens of individuals and items. Clicking on a marked

Figure 1

[V]ideo segments remind me of a small college Shakespeare production. The actors seem unsure of themselves and are overly loud and hale and hearty in their strange accents.

[T]eachers tell me that they are not all so thrilled to have CDs in the classroom. Often, they are too much like watching television, with too low a density of information.

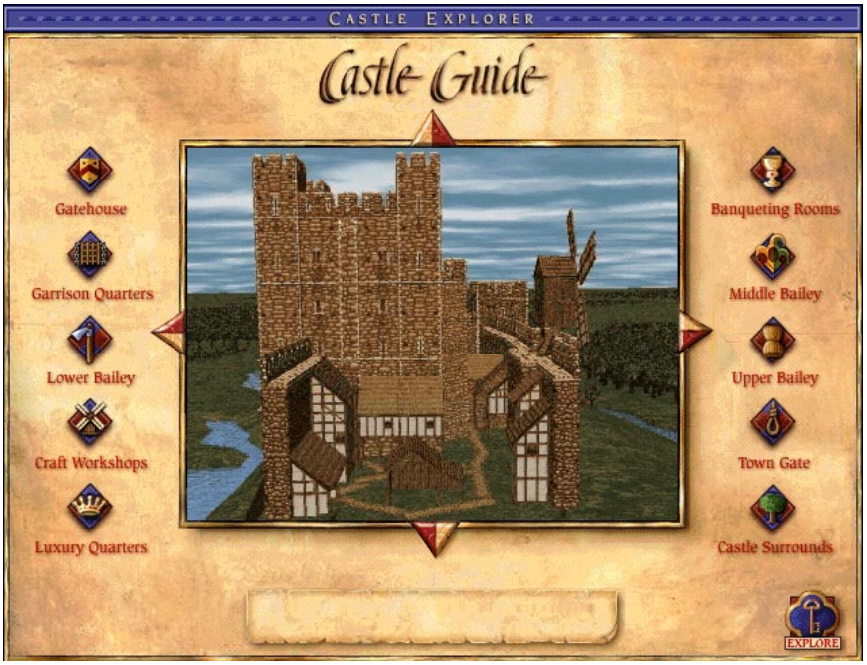


Figure 2

item pops up a paragraph or two of text about it. One can zoom in one level and pan to the sides, but to go to another scene, one must go back to the navigation screen.

Humans are numerous, but minute and insignificant next to the mass of the structures being shown. This is Biesty's normal style. Everyday castle life is presented in considerable detail, though warfare isn't. Siege is often mentioned but not shown. While one views scenes of the Castle, there are background sounds of people's voices, animals , and tools being used.

The bulk of the text of the CD is contained in six "books" on various parts of life in and around a castle. Actually, I feel the text in any of these volumes could be contained on a handful of laser written pages. Also, I sense the text has been "dumbed down" compared to that found in the book. A considerable breadth of castle life is covered, but it is as if it were written for a younger reader and by someone less informed than Biesty. As I don't have the book in front of me, I can't be sure.

DK Multimedia is extremely fond of the term "edutainment." For me, they are in the process of defining this concept with their pervasive CDs for the young. Yet, I hear teachers tell me that they are not all so thrilled to have CDs in the classroom. Often, they are too much like watching television, with too low a density of information. I agree that is the case with the game portion of this CD. I feel it disqualifies itself as an appropriate classroom tool. In its plot and facts, it is too much like MYST and not enough like Oregon Trail. Please note: other DK CDs do not have this problem. See my review of Eyewitness Encyclopedia of Space and the Universe elsewhere in this Newsletter.

System Requirements are fairly severe, a 25 MHz Quadra or better, with System 7.0, 8 megs of RAM, 8 bit color, and a 2x CD ROM drive. You may have some trouble with the QuickTime Video and sound if your unit is near the minimum. I noticed a bit of break up on my 16Meg Power PC.

Conclusion

For those who haven't read the book, there may be considerable interest in exploring the drawings of Stephen Biesty. However, the CD is dominated by an irrelevant, trite interactive game that obscures the charm of Biesty's drawings. Detail, intelligence, charm, and educational value are words I associate with Biesty's works on paper. I feel none of those terms are appropriate for the game portion of this CD.

Instead of buying this CD, I'd suggest you buy his book, *Castle*.

Castle Explorer
Expected Street Price $29.95
Dorling Kindersley Publishing, Ltd.
95 Madison Ave.
NY, NY 10016
Phone: 212/213-4800
Fax: 212/213-5240
800/DKMM 575
http://www.dk.com

Requires: a 25 MHz Quadra or better, with System 7.0, 8 megs of RAM, 8 bit color, and a 2x CD ROM drive. Note:You may have some trouble with the QuickTime Video and sound if your unit is near the minimum.

Bricks 1.0: OOP there it is

by David Schnider

Bricks is completely AppleScriptable. This is particularly useful because it allows you to animate your creations.

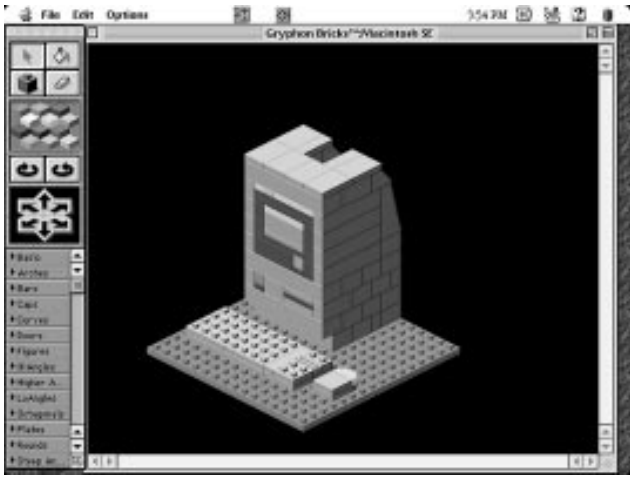
Around the middle of last summer I was reading Douglas Coupland's book, *Microserfs*. The story, about the software developer subculture, follows a brief period in the lives of a group of former Microsoft coders. Under the leadership of one of the more unusual members of the group, they launch a startup software company with the brilliant idea of developing a piece of software called OOP, which would bring the world of Lego™ to our desktops.

Also around the middle of the summer, I was working in the BMUG office. Next to the receptionist's desk sat an advertising rack, which I had walked past daily, never really paying much attention to the blurbs that lined its shelves. I didn't, that is, until one morning, on the way to my desk, I noticed a Lego™ brick out of the corner of my eye. For a brief moment I felt disoriented, considering the possibilities. Either I was so overworked that my brain had conjured an image of OOP, or someone had actually developed it.

Of course, the reality was Bricks. OOP was a fictional piece of software that the people at Gryphon, the developers of Bricks, weren't even aware of. Bricks began in 1992 as a sort of screen saver which rained down layers of identical bricks on a baseplate. Gryphon developed the current interface over the next couple of years, leading to the version demonstrated at MacWorld San Francisco in 1996, mere months after *Microserfs* was published. Clearly the two evolved independently, but the similarity is eerie.

Needless to say, I quickly acquired a copy of Bricks. As I carried it home, my mind swam with images of a Lego™ city a friend of mine had built in his garage when we were in junior high. The possibilities seemed endless if I could figure out how to use it–and how hard could cyber-Legos™ be to figure out?

The interface is remarkably simple. There is a window with a base plate, a palette of bricks, and a set of controls for manipulating those bricks. The bricks are separated into classes to make it easier to sort through and select the shapes you need. Each of the sections also tears off so you can drag it to a convenient place on the screen. However, moving the bricks to the right places can be difficult at times. Even though the object can rotate, there are times when parts are blocked from view. However, Gryphon added a multiview feature to solve this problem. It gives you three additional views that make it relatively easy to line up your bricks and get an overall view of your work in progress.



Gryphon developed the software for the Mac, and the controls are all very familiar. It takes a few minutes of experimentation to figure out exactly what everything does, but not much more, which is how software should be. For anything that is still unclear after that, Gryphon wrote a very simple, concise manual that explains how everything works. Basic familiarity with the Mac interface is required, but nothing more complex than drag and drop. The software also comes with Apple Guide and Balloon Help files for on-the-fly assistance.

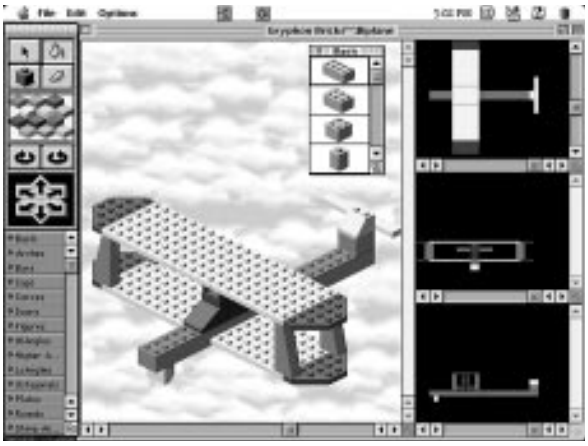
The CD includes an adult's version and a children's version for different levels

of users. The children's version includes some spoken instructions and a simplified set of buttons. It does not have menus or the advanced features that are available in the adult version (such as scripting and Quicktime). Experienced eight-year-olds may find the adult version more fun, but forty-year-olds new to the Mac may have an easier time with the kid's version.

Beyond the basic setup, Bricks includes an astounding set of features. Bricks is completely AppleScriptable. This is particularly useful because it allows you to animate your creations. The program is also Quicktime compatible. If you can animate your creation, you can also create a Quicktime film of it to distribute to your friends or post on your web page.

Bricks has three printing features. You can print an image of your work, you can print a parts list, or you can print instructions. Gryphon anticipates that some people will want to take their creation from the screen to the real world, and with the latter two print options, you have everything you need to do it. Also, for those of us who want to admire some finished products, and maybe search for a little inspiration, Gryphon provides a sizable collection of sample files of all different kinds.

Though Bricks is a wonderful piece of software for a first release, it does have some shortcomings. While the package includes a large selection of bricks, I found myself looking for a number of pieces that weren't available. Gryphon is in the process of fixing this problem in two ways. First, they are developing new sets of bricks and will periodically distribute these packages for free at their web site. Second, users can submit designs for bricks they'd like to see. Send in a simple sketch and some details about a piece you need and it may become part of one of their next free releases.



Bricks is conspicuously missing a zoom in and out feature. When one is working on a small screen, creations quickly grow beyond the available window space. In the current release, the only option is to scroll back and forth. This is particularly annoying when you want to look at a large finished product, like one of the sample castles. Gryphon is also aware of this problem and is working on adding this feature in the future.

The software is also lacking a functional Save As... feature. While you can make Quicktime animations with your creations, you can't save them as picts or gifs to send to friends who don't have the software. Gryphon has developed a version that can save in pict format and are determining how to distribute the feature. Unfortunately, they will not be including gif format because they would have to pay a licensing fee for the compression. Image saving is supported through AppleScript, so users can write scripts for purposes such as CGI.

Overall, Bricks is a fun piece of software that allows you to put your imagination to work without first spending hours buried in a manual. What makes it a good product is its ease of use and entertaining possibilities. What makes Bricks an exceptional product is that it was developed for the Mac first and then ported to Windows. I spent hours snapping bricks around and trying to build structures I remembered from my youth. The software posed some limits that made it difficult for me to give my thoughts shape, but, in the end, my own imagination was my greatest limit. Like the toy it is designed after, Bricks is very easy to use, but not as simple to create with. Planning out and placing your bricks so that they finally become the shape you imagined takes a good deal of effort. But, with a little time and practice, there's little to stop you from building a world of your dreams, brick by brick. And while you're at it, if you've read *Microserfs*, check the about box and let it scroll through—you'll find an amusing surprise...

The CD includes an adult's version and a children's version … Experienced eight-year-olds may find the adult version more fun, but forty-year-olds new to the Mac may have an easier time with the kid's version.

Bricks requires:

Any color Macintosh with a 13" or larger monitor, 4MB of RAM, a CD-ROM drive, and System 7.1 or greater (System 7.5 suggested for scripting functions). Updates are available at http://www.gryphonsw.com.

Gryphon Software Corp.
7220 Trade St., Suite 120
San Diego, CA 92121-2325
Tel (619)536-8815
Fax (619) 536-8932

David Schnider is a second year law student at the UC Hastings College of Law. He is a member of the Comm/Ent Law Journal and President of the Hastings Intellectual Property Organization, and is interested in practicing Intellectual Property and Antitrust litigation. He has been a BMUG volunteer since 1991, a staff member from time to time, and is currently a member of the BMUG Board of Directors.

Amber

Journeys Beyond

by Frank Araullo

At first glance, it would be easy to write off Amber: Journeys Beyond as yet another Myst wannabe. The mechanics of the game and the interface are similar to Myst, as is the copious use of high-resolution graphics. What sets Amber apart from the others is an intriguing story line and an amazing attention to detail.

Amber is based on a supernatural theme, which has become popular lately. The story revolves around the work of a scientist who discovered a means of observing and interacting with paranormal phenomena. But during an experiment with the psychic equipment, she was swept up in the paranormal activity of the house in which she was working and is now trapped between the real world and the spirit world. Armed with a sort of psychic digital assistant and mind-tapping headgear, you have to deal with the ghosts of the previous occupants on their journey to the afterlife. There are three lost souls to locate, each of whom lived in the haunted house at a different time period. You're free to deal with the three souls in any order, providing a nonlinear element that's rare for this type of game. Still, there are certain points in the game in which the action can hinge on a specific series of actions, and I felt at times as if I were being herded toward a point in the game. This is all too common with this type of game: The interface is limited in such ways that the player can only point, click, and hope something good happens, rather than operate in a truly interactive environment.

As is usually the case with such games, attention to detail is crucial to successful completion of the game, and frustration is a little too easy to come by if you miss the small but important details. I found most of the puzzles to be fair enough; they shouldn't be difficult for people willing to use some logical problem-solving skills. However, there were a few parts of the game that felt like eternal torment in themselves. For example, at one point there is a maze which is solved only through trial and error, and the repetitive effort of going to the start of the maze and exploring the possible paths took a toll on my patience. As with Myst and similar games, this is not a game for people with short attention spans looking for flashy, whiz-bang action.

Figure 1. The story revolves around the work of a scientist who discovered a means of observing and interacting with paranormal phenomena.

The creators of Amber: Journeys Beyond molded intriguing environments to be explored. The graphics in Amber are excellent, conveying an unreal feeling that generally enhances the game's supernatural elements. The sound effects are also very good, with the background sounds enriching the game environment at almost every turn. Amber isn't a violent game by any measure, but it does touch on subject matter that may not be appropriate for younger players.

Amber: Journeys Beyond certainly isn't for folks who don't have the patience or energy to play mind games. But if you like to mess around with logic puzzles and dabble with the occult, Amber is hauntingly good.

Frank Araullo can be reached at araullo@aol.com.

Amber: Journeys Beyond
Price: $69.95
Minimum system requirements:
System 7 or later
Support for 16-bit color at 640x480
5 Mb of free RAM (8 Mb preferred)
25 Mb of free disk space

Changeling Software
2507 Albata Ave.
Austin, Texas 78757
http://www.changeling.com

3-D Ultra Pinball

By Frank Araullo

Warning: This game may be hazardous to your keyboard. 3-D Ultra Pinball, from Sierra Online, offers an excellent digital pinball experience. Aside from a few programming goofs, and some gratuitous vestiges of its MS-DOS origins, this game is simple fun for those folks in search of something that entertains without commitment. There are too many games where the time commitment is worse than finishing off someone's latest mega-novel. Personally, I have better things to waste my commitment anxieties on than my entertainment software.

3-D Ultra Pinball is built around an outer-space theme. There is some storyline about building a space port, but most folks would just want to give the plunger a sharp pull and watch the ball fly. The game consists of three pinball tables; each table in turn consists of a central table and two smaller tables on either side. This arrangement makes excellent use of screen real estate, given that most pinball tables are supposed to be larger in length than width. Sierra Online also did a good job in expanding the usual pinball mechanisms to take good advantage of what can be done in a virtual environment. Along with the usual ramps of a regular pinball machine, 3-D Ultra Pinball's tables offer teleporters and shuttlecraft to bounce the ball around the screen. Several elements on each table have accompanying animation sequences which also spruces things up.

There are some rough edges to this game, but most are easily dismissed. The "Power Macintosh compatible" label is misleading; the game program is a "fat binary" and has native code for Power Macintoshes, although it runs pretty well on most Quadras. The minimum processor requirement is a 68030 running at 33 MHz, in addition, it will take up to 8 megs of RAM and about 11 megs of hard drive space. Keep in mind that the help documentation that goes with the game is presented as a separate application, so if the game soaks up all of your available memory, the help documentation will not be available. There are other rough edges around the screen redraw, especially if the desktop isn't hidden, and around the preference controls, but none of these details intrude on the action on the pinball table. One item that I found particularly interesting was the "expert help" system. This enables the playback of voice recordings which highlight important targets and opportunities for bonus points. I found that the "expert help" voice-overs enhanced the sound effects system and pointed out parts of the game that I'd never notice considering all the action on the table. I don't know why the programmers didn't incorporate digitized voice-overs into the sound effects; thankfully, they're available as an option and something that I have left turned on.

Figure 1. Lining up for a big shot. (Ball nears the left flipper.)

Overall, I found 3-D Ultra Pinball to be entertaining, and very easy to become addicted to. The game may not be as realistic as other pinball simulators, but that doesn't detract from the fun of the game. Although it may burn as much time as any other game, at least you don't feel tied down to it, like you are to that seldom used time-share

Figure 2. No lack of points here. (Ball in action in upper left table.)

You may want to consider buying a joystick or gamepad to use with 3-D Ultra Pinball, as it'll soon have you pounding your keyboard to keep that pinball flying.

vacation house. You may want to consider buying a joystick or gamepad to use with 3-D Ultra Pinball, as it'll soon have you pounding your keyboard to keep that pinball flying.

3D Ultra Pinball
Computer: 68030/33 MHz or better
Memory: 8 megs RAM
Hard disk space: 11 megs
CD-ROM player
Street price: $40

Sierra Online
3380 146th Pl. S.E.
Bellevue, WA 98007
(800) 757-7707
(206) 649-9800
http://www.sierra.com/

Eyewitness Encyclopedia of Space and the Universe—Educational Eye Candy

by Scott Beamer

The Eyewitness series of books developed by Dorling Kindersley (published by Alfred Knopf) has become ubiquitous in middle class kids' libraries in an impressively short period of time. In expanding the Eyewitness series to include CDs, DK Multimedia Publishing has not merely put the pictures and text from their books on CDs. Rather, they are in the process of demonstrating before our eyes what the computer CD offers as a new medium for education. What's more, these products are so attractive and are being marketed at such a reasonable price—$30 or $40—that they seem certain to become as ubiquitous as books. I have not found every one of this series of equal quality, but the Eyewitness Encyclopedia of Space and the Universe is the latest and most impressive of this series.

The interface

Key to DK's success is a style of graphics and interaction that is at once attractive, interesting and somehow familiar. They seem to have borrowed from several of the environmental niches that normally attract kids, including computer games, educational TV shows—such as Nova—and a splash of Saturday morning cartoons.

From the initial animated splash screen, this product is highly reminiscent of MYST. We find ourselves zooming down into some sort of Pantheon to Science. The main screen confronts us with a close–up of a wall full of strange objects. Only two are immediately identifiable: one is an elderly brass telescope, and the other is an incongruous blue plastic three ring binder. Everything else in view has a rather Victorian look to it, resplendent with brass and mahogany, gadgets of a bygone era (Figure 1).

The most spectacular choices [in the planets section] are the low altitude fly–overs of Mars and Venus…

Figure 1. The main window of this CD seems a cross between Sherlock Holmes' study and MYST. Click on any object, and away you go to a surprisingly intelligent and detailed young people's encyclopedia of Space and the Universe

While all of the twenty or so objects are interesting enough to get anyone pointing and clicking, here they are labeled, giving one some sense of where they are headed. On clicking, one is whirled away through an animation to a new screen where one is expected to make more choices.

The animated interfaces for the various modules are fun and visually gorgeous. For me, they bring up images of Jules Verne, Sherlock Holmes, and above all, Broderbund's MYST. The background music is especially reminiscent of MYST.

One of the most appealing to me is the section on the planets. The first screen is a cluster of attractive models of the planets—and the moon. Clicking on one takes the viewer to some text about the planet and several more buttons to click. The most spectacular choices are the low altitude fly–overs of Mars and Venus, accompanied by maps with all named features identified (Figure 2).

The subject matter is divided into about ten sections. Each has its own style, not especially coordinated with the others. All the major fields are covered, including ancient and modern astronomy, discussion of the universe, cosmology, the space race, and space hardware. Special sections cover profiles of fifty important people in space and astronomy, a sky dome (mini planetarium), and more detailed information on space travel.

There is even a quiz to see how much of the textual material you have absorbed and a three page list of Web sites that are of interest to those wanting more information on space and the universe. For those who need a break, there are two games and lots of visuals, including 3D rotating models of several spacecraft. The models were mildly disappointing, as they did not include the same level of informational richness as other modules.

Those who are acquainted with other planetariums on the Mac such as Red Shift and Voyager will find the Sky Dome somewhat under powered. Those to whom this is a new experience are sure to find this very interesting. While one can look at the sky from virtually any place on the globe, from thousands of years in the past to thousands in the future, one cannot go out in space and look back at the earth. Other controls are similarly limited when compared to other planetarium programs. Still, there is a list of twenty or more historical observations, beginning with the Emperor of China in 2450 BC, that one can go to and recreate with the Sky Dome.

While my criticisms of this product are mild, my main one is that I would like an obvious, more orderly way to review the material on the disk—a Table of Contents, for instance. The artful jumble of objects on the main screen suggests no particular order to approach things. Instead, it supports the mindless repetitive clicking familiar to a generation of children with minute attention spans. Those children who will not advance much beyond that interaction with this CD may still learn something.

However, for the more enthusiastic students, there is an encyclopedic wealth of information here, greatly enhanced by graphics, motion, and sound. Certainly, there are moments, as in any encyclopedia, when the information presented is too scant for our interest in a particular subject. For the most part in this CD one is surprised by the depth of the information and the intelligence with which it is presented (Figure 3).

There are mentions of Big Bang vs. Stable State universe, black holes, supernovas, white dwarfs, and satellites launched by Japan and India. However, one has to be surprised to see Einstein's General and Special Theories of Relativity handled in a few sparse paragraphs. For me, it doesn't work, but that highlights another aspect of modern learning. Most of this material is not new to the viewer. Much of the time, they are merely checking things off in their memory and possibly reorganizing it.

Figure 2. The graphics quality of this CD is stunning. Here you see a labeled map of Mars and a QuickTime video of a fly-over of Mars.

Figure 3. The CD covers a surprising depth and breadth of material for young users.

Figure 4. A typical page of text shows a rich combination of text and graphics. As both can be copied and pasted, your kid's reports will look great.

I have seen it suggested that this CD is appropriate for kids eight years and older. Certainly some less than eight will work with this CD in rapt attention. Others, older, will squirm and wish they were somewhere else. Still, I feel this has to be a magic experience for most children. Kids' reports are going to look great, too, as both text and graphics can be copied and pasted into other applications, albeit through DK's own way of doing this, not the Mac's (Figure 4).

It is even harder to say who is too old for this CD. Certainly those parents or teachers sitting next to a young viewer will find this one of the most interesting products to share on the computer. The adults are even likely to increase their own knowledge about space and the universe.

Requirements

DK Multimedia states that the minimal system requirements are: a 68040LC/25 MHz processor (LC 475) or better, 8 megs of RAM, System 7.0, 8-bit color, 2x CD-ROM drive. This CD is pushing the envelope in innovation, using QuickTime and Virtual Reality. While it ran fine on my Power PC, we had trouble running it on a Quadra 660AV with 16 megs of RAM. An hour with DK tech support was not able to find the cause of this problem. I solved it by using FWB CD-ROM Toolkit. However, trying it on another recent Performa with 8 megs of RAM also produced mediocre quality sound and animation.

Conclusion

Dorling Kindersley has achieved a magical mix of entertainment tricks and information, stirred with wonderful animation and illustration to deliver one of the most entertaining educational products ever available on a home computer. Not only is it a sure winner with most children, computer buffs should pay attention. This is the best demonstration to date of how DK Multimedia is making significant progress in discovering how CDs can offer more powerful learning experiences than books.

Eyewitness Encyclopedia of Space and the Universe
Computer: 68040LC/25 MHz processor (LC 475) or better
Memory: 8 megs RAM
Other: 8-bit color, 2x CD-ROM drive
Expected Street Price $39.99

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New York, NY 10016
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Fax (212) 213–5240
Web site: http://www.dk.com

Abuse

A Bloody Good Romp

by Frank Araullo

Every once in a while I get a bad itch for a really good video game, some thing loud, flashy, and full of mindless action. While the usual answer was a trip down to the local video arcade, a few recent releases into the Macintosh game market have made satiating this habit a little easier at home. One of these games is Abuse, produced by Cracked Dot Com and published by Bungie Software, the same folks who brought you the 3-D thriller Marathon series. Abuse follows in the same bloody, messy path, albeit with a different approach.

Abuse is in the techno-future, where you're imprisoned for a crime you didn't commit. It turns out that the prison doctor has been playing around with human genetic material on the side and isolated the genes that are responsible for violent behavior. But while messing around with the bad-behavior DNA, an experiment goes wrong and a genetic mutation spreads throughout the prison population, turning everyone—except you—into crazed, blood-thirsty monsters with laser guns stuck in their backsides (do not ask me where the lasers came from). So you don a convenient armor suit and go about the business of breaking out of the prison, with hordes of gruesome monsters in the way. Yes, it's a way-out premise, but a pretty good setup for this action game.

The game is of the two-dimensional, scrolling field variety. The interface is a bit different, though, with keyboard controls for movement and the mouse for weapon targeting. It's a great combination, as you can actually shoot at the bad guys as you're running away from them. My only problem with the setup is that the character tends to shoot above the target cursor, so be sure to aim low. The weapons set is nothing out of the ordinary but pretty useful for setting up the graphically destructive scenes.

[W]hile messing around with the bad-behavior DNA, an experiment goes wrong and a genetic mutation spreads throughout the prison population, turning everyone—except you—into crazed, blood-thirsty monsters with laser guns stuck in their backsides…

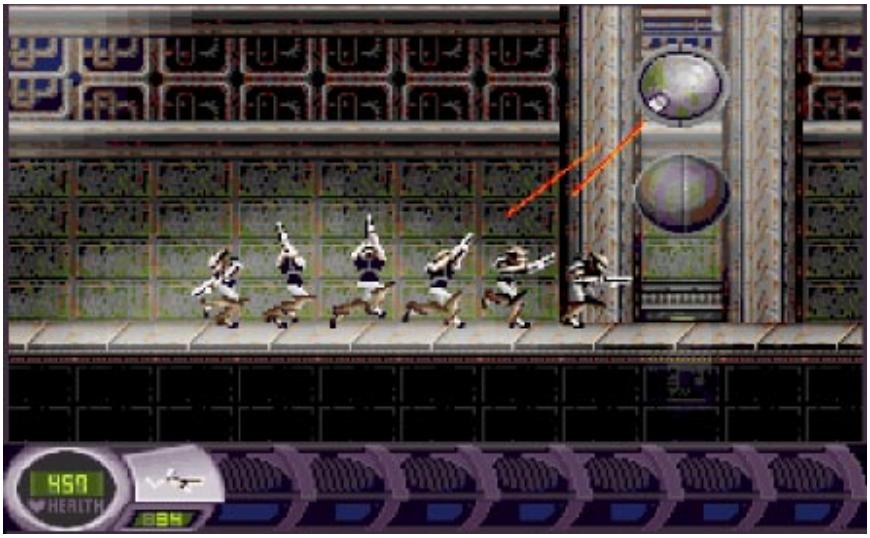

Figure 1.

The graphics of Abuse are reminiscent of Japanese anime, and there's a feel of actually playing in a comic book scenario. As you'd expect, Abuse is a pretty violent game. It's hard to avoid being gory and bloody when you're shooting lasers and explosives at semi-human monsterthings, and all but impossible if your armor suit fails and the monsters tear you apart. With 20 levels of mazes to run through, Abuse isn't a short game; even the 4-level demo version can keep you occupied for a while. The game also sports the ubiquitous network play option

so that you and seven of your friends can run around and blow each other up. Abuse can be played on any Macintosh with 68040 processor or better, any version of System 7, and at least 6 megs of free RAM. Abuse is also PowerMac native—the graphics on the PowerMac are substantially nicer than those on the older Macs.

Abuse isn't a mellow brainteaser by any means. Most of the game has very little to do with brainpower at all beyond noticing the secret passages that hold weapons caches and the occasional monster you wish you didn't find by accident. But for some mindless, blow-it-up fun, don't pass up Abuse because of its two-dimensional take on the action—you'd be missing out.

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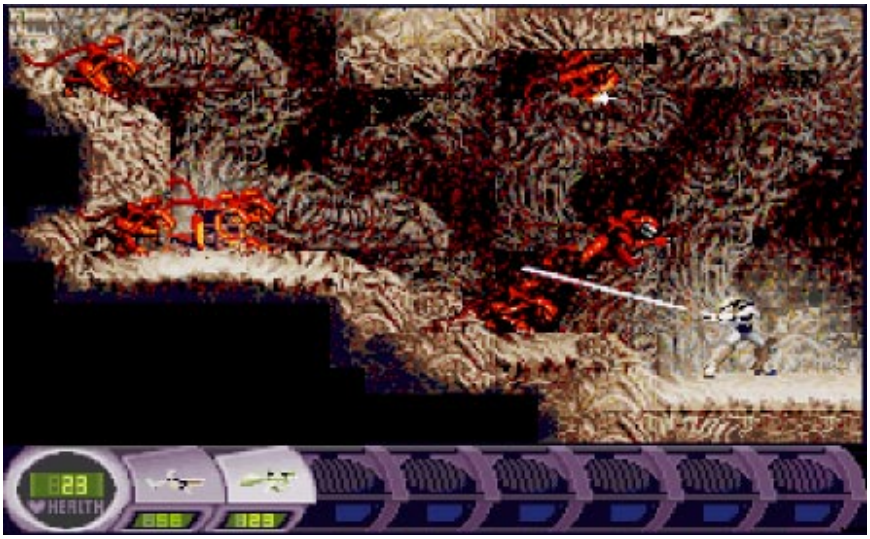

Abuse
Bungie Software
P.O. Box 7877
Chicago, IL 60680-7877
info@bungie.com
Phone: (800) 295-0060

Minimum System Requirements:
68040 or better processor
Support for 8-bit color at 640x480
System 7 or higher
6 megs of free RAM

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A MacWarrior on MechWarrior 2

by Franklin Dang

MechWarrior 2 is a game of bipedal robots. As a player, you harness the power of a "mech," a 40- to 80-ton giant humanoid-like machine. You can move at speeds up to 160 KPH and have an arsenal loaded with everything from machine guns to lasers. When playing it, I felt like Sylvester Stallone in "Judge Dredd," only more buff.

I first saw the game on a PC. Later, it came to the Mac platform. It looked like fun, and I soon found out that it was. It takes 48 megs of hard disk space—a lot of space for a program. The full install takes 113 megs. This tipped me off that it was going to be a hard game to learn.

MechWarrior 1 was a Super Nintendo game and as far as I know, it was never available for the Mac. It had a completely different scenario and was not as exciting because it didn't have 3-D textures. I rented it a few times but never thought about paying the $60 price.

When I first started playing MechWarrior 2, I liked the loud music and the long movies. The startup movie sets up the game with the story of a disabled mech getting destroyed. Other movies show the different planets where the game takes place. After playing for a while, the music and other sounds got boring, so I turned them off by plugging in the headphones (although there is a preference option to turn them off). To get through the movies, I just clicked the mouse.

The movies are abstract with chunky resolution. They felt unrealistic, but once I was in the game, I felt like I was a mech. The colors are limited to reds (explosions), greens (the plains), browns (mountains), and bluish-white (the ice).

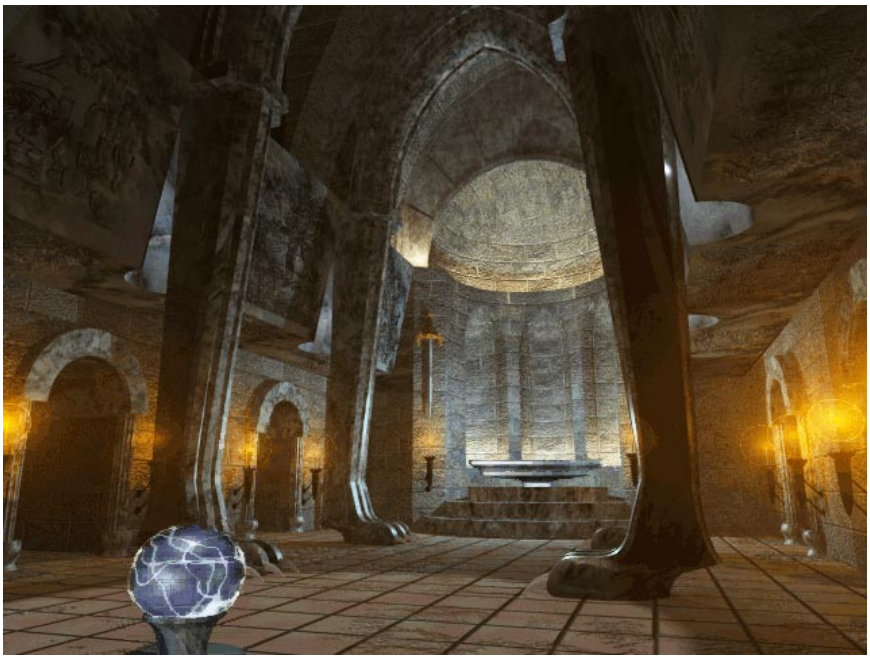

Figure 1. Entry hall

The color tone of the game is mostly dark, even when it's daylight in the game. The boring colors don't take away from the fun of playing the game.

The game involves an in-depth story in which the Jade Falcon Clan and the Wolf Clan are in a constant fight for power. I liked how the story explained that they were fighting for domination based on the player's actions. Once I got to the menu screen, I chose the Wolf Clan because I like wolves. The clans are interchangeable: they share the same levels and characters but in a different context. I could relate to the role-playing aspects because I am a "recovering" Magic fiend. The action-oriented "shoot 'em up" object of the game drew me in.

After the menu screen, I went to the training area. It took a long time to train to prevent being killed. Training includes learning aspects of the game such as shooting at targets (balls that float in the air), going to different places on the map using the navigation points, seeking out and destroying a mech, and "Drivers Ed" for the mech (i.e., maneuvering between cones). In the training section, a narrator tutors you. If you screw up, he yells at you, and you have to restart.

The object of MechWarrior 2 is to complete missions, gain honor points, and update your rank until you become the Clan Leader by using "your" mechs against the other clan's mechs. You begin as a MechWarrior and work your way

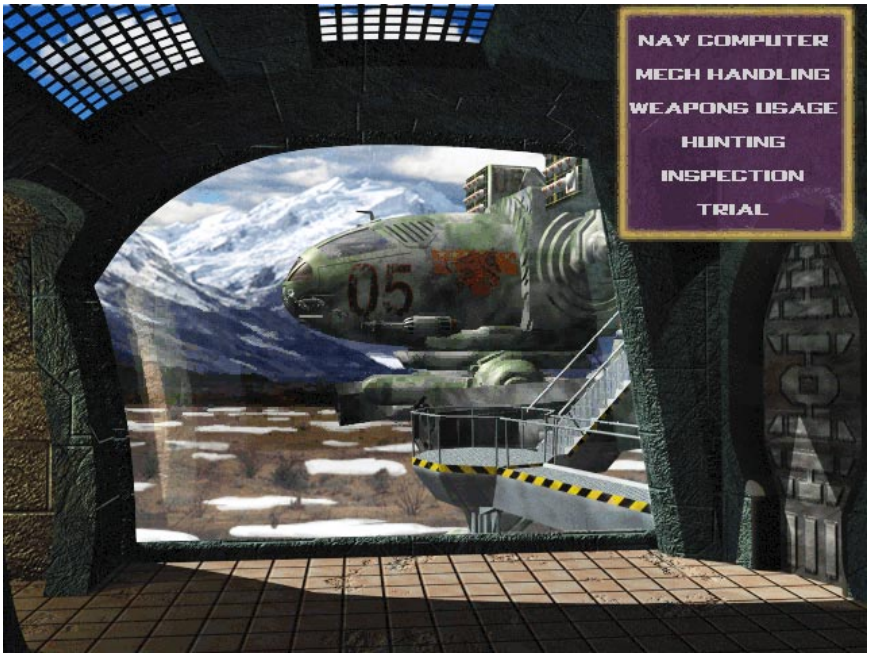

Figure 2. Training area

up through the ranks. The game begins in the main hall. From there, you can go to the training room or to the briefing room.

You start a mission from the briefing room. There, you are given a destination, one of several planets. You learn the conditions of the planet (freezing, boiling hot, mountainous, plains, etc.) and you learn the point of a mission. At this point, you can launch the mission or head for the "Mech Lab." There, you can chose a different mech and adjust your amount of armor, speed, heat sinks, and weapons.

Missions involve killing a certain number of mechs or destroying buildings. All missions have specific objectives. For example, a primary objective could be blowing up a building; a secondary objective could be destroying all the mechs in the neighborhood; a tertiary objective could be destroying any targets of opportunity (vehicles, buildings, etc.). From there, you go to the download screen. Afterward, you drop on to the planet of the mission and go through the navigation points, killing enemy mechs and completing your mission objective. The choice of weapons includes lasers, missiles, machine guns, and more than 15 different mechs. Once your primary objective is completed, you are picked up by your ship and transported back to the Clan Hall. Then, you re-enter the briefing room and learn your stats for that level. At this point, you can save your game or continue.

Once I finished the training and went to the first mission, it took a couple of tries before I accomplished it. The first mission helped tune up my playing ability. I experimented with different mechs under the maximum weight limit. As the game progresses, the weight limit increases.

I like this game a lot. It gets harder quickly, and players must adapt by changing strategies. Enemy mechs grow heavier and tougher to beat. Running away or hiding from a mech doesn't always work. When you beat the game, you become the leader of your clan. I probably got about two-thirds of the way there, but I never quite made it. I would get stuck, and I'd never get past certain levels. There is a "cheater" mode in which you can add invisibility and infinite ammo; if you do that though, you can't advance to the next level or add that score to your career stats, when your score is tallied.

My favorite aspect of the game is navigating. Sometimes I could go straight to my goal, but most of the time, I'd have to go through mountains and other paths, killing a couple of mechs in my way. At these times, I would feel like I was actually using my brain instead of just shooting things.

I was playing MechWarrior 2 on a slower Mac than recommended, so the whole game-playing seemed a bit slow, but when I played on a faster machine, there wasn't a big difference. Once I got used to all the controls, playing was easy and fun. I also liked that all the graphics were in 3-D.

I would recommend this game to anyone with a fast computer.

MechWarrior 2
Computer: Mac compatible CPU, PowerPC 601/66 processor or better, System 7.5.1 or better, double speed CD ROM drive, 256 colors (640 x 480)
Memory: 11 megs free of real RAM
Hard Drive: 48 megs uncompressed hard disk space
Price: $49.95

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Franklin Dang is a 14-year-old eighth-grader in Sonoma. His middle name, Nookani, means "wolf." His current interests are playing Magic and Warcraft II. He doesn't play MechWarrior 2 anymore because he lent it to his uncle. When he's not playing Magic, he plays soccer and swims. He volunteers at BMUG during summers and would like to find a job in the computer industry.

Odyssey

The Legend of Nemesis

by Joseph Steven Coleman

Nice Deck Chairs

Was there a member of your family who was not quite clear on the concept when it came to giving gifts? When you enjoyed the Beatles, did your favorite Aunt show up with "101 Strings Play The Beatles" or "The Beetles?" When you said you liked hip-hop, did your Mom bring home a copy of a beat poetry album with "hip" on the cover? Did the love of your life fix you some chop suey when you mentioned a fondness for Hong Kong style dim-sum?

If so, you may want to avoid hints for a computer role playing game. They might show up with a copy of Odyssey.

Odyssey is a basic find-and-kill game, with a collection of weapons and nice little chotchkies to pick up along the way. The basic game consists of starting off on the shore of an island following a shipwreck, meeting people and creatures, and attempting to kill most of them. Sometimes you get killed, but there is no real penalty for dying in this kind of game—you just come alive again and start from the beginning. You start over with the knowledge of what worked before, so you can zip through the secret doors discovered in the previous lives, and advance to the point where you died most recently.

You can talk with those you encounter, but the conversation will be very limited. There is a limited set of key words the encounters will respond to—and a limited set of responses. One character had the same response to over a dozen questions I asked. Maybe he just didn't like me.

You can create maps as you explore the wildlands, huts and more advanced structures. These can be helpful to your successors as each character dies.

You have access to a variety of weapons and spells. You can find armor (which is necessary to stay alive) and gold (which you can use for weapons, spells and armor).

Odyssey feels like the Titanic and the game play seems to be about rearranging the deck chairs. After you have learned the basics of moving, taking and attacking, that's pretty much the whole game, regardless of the nature of the opponent, the color of the magic or the weapon chosen.

Meet. Kill. Look. Take. Meet. Kill.

There is a pattern, and the pattern has grown beyond what Odyssey offers.

Try to say something nice

I hate doing a bad review, but Odyssey from MacSoft is about ten years too late, which would not be bad if it had something unique to offer. From a programming standpoint, it runs smoothly and did not cause my systems to crash (which means it was tried with a trusty old '030 Mac and a PowerMac). The design is clear and they got about as much as you can get from a 2D scrolling game.

What is the problem?

The box touts a "Sophisticated Artificial Intelligence" to allow non-player characters to live lives. As far as I could tell, the lives consisted of hunting me down to kill me, or to run away as soon as I approach.

The "Mac-Like" interface (why "Mac-*Like*"—isn't this supposed to run on a Mac and isn't it published by MacSoft?) seems like a flashback to the LC II. It works, and it works smoothly. I can say much the same about MacWrite for doing a novel.

There is also "two hours of STEREO MUSIC" (their capitals, not mine), but it is game music. I don't buy games for the music, I buy music CDs for music. And I buy games for a game.

The rest of the blurbs on the box are literally true: I can indeed hit and kill with the 40 weapons, and the psionic abilities can be used against those I encounter.

The nice thing is the game play is not distracting, so I can watch the new season on television or do homework while the game goes on.

Conclusion

If you get Odyssey as a gift, smile, say "thank you" and try to mention it to the person who gave it to you from time to time with a glow of affection and appreciation. They meant well and can't be penalized because they are not as well informed about computers as you are.

If you are shopping for something that will not be too distracting—so you are free to watch cable or do homework while the game progresses, this might be a good choice.

But if you want to play a computer role playing game for fun, adventure and stimulation, and have the power to say "no," exercise that option with Odyssey. Buy a deck of cards or buy some dice for an old-style "pencil, paper, and dice" game.

Or, buy a real computer role playing game.

Odyssey
Minimum System Requirements
Computer: 68020, but a 68040 or PowerMac is recommended, with Sound Manager 3.0 or above
Memory: 3Mb RAM
System: 7.1 or above, QuickTime 2.1, color monitor and CD ROM drive
Hard Drive: 11Mb free space
Price: I suspect it will show up in discount bins soon

MacSoft
(612) 559-5301

Joseph Steven Coleman is a writer, director and designer who lives in the Bay area with far too many books. He has been a member of BMUG since 1989. There will be a brief pause while you say "so what?"

Electronic Highway Robbery

An Artist's Guide to Copyrights in the Digital Era

by Don Peterson

This is an excellent overview of copyright law in the digital era. The author, a computer illustrator and graphic designer, writes in a readable style, and presents a lot of useful information concisely (in the manner of other similarly well written, concise computer-related books published by Peachpit Press).

In the foreword, Brad Bunnin, a lawyer who contributed to the book, writes that "This book is for the artist who does not want to become a victim of, or an unwilling accessory to, electronic highway robbery." I would agree that the book would be of most interest to those who create and sell their computer-based works, but I think it is also a useful guide for non-artists, namely, any Web surfer among us who has wondered about the propriety of copying the digital works of others. While copyright infringement, inadvertent or not, is easier than ever in this digital era, and can be harder to detect, unauthorized use is still copyright infringement.

Copyright law is complicated, and the author makes it clear that the book is meant to be a general reference and not a definitive law textbook. Attorney Bunnin writes, candidly, that copyright laws were written by lawyers, so that artists would find it necessary to consult a lawyer frequently. The book is meant to obviate the need for such consultations.

The first section explains the basics, including:

- Some historical context, such as the tradition of students painting copies of famous paintings in major museums: Marcel Duchamp's "Readymades," "Rectifications," and "Rectified Readymades"; the tradition of the homage (in which the artist titles a work done in the style of another artist's work—something like "Title of My Painting, after Van Gogh"); the use of copied elements in Pop Art; and the use of images pieced together in advertising "comps".
- The "nuts and bolts": What is intellectual property? What can be protected by copyright, and what is not protected? What are the rights of the creator of the work? What, exactly, is "copying" in the computer realm? What about creating links on Web pages—could that be considered "copying"? How do you get copyright protection? What are the "moral rights" for the protection of art works as covered by the Berne Convention and the Visual Artist Rights Act?
- When copying is OK (namely, in cases where things lack or have lost copyright protection, and when permitted under the "fair use" exception) and how to get permission to use copyrighted stuff.
- What to do if your image has been infringedly (Hey, I think I invented a new word! Maybe I can copyright it...) copied.

"The practice of copying in the arts is a long one. But never before has copying been so newsworthy (because):

Digital images can travel very great distances from their originators, leaving few tracks.

Digitally transmitted images can produce an excellent "file" that may be effectively reproduced and sold.

Digital images are much easier to change, in dramatic ways, than hard copy."

In summary, this first section of the book has a ton of useful information packed into about 70 pages.

The next section of the book is a short one that presents the views of various parties to the copyright debate: the artist, the art director, the government, the technological visionaries (the "technocentrists"), etc. The author points out that Stewart Brand's famous phrase, "Information wants to be free" was followed immediately in the book in which it appeared, by the sentence, "Information also wants to be expensive." Throw in a few other aphorisms—"Information is cheap. Art is dear." (quoting the author, who is taking the position that digital art is more precious than mere "information," as it involves the heart and soul of its creator); "I want free information" (suggested as the real meaning of "Information wants to be free" to some people); and "Just because it's easy doesn't mean it's right" (copying, that is)—and you capture some of the divergence of views, discussed at more length in this book.

There is a short section discussing three case studies involving copyright infringement. Included are photos of original works, and the works that were alleged to have infringed upon them. I found the case studies and the photos instructional—a picture is worth a thousand words—and I wouldn't have minded a few more examples illustrating what is and isn't considered "copying" in a legal sense.

The last section, "Where Do We Go From Here?" reviews several of the technological solutions for protecting copyrighted works. These include: using the "read-only" options of Portable Document Programs like Adobe Acrobat; using digital watermarks; using encryption; and perhaps in the future, using intelligent agents to track unauthorized downloading of copyrighted material. There is discussion of the possible merits of an artist making a portion of work freely available on the Net. In Chapter 18 of this section, there is a very good section entitled "Contract Watch: Artists' Reps Top Ten Tips" with very valuable advice for artists and artists reps regarding contractual issues.

I liked the short sidebars in various places throughout the book entitled "On The Other Hand." These grew from journal-style thoughts the author wrote down alongside the body of the text as she wrote, and as she explains, they reflect largely what an artist would be thinking while reading a book about copyright law. They explore "the ambiguities, the gray areas, the subtleties which cannot be covered by a flat statement of law, section, and footnote."

Throughout the book there are a number of bibliographic references to related books, magazines, newsletters, online resources, and organizations.

One of the Appendices, entitled "To-Do List For Artists," discusses 24 tips and bits of practical advice to keep in mind. It is a good synopsis of what to do and what not to do.

For the most part, the subject matter is discussed in terms of graphic art, such as computer illustrations or photo-based images. If your interests are more in the area of, say, digital music, you may be disappointed that there are only brief references in the book to this form of digital art. (Also, see the footnote below.) At the same time, though, most of the information in the book applies to all forms of copyrightable digital creations.

There are some interesting opinions mixed in with the factual information. As an artist, the author naturally looks at things from an artist's perspective. The current widespread reuse of copied work is a "fad," she believes. When this fad passes, the current debate will cool down, and we will return to an environment of more individualism and uniqueness among artists. She refers to "the crutch of appropriation." She advises simply, "Be an original."

Regardless of your own views on such matters, this is a clear, succinct guide to copyrights in the digital era. I recommend it.

"Three requirements to qualify for copyright protection:

It must be original.
It must be creative.
It must be fixed in a tangible medium."

If you are interested in copyright as it applies to written works, there is a short article called "Authors Rights—On Getting Paid in the Age of Digital Reproduction," by Anna Couey, in *Microtimes* September 16, 1996, which mentions The Authors Registry, a nonprofit, centralized author directory that deals with the distribution of royalties, similar to ASCAP's (American Society of Composers, Authors, and Publishers) functions with respect to royalties for musical works. The Web site for The Authors Registry is http://www.webcom.com/registry. Two other related Web sites mentioned are: American Society of Journalists and Authors, http://www.asja.org/, and National Writers Union, http://www.igc.org/nwu/.

Electronic Highway Robbery
by Mary E. Carter
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Peachpit Press
2414 Sixth Street
Berkeley, CA 94710
Phone: 510/548-4393
http://www.peachpit.com

Don Peterson, what with that surname, may well be descended from a fierce band of Viking marauders. On the other hand, he has been described more than once as a "mellow dude," and he has never roved in quest of plunder. Or wanted to. So.

Computer Trainer's Personal Training Guide

by Tom Vernon

Those of us who earn our living by the light of the computer screen face a constant challenge, that of keeping up with the new technology. It's an even more daunting task for the computer trainer, who has to be further ahead of the curve than the rest of us.

If your work involves computers, giving presentations, adult education, or technical training, sage advice is available in *The Computer Trainer's Personal Training Guide.* Written by a group of 12 training experts, this 300-page text is really a workbook organized by topic. Each chapter is penned by an expert in the field. Between its covers is some of the best practical advice on training I've seen in one place.

The first part introduces a would-be trainer to the basics. It answers such questions as: what is the state of the training profession in the 90s, how does an otherwise-normal person become a computer trainer, and, what do we really know about adult learners anyway?

Pre- and post-training assessments are covered in the second part of this book. Too many training projects fall short because the needs of the learners aren't assessed up front. One chapter tells readers how to define training needs in terms of business problems and solutions. Through an information-gathering process you'll glean an accurate picture of the need and a strategy for handling the project.

But don't rush off and start developing courses, at least not yet. The next step, and the next chapter, tell how to conduct a skills assessment. Through the use of tools such as surveys, tests, prerequisites, and job-skill lists, you'll be able to discern what participants expect to learn, and what they need to learn. These are not necessarily the same thing.

The book also discusses assessment. After the class has ended, how do you determine if your training has been a success? There has to be more to it than counting the number of smiling faces leaving your classroom and hoping they're all sincere. There are more scientific ways of ascertaining if your training was valuable and worthwhile. Tools such as telephone surveys, evaluation forms, and followup with supervisors are discussed.

Those of us who earn our living by the light of the computer screen face a constant challenge, that of keeping up with the new technology. It's an even more daunting task for the computer trainer, who has to be further ahead of the curve than the rest of us.

Of course, the heart of the matter is what goes on in the classroom, and that's the topic for the third section of the book. Once you've got pre-training and skills assessment under your belt, it's time to develop the course. Many factors go into the creation of an instructionally-sound course, which is the subject for one chapter. First and foremost, you must be a master of the subject matter yourself. This means that the computer trainer must be a self-directed learner, for seldom will you have the luxury of hiring an outside expert.

Instructional design is introduced as a systematic approach to course development. Whole books have been written on this subject, but this section gives a nice overview. From the data gathered in the skills assessment, you define the course objectives, and develop a content outline. From there, information can be broken down into modules and the timing can be worked out. Other issues this section discusses include strategies and teaching methods, and customizing off-the-shelf materials.

The rapid pace of change in computers and technology virtually guarantees that classroom training by itself will be increasingly inadequate. One chapter devotes itself to ways of augmenting the classroom training with outside media. Supplemental material can come via Electronic Performance Support Systems (EPSS), distance learning, directed study, and apprenticeship/internship arrangements. Material is presented on

relating these external materials to classroom study, as well as ways to get management to buy into this now-unorthodox means of instruction. For more information, there is a list of Internet resources which would be of interest to trainers seeking to learn more about these extra-classroom activities.

In a book that is filled with useful material, the chapter on distance learning via the World Wide Web was my favorite. Author Bernie Dodge does a splendid job of presenting the topic. First, he differentiates between knowledge transfer, the traditional method of learning, and constructivism, where learners take charge of their own learning and deal with complexity up front. Teaching a course in the Web may be a new experience for you, so a four-step transitional process is recommended, starting with using the Web to distribute your course materials, and ending up with a full-fledged distance learning endeavor. The chapter ends with some paper-based and electronic resources of interest to those involved with electronic education.

Information is also presented on certifying trainers, which is quite a hot topic in the field. The days of mom and pop computer learning centers are quickly coming to a close. One chapter lists who's doing the certifying, and what their requirements are.

Finally, this book has an appendix that includes sample checklists, surveys, and questionnaires you might want to use as templates for your own forms. Using these will enable you to gather all the information you need from participants before, during, and after the training event.

About the only shortcoming of this publication is the rather anemic list of references that is given. Some of the authors had several print and electronic citations, others had none. A more consistent way of handling supplemental reading materials would have been nice.

Although obviously directed at computer trainers, this book would also be of interest to anyone involved in adult education, technology instruction, or distance learning via the World Wide Web. The wealth of personal knowledge shared by some of the top computer trainers in the business is what makes this book worthwhile. Supplementing the authors' material with your own anecdotes and additional information, as suggested in the introduction, can only add to its value.

The Computer Trainer's Personal Training Guide
Que E & T
312 pages
$49.99

Tom Vernon is completing his Ph.D in education at U. of Penn in Philadelphia. In his nonexistent spare time, he reviews computer programs, CD-ROMs, and books for various publications.

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"...And End Up With Some Impressive Graphics"

A review of Start with a scan

by Eric Predoehl

I've got a lot of books on my book shelves. Some of them I've absorbed into my consciousness, and many others are still waiting to be read. I have books that I read for pleasure, and I have books that I read for important information. As my time is valuable, it's important that any reference guides I read contain the essential data for that given topic. If any of these reference guides happen to be entertaining as well, then the chances of being fully read within the near future are greatly amplified.

One reference guide that captured my attention immediately was a new book from Peachpit Press entitled *Start with a Scan*. This book was written by Janet Ashford and John Odam, two regular contributors to the magazine *Step-by-Step Electronic Design*, as well as other publications such as *Step-by-Step Graphics*, *Print*, *MacUser*, and *Before & After*. *Start with a Scan* is a wealth of information for anyone interested in developing impressive graphic images on the computer. Written to appeal to the novice and the power user alike, this book is an intriguing exploration of design techniques, tying the creative process with a solid technical backbone. Luckily, the authors appear to be talented graphic artists, and the book is filled with very colorful, lively images that are nice to look at.

Broken up into thirteen chapters, each with various subheadings, the book deals with such topics as Getting Started, Working with Scanners, Technical Considerations, Editing Scanned Images, Working with Printed Clip Art, Applying Artists' Techniques, Creating Textures and Backgrounds, Working with Scanned Photographs, Transforming Photos into Graphics, Creating Type Treatments, Scanning Real Objects, Creating 3-D Illustrations, and Multimedia Projects.

As my time is valuable, it's important that any reference guides I read contain the essential data for that given topic.

The information is concisely organized in a rational manner, and the design of the book itself accentuates the topic without awkward irrelevancies. The chapter "Working with Scanners," for example, is a solid overview of scanning technologies with a design reminiscent of the groundbreaking *How Things Work* book series. It explains the processes in a very clear, non-condescending manner, with detailed illustrations. Loaded with some solid information, this is the type of book that works best when digested slowly, as there is an abundance of ideas that would be difficult to absorb in one sitting.

While it is implied that Adobe Photoshop is the main tool of choice for serious digital image manipulation, followed by a PostScript drawing program (such as Macromedia FreeHand or Adobe Illustrator), an autotracing program (such as Adobe Streamline), and a page layout program (QuarkXPress or Adobe PageMaker), the book is designed to be useful for a variety of different software programs and computers, and describes many procedures common to certain types of software.

One tidbit I found particularly interesting, was a formula in the "Technical Considerations" chapter for calculating optimal resolution with halftone outputs. In order to figure this out, one must consider the four main factors affecting image quality:

- The number of pixels per inch in the scan (ppi)
- The number of lines per inch in the halftone (lpi)
- The resolution of the imagesetter (dpi)
- The scale of the final image (%)

As both Ashford and Odam are quite proficient in the art of scans, this is where their expertise comes in handy:

> The process of converting square pixels into round dots requires that there be roughly two pixels of information for every printed halftone dot, so it's usually recommended that the pixels per inch (ppi) of the scan be twice the lines of inch of the halftone (lpi). We have

> found, however, that a ratio of 1.67 ppi/lpi gives optimal resolution. So, for example, if your image will be printed with a 133 lpi screen, it should be scanned at 222 ppi (133 x 1.67).

The authors go on to mention that practically every photographic image in the book, printed at 150 lpi resolution, was originally scanned at 250 ppi, following the formula of exactly 1.67 ppi/lpi. I might add that every picture looks great!

Another consideration that intrigued me was a sidebar in the "Editing Scanned Images" chapter concerning the factor of "dot gain." The book defined dot gain as follows:

> Dot gain is what happens when the ink in a halftone dot spreads out when it's printed on paper. The ink will spread out only slightly on coated paper, more on uncoated paper, and even more on newsprint. Unfortunately, this means that even though you can adjust your image to look terrific on screen, it will probably print too dark, shadow detail will be lost, and midtones will also look muddy.

The book goes on to address proper techniques for adjusting for such disparities, giving specific details on which controls would be the best choices for such adjustments, and the types of questions one should ask the printer to obtain optimal quality.

Many technical problems are given solutions in this book. Various techniques are demonstrated to remove distracting backgrounds. Low-lit, soft-focus photographs are enhanced with a multiple set of tools. Moiré patterns are removed from scans of halftone images. Other dilemmas are discussed, and solid remedies are offered to answer these situations.

While this book provides some excellent technical information, I found it far more valuable as an idea book. There are some great examples of merging different media together. Copyright laws are discussed, and beautiful public domain images are removed from antique publications for a rejuvenated new existence in modern designs. With a little imagination and the ability to manipulate these digital instruments, a small portion of the original images can be transformed into an exciting element of a revitalized graphic layout. Black and white engravings are amended with color tints, gradations of different hues, and superimpositions of photographs to become eye-catching displays for otherwise plain looking editorial pages. Simple graphic elements are rotated, skewed, flopped, and repeated to create tantalizing patterns. Silhouettes are filled with photographic backgrounds to create logos, billboards, and labels. A small set of scratchy imprints from an envelope are salvaged from the trashcan, enlarged and recolored to create an impressionistic backdrop for the cover of a corporate publication. Texture is celebrated as a versatile graphic element, available from a wide variety of sources, easily manipulated to become something else entirely.

This book provides a great springboard for anyone out to make great art on the computer.

One of my favorite sections is a description of how to scan a fish in the chapter entitled "Scanning Real Objects." Placing a fish carcass directly onto a scanner can provide some interesting results, as noted in this passage:

> This splendid striped bass was bagged on a hazardous expedition to the seafood counter of the local market. The tendency of one-pass scanners to generate spurious colors in metallic objects works to advantage here, producing an intriguing iridescent effect.

Again, the color reproductions in this book are superb! Other real objects scanned for demonstration purposes in this chapter include crayons, leaves, plastic dolls, computer cables, and even human body parts! As with all material in this book, it is all quite tastefully designed, with nothing remotely considered "naughty."

There is very little "filler" in this book, and every image in the book relates directly to the subject at hand. This book is designed for artists, by artists, and is a gourmet course for those who love beautiful graphics. This is the kind of computer reference manual that really elevates the standards for similar booklets. Similar to *Imaging Essentials* and *Design Essentials*, two semi-standard graphic design reference guides from Adobe Press, this book provides a great springboard for anyone out to make great art on the computer.

Start With A Scan: A Guide to Transforming Scanned Photos and Objects Into High Quality Art
by Janet Ashford and John Odam
138 pages
$34.95 U.S., $48.00 Canada
Peachpit Press, 1996
ISBN #0-201-88456-9

Eric Predoehl is a freelance media professional, specializing in video production. He has gone through four different Macintoshes in the past nine years, and is currently using a Quadra 660AV, which he loves. His Web page is at: http://www.netuser.com/~erp/.

Multimedia Guidebooks:

Two for the Right Brain

by Tom Vernon

The publishing market is flooded with books on how to use virtual ly every piece of software in existence. They succeed to varying degrees in imparting sufficient knowledge to master the program in question, but very few books attempt to teach the use of computer technology in the creative process. That's why I was delighted with two recent arrivals that tackle, head on, the task of explaining some of the activities one goes through when producing interactive products.

Interactivity by Design: Creating & Communicating with New Media

Interactivity by Design: Creating & Communicating with New Media by Ray Kristof and Amy Satran wraps a rational, left brain framework around the seemingly-nebulous process of creating interactive materials. If you've floundered through media projects, ending up behind schedule and over budget, muttering that there has to be a better way, here it is.

The process outlined in this book may be applied to all types of electronic media: Web pages, CD-ROMs, or electronic publishing. No matter what your end product will be, there are three steps in the process: Information Design, which results in the creation of a flowchart; Interaction Design, where a storyboard is created; and finally, Presentation Design, which ends up with a prototype. The book's three sections are organized around these topics.

Each part begins with a discussion of critical tasks. For Information Design these are: defining the goals for the product, what the audience wants to do, deciding how the product will reach its audience, choosing an authoring tool, and producing a content flowchart.

Having done that, you can move on to the essentials of interaction design: creating guidance and navigation systems, defining what happens in every screen, and designing controls for interaction. Finally, Presentation Design must include: a definition of the visual theme and style, designing a system of screen layouts, creating structural and control elements for each screen, and integrating all media elements.

As the prototype goes together, you should get some idea if the flowchart, storyboard and Presentation Design work as they were intended to. As the kinks are smoothed out, things like links that go nowhere, ambiguous choices, or a confusing part of the interface are taken care of. This is where hiring (or being) an experienced designer pays off, as intelligent trade-offs between design and engineering are made.

Once you start a project, you'll probably need a lot more material than you have the time or money to generate in-house. That's why the authors have included a resource guide at the end of *Interactivity by Design.* In it are the names, addresses, and phone numbers for several clip media providers, stock agencies, media services, and media directories.

How does one gain the necessary wisdom to write a book like this? With lots of practice. The authors are co-founders of Ignition, a San Francisco-based studio for information design. They have been responsible for top-to-bottom creation of many communication products for use in education, business, and the arts. The authors' CD-ROM *Amnesty Interactive* has won numerous awards for its outstanding multimedia interface design.

You'd expect a design book put out by Adobe Press to be a masterful application of color, text, graphics, and layout. This 130-page offering does not disappoint. It's printed on heavy-grade glossy paper that you'll not only enjoy reading, but enjoy thumbing through repeatedly for ideas. Although the $40 price tag is a bit steep for a book this size, the quality of the production and uniqueness of its message make it essential reading for anyone involved in the creation of interactive media products.

As the kinks are smoothed out, things like links that go nowhere, ambiguous choices, or a confusing part of the interface are taken care of. This is where hiring (or being) an experienced designer pays off, as intelligent trade-offs between design and engineering are made.

The Multimedia Scriptwriting Workshop

Our second offering takes you through the steps of writing a script for interactive media. *The Multimedia Scriptwriting Workshop* by screenwriter, filmmaker and interactive writer Douglas J. Varchol is a gem that will send you off looking for creative ideas in places and ways you never would have thought. Among the many sources of inspiration that Varchol draws upon: children's stories by Hans Christian Andersen, a novel by Herman Hesse, Ray Bradbury's essays on the creative process, and the writings of Joseph Campbell.

The 300 pages of *Workshop* are divided into three parts. The first section introduces the topic of multimedia with a history and an overview. It continues with a discussion of theories of interactive media, development, marketing, and distribution channels for interactive products. There's also some sound advice on how to protect your intellectual property.

The second section is on learning the basics. You will discover how to do market research to determine the need for your product, and how to put together a creative team to work with. Once you've got a concept and a team, you'll want to pitch your idea to developers and money types. Advice on how to do that is here, along with a checklist of essential pitch documents.

One chapter is devoted to interactive writing. Joseph Campbell's famed Hero's Journey is presented as a model for a story. Varchol goes on to break down the linear story line and expound on chaos theory as a model for the branching aspect of multimedia design.

The last section contains detailed deconstructions for three interactive CD-ROMs that are currently on the market: Psychic Detective; Pyramid: Challenge of the Pharaoh's Dream; and Wing Commander IV—The Price of Freedom. All of these products are highly successful, yet they are very different from one another. Reading this section may dispel the myth that there is a universal scriptwriting model. Each analysis includes script samples, screen shots, charts, diagrams, analysis of music and sound, as well as much more.

There's also a wealth of information squirreled away in the three appendices at the end of this book. The first has a complete proposal and demo script for an interactive game. You may want to use this as a template for your own works. The next appendix is a collection of miscellaneous resources. There is an inventory of some of the best books from Varchol's recommended reading list, a compendium of multimedia resources, including phone, fax, and email addresses, and also a short description of the Writers Guild of America website. This website includes a sample contract for interactive media.

Finally, the CD-ROM included with the book contains a demo version of John Truby's StoryLine Pro, a screenplay program that was used to develop the scripts for Sleepless in Seattle and Outbreak. There are 29 story examples that you can plug into the program, including Star Wars, The Verdict, and Joseph Conrad's Heart of Darkness. Both Mac and PC versions of Truby's brainchild are included.

Varchol is clearly someone who has read across many disciplines. He is able to draw upon this wealth of material to create a first rate text on producing scripts for multimedia. His informal, let-it-all-hang-out writing style is perfect for this type of book. *The Multimedia Scriptwriting Workshop* is published by Sybex, and lists for $29.99.

Reading these two books back to back is a study in contrasts. Kristof and Satran preach the value of imposing structure on the seemingly-chaotic act of putting an interactive product together. Varchol urges his readers to abandon the traditional structure of story, and move towards chaos theory as a paradigm for interactive writing. Yet both advocate a change from the standard way of doing things, and that is what makes these books valuable.

There's also some sound advice on how to protect your intellectual property.

Tom Vernon is completing his Ph.D. in education at UPenn in Philadelphia. In his nonexistent spare time, he reviews computer programs, CD-ROMs, and books for various publications.

Interactivity by Design: Creating & Communicating with New Media
by Ray Kristof and Amy Satran
Adobe Press
131 pages
$40.00
ISBN: 1-56830-221-5

The Multimedia Scriptwriting Workshop
by Douglas J. Varchol
Sybex
312 pages
$29.99.
ISBN: 0-7821-1839-9

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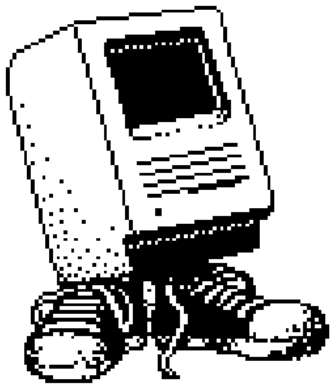
Mac Bible Update

Peachpit Releases New Revised Bible: *The Macintosh Bible*, 6th Edition

by Thomas Benner

Peachpit Press' new sixth edition of *The Macintosh Bible* continues the book's 10-year tradition of providing a friendly easy-to-follow guide to the Macintosh hardware and software universe. With over a million copies in print, it is the most popular Mac book of all time. Within are basic concepts, software reviews, and loads of useful tips on everything from choosing the right Mac to launching yourself into cyberspace.



Edited by Jeremy Judson, along with an outstanding team of experienced Macintosh industry writers, this book is a joint effort by many people. In all, The Macintosh Bible has thirteen editors and more than fifty contributors, drawing on "the best of the best" in the Macintosh community. The staff compiled tips and product reviews from experts in every field. It's like having your own committee of computer gurus standing ready.

The staff compiled tips and product reviews from experts in every field. It's like having your own committee of computer gurus standing ready.

Giving a meaningful review of such a monumental book is not an easy task for one person. Nevertheless, here are my two cents. Generally, it is an impressive update. The previous edition (reviewed by Bob Thyken in the Spring 1995 BMUG Newsletter) was a let down. The layout was dull, the text fuzzy, the first few chapters poorly written, and the content decidedly lacking in Internet-related topics. The current layout, particularly the elements and design, has remained pretty much the same. Nevertheless, a few changes—specifically a new font and a new beach bum icon for hot tips—add more visual enjoyment. More importantly, the text of the new version no longer feels lightweight and has more character. Personal touches include an introduction with signatures at the end of each editor's biography; there are also occasional highlighted sections featuring authors' answers to questions such as, "What programs do you use all the time?", "What does multimedia mean to you?" and "What makes a Mac a Mac?"

New sections include a perceptive chapter about how to equip a Mac-based home office, an expanded troubleshooting section, and a chapter about the Internet. The new Internet chapter includes general pointers for how to get online, rudimentary instructions for creating a Web page, and excellent suggestions for client applications to use as you venture online. Readers get the latest on fonts, word processing, spreadsheets, graphics, desktop publishing, databases, communications, utilities, multimedia, and games—and benefit from hundreds of practical tips.

The original editor, Arthur Naiman, had a breezy, humorous style that I loved, although some people found it to be distracting and annoying. The book reflected his control of content and style. I often found myself smiling as I learned difficult computer concepts. It was like being on laughing gas while having my teeth pulled. Arthur knew how to dull the pain of learning computers. I probably will never forget his railing and ranting against "expertosis." Arthur has been gone for several editions now. The first section on Macintosh basics especially suffers from his absence, and the book is no longer the "indispensable guide for

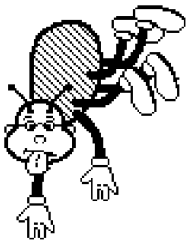
beginners" the publishers profess it to be. Like many computer books, this edition sometimes gets bogged down in the obscure and largely useless. Ironically, it is beginning to suffer from the very "expertosis" Arthur warned us against in the first edition. It has become too much of an anthology and needs a more consistent style. It lacks the flow, and to a degree focus, which Naiman managed to present.

Elsewhere, however, *The Macintosh Bible* continues to educate with the uninhibited, slightly irreverent tone of earlier editions. For instance, the section about WordPerfect refers to the release of "Microsoft Word 6.0 for Windows for the Mac." Another section reads, "Let me be blunt. There's not a good grammar checker available anywhere yet."

In attempting to judge a computer book, I like to think of possible questions or problems I would have. Then, I check the book's index to see how quickly I can find the answers I need. For example, I have heard of a new spreadsheet program called *Keep It Simple Spreadsheet,* or KISS. Neither was in the index. Only by finding the section on spreadsheets, did I find the program and learn its full name, *Let's Keep It Simple Spreadsheet*. I think it is tragic that the index lacks an entry for *Let's KISS*.

Pros:

- Great illustrations (page 14 "Key Symbols in Menus," page 94 "Inside the Extensions Folder")
- Sporadic highlighted sections featuring authors' answers to questions such as, "What programs do you use all the time?", "What does multimedia mean to you?" and "What makes a Mac a Mac?"
- Useful World Wide Web pages (e.g., pages 204–205)
- Good troubleshooting section (e.g., "Unreadable Floppy Disks" on page 237 is very useful in dealing with damaged floppies.)
- Nice sections of Chapter 17 on Digital Audio and MIDI, according to Peter Adler, who coordinates BMUG's Sound & Music SIG
- Don Crabb's new contribution, "The Perfect Mac Home Office" (chapter 27)
- Very reasonable price. For $29.95 it provides the maximum "bang for the buck."



Cons:

- I know I should not judge a book by its cheap, flimsy paper cover. Yet the thin, frail cover troubles me. I often take this book with me when I travel and have learned to appreciate the heavier cover of past editions.
- Missing are several helpful icons of past editions, especially "Mostly for Beginners."
- The book seems to lack the "desktop published on a Mac" feel that the original tried to emulate.
- The first few chapters (Part I), aimed at beginners, are very weak and difficult to read. *UGHH!* In *The Macintosh Bible* forum on America Online, Randy Singer fills in for other authors who are often too busy to answer questions from readers. With his expertise, experience with past *Macintosh Bible* editions, and commitment to supporting the readers, Randy Singer should have been used as a chapter editor in Part I. Like many other readers, I look forward to more contributions from Randy in the future.
- It tends to get bogged down in obscure and largely useless details.
- It lacks much of the humor which made earlier editions so popular.
- It is too much of an anthology. It needs a more consistent style. It lacks the flow and, to a degree, clear focus of earlier editions. All authors should read each other's work and comment on it.
- The index is woefully inadequate.

Annoying Typos, Inaccuracies, Contradictions, and Missing Information:

The word *Bible* implies an authoritative, official, all encompassing book of knowledge. More than a mere computer reference work, this is to be the "holy scripture" for using the Macintosh. Yet, despite going through multiple stages of editing and typesetting, it's far from perfect. Numerous typos, inaccuracies, and contradictions, as well as missing information detract from its usefulness.

- Since the first edition, BMUG has contributed several authors including Randy Singer, Tim Holmes, Scott Beamer, and Derrick Schneider. David Hauer's name is misspelled in the index on page 167.
- Of course, it is understood that in such a huge book with so many editors, there are going to be contradictions. For example, concerning the Memory control panel:

  On page 133, it says to set the cache to 92–128k, with 256k argued by some. However, it says any more than that slows performance.

  Yet, back on page 158, in the sidebar titled "Setting the Disk Cache," it says to set 32k for each meg of RAM. Well, I have 24 megs of RAM and that would mean I should set the cache to 768k.

  So, people, which part of your book is right?

Interestingly, Randy Singer responds:

> Neither, probably. The RAM cache no longer works as it once did. Using a larger cache under System 7.5 won't slow down your Mac, but beyond a certain point it probably won't help either. I believe that SpeedDoubler confuses the issue even more. I am led to believe (but haven't verified) that using a larger cache while using SD will make things even faster.

- Page 126, "The industry doesn't see any dramatic decline or increase in the future of RAM prices over the next three years, unlike most other sys

tem components where prices seem to be eternally dropping." This statement is a glaring error. The lead time for writing this book is almost a year. Predictions about a commodity market are difficult. Nevertheless, the book is just hitting store shelves, and already some of the information is not current. Perhaps the book should only include immutable/general information. The stuff that is subject to change could be included in new expanded updates, on CD-ROM, or on a Web site.

- Page 107, the section suffers from verbiage and is unclear. Perhaps the comment "if you are not on a network, set recent servers to zero" would clarify the intent of the paragraph.
- Page 107, "If you move or rename the original item, the alias still finds it." I've seen too many "the original cannot be found" messages to believe this. Whether the alias can find It depends on where you have moved the original.
- Page 188, in "Regarding non-English Keyboards" it says, "You can order both the keyboard and the system software through Apple dealers." Total nonsense! I've been trying to get a Hebrew keyboard for five years so that I can more easily use my Near Eastern language fonts. Apple continues to tell me that I can only buy this keyboard from a dealer in Israel (which I admit are Apple dealers.) But how does one order through them?
- Page 201 "Surge Protectors." This section makes no mention of the essential warranties available from companies such as Panamax.
- Page 204 "Get Help from Technical Support" should mention the Shareware program Vendor DA which lists the phone numbers (main, sales, fax, BBS, and tech support) for most hardware and software vendors.
- Chapter 10 "Personal & Business Management," with sections on "Managing Your Finances" and "More Business Software," has no information on QuickBooks Pro (my personal favorite). Although, later on page 848, Don Crabb informs us, "This one is so much better than its competitors it almost hurts. Even fiscal boneheads like us can fly with QuickBooks."
- BMUG is one of the most valuable resources for Macintosh users. However, the index entry only leads to contact information given in an appendix and brief mention of the BMUG Newsletter. In my opinion, any book that fails to provide a description of the many services BMUG offers the Macintosh community falls short of the criteria necessary for the title *The Macintosh Bible*. I admit I was amused to see the picture of Planet BMUG on page 710—especially because it shows the announcement of the new BMUG Claris SIG (which I coordinate) on February 6, 1996 (my birthday!) Oddly enough this description of Planet BMUG and another brief BMUG description (on page 872) are missing from the Index entry for BMUG—*oops!*
- Boston Computer Society is recommended on page 872. However, it no longer exists. In all fairness to the editors, they may not have been aware of its demise.

Ideal Readers:

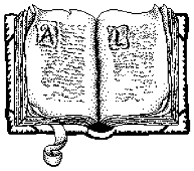
The Macintosh Bible, as always, acts as an excellent general reference, and is a particularly useful resource for four categories of readers:

(1) Relatively novice Macintosh users (not absolute beginners, but not quite "intermediate" users either) who aren't intimidated by a 1000-page book.

(2.) Those who need the specifications for older Macintosh hardware, or who desire a high degree of familiarity with the pieces of Apple software that could potentially end up in the System Folder (and what to do about them).

(3.) Macintosh zealots who need a good overview of what to expect and seek out from different hardware and software categories, such as monitors, modems, word processors, and databases.

(4.) Anyone who wants to know what hardware or software to buy, how to find it, and how to use it.



Conclusion

Overall, the 6th edition is a good update. Most computer books and manuals are not user-friendly or very readable. In comparison, despite its many problems, *The Macintosh Bible* is one of the most helpful books you will find and will probably again be a best seller because of its usefulness, reputation, and excellent value.

Unfortunately, *The Macintosh Bible* is becoming too much like other large Mac books (*Mac Secrets*, *Encycopedia Macintosh*, *Using the Macintosh*, *The Complete Mac Handbook*, *Everything You Wanted to Know About the Mac*, etc.). It's losing its readability. More humor needs to be incorporated. Like the previous edition, it is still too much of an anthology, lacking a necessary interchange between the authors and a clear focus. Perhaps the authors could read each other's work and comment on it..

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Rating: (out of a possible five apples)

Note: A CD-ROM did not come with this review edition.

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Visual Quickstart Guide: Illustrator 6 for Macintosh

by Scott Rothstein

Illustrator 6 is a fairly high-end application; it's relatively complex, and, with a suggested retail price of $595, not one to be purchased by novices who simply wish to dabble. As a result, I had a preconceived skepticism of the *Visual Quickstart Guide to Illustrator*, because based upon my (admittedly limited) experience with the *Quickstart* series, they seemed to be aimed at Mac newbies who first need instructions on how to use a Mac.

I was pleasantly surprised. The *Visual Quickstart Guide to Illustrator* (the *Guide*) appears to be focused on the beginning to intermediate user—in other words, those who have just installed the application (perhaps an art student cramming to learn Illustrator) to the self-taught who are familiar with the application but would like to fill in gaps in their knowledge. This *Guide* assumes a very basic familiarity with the Mac, and starts with a quick how-to for launching Illustrator and opening and saving files. For some reason, it appears that an assumption was made that the reader would be more familiar with the graphic arts than with a Mac: the book explains how to open and save files, but not what process colors are.

This book will not turn you into a graphic artist; it is not the objective of the *Guide* to teach the techniques necessary to create advanced graphic effects. It does, however, clearly show you how the different tools and menu commands in Illustrator are used. And that is what this book is about: the *Guide* will make it practical for you to teach yourself the subtleties of Illustrator by really practicing with it, not just blindly trying to figure out what those myriad tools actually do, and it does so more concisely than the Illustrator manual. The *Guide* does not purport to be more than its title suggests: a "quickstart guide." If you need more in-depth information to enable you to create advanced designs, read a book such as Deke McClelland's *Illustrator 6.*

I do have one minor quibble about the layout of the book. The decision to include some of the many accompanying illustrations seems a bit questionable. The book repeatedly shows you how to choose menu commands—for example, one figure shows the Object menu being pulled down and the Custom Color... item highlighted; I thought this unnecessary. The step-by-step instructions already said "Choose Object > Custom Color." How to choose menu items should be apparent to most users, and the book clearly shows the location of the menu commands.

More space could have been devoted to graphics, for explaining advanced tips which were otherwise treated in passing. Often, for example, after a tool or command is explained, the book gives a few bulleted paragraphs which give further insights into the item. While these tips are helpful, they are more deserving of illustration than showing how to select commands from menus.

This book has found a place on my shelf. I'm a pretty adept Illustrator user, but, especially as a result of my being self-taught, I found quite a bit of helpful information in the *Guide*.

[T]he Guide will make it practical for you to teach yourself the subtleties of Illustrator by really practicing with it, not just blindly trying to figure out what those myriad tools actually do, and it does so more concisely than the Illustrator manual.

Visual Quickstart Guide: Illustrator 6 for Macintosh
by Elaine Weinmann and Peter Lourekas
PeachPit Press
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Biff the Dog is an Odd Bird

But a Very Likeable One

by Jennie Van Heuit

Ron and Joe of Peachpit Press got pensive and silly about a dog in *A Day with Biff*. This isn't just any dog—Biff the dog has many human sides, such as having an alarm clock and a job.

The book follows Biff on his daily schedule, which is amusing on its own (such as a scheduled trip to the junkyard). Ron and Joe have also included some fun side activities and amusing narrative banter—small puzzles to solve that help Biff on his way.

One of the puzzles in the middle of this book is a sort of scavenger hunt. Biff is in the junkyard, and a list is given of the items Biff has found. The puzzle is to spot each and every found item. The intriguingly fun artwork makes this puzzle even better.

Another puzzle is a coded message, made up of unusual shapes and symbols. The reader has to guess which symbol corresponds to which letter, and build on that, similar to the puzzle in the Sunday newspaper. The decoded sentence tells which of three openings Biff must use to escape the sewer.

This leads to my only criticism of *A Day with Biff*. It would have been nice for Ron and Joe to include some of the solutions to the puzzles. (Some of us may *never* get to the highest level in *Crystal Crazy*©!) Fortunately, the keys to the puzzles aren't really necessary to move forward in the book.

The Biff cartoons in the book are very modern looking and fun. They have sort of a "Ren and Stimpy feel." The *pièce de résistance* in *A Day with Biff* are the 70 encapsulated Postscript (EPS) files included on a disk in the back of the book (a hard disk drive with 1.9 megs free disk space is required; files are compressed on disk). Using these any reader can make his or her own Biff cartoons! No EPS viewer is included, but *Freehand*© and many other drawing programs can easily read and manipulate EPS files.

A Day with Biff is an appealing book in many ways—it gives an amusing and entertaining read, contains a somewhat challenging set of puzzles, and includes a fun group of illustrations to manipulate. I look forward to the next one from Ron and Joe—*Biff Goes to Rio?*

A Day with Biff
Peachpit Press
2414 Sixth Street
Berkeley, CA 94710
(510) 548-4393
http://www.peachpit.com

US $24.95, Canada $30.00

Jennie Van Heuit (peapod@rahul.net) joined BMUG right after buying her first Macintosh: she's no dummy! She lives and works in Alameda , CA and hopes someday to produce a shareware weaving program (Mac only, of course).

(A hard drive with 1.9 meg of free space is required)

[A]ny reader can make his or her own Biff cartoons!

Hardware

The BMUG Guide to Buying Macs

A Condensed Version

by Sam Penrose

Introduction

The first edition of The BMUG Guide to Buying Macs grew out of an article written for the Fall 1996 Newsletter. Soon after publication it was thoroughly rewritten. The second edition presents information on every aspect of buying a Mac, with an eye towards readers who begin with almost no knowledge of computers. It assumes they know what keyboards and printers are. Everything else is explained: what computers consist of, what they're good for, what the parts and peripherals do, software, how to budget, the general capabilities and prices of almost every Mac made between 1988 and 1996, where to buy new, how to shop used, upgrades, warranties, insurance, and what to do after you bring your purchase home.

While the Guide is a BMUG publication unto itself, we have decided to make it available here for all members. To save space we pared it down by about 30%. The missing passages cover things that most BMUGers will know, mainly what my teacher friend Paige calls "beginningmost" knowledge: what computers do, what a hard drive is, what makes PowerMacs different from 68K Macs, and why Wintel machines are inferior.

This condensed version is for people who have used a Mac before. If you know someone who would be interested in a concise, comprehensive introduction to Macs for first-time buyers, consider getting them a copy. The cost is trivial compared to the sums involved in purchasing even an old Mac—and it gives BMUG much-needed revenues. (It will also be more accurate, as Apple is expected to completely redo its PowerMac lineup a few weeks after this Newsletter is released.)

If the knowledge you get from this article or the Guide saves you substantial amounts of time and money, as we hope it will, consider giving some of that value back to BMUG. Volunteer. Rejoin at a higher level. Or make a donation. BMUG is a community of people who give of themselves to benefit themselves and others. The more each of us puts in the communal pot, the richer our collective world.

How Much Should I Spend?

Anywhere from nothing (by procuring a gift) to more than you'd drop on a new car. Most people will want to spend somewhere between $200 and $5,000. The next table breaks down the market into semi-arbitrary categories for typical budgets and needs. Don't worry if it sounds like your needs can't be met by your budget. These figures aim at the middle of broad ranges. Portable Macs, called PowerBooks, are a world unto themselves and will be considered later.

Should I Upgrade Instead?

Contrary to what you'd think, people who can't afford the computers in the stores get the most bang for their buck by buying used machines, and the least by upgrading their current machine. Look at the table of Basic Mac Budgets. Prices are extremely compressed at the low end. For machines worth less than $1,500, the cost of an upgrade almost always exceeds the cost of a Mac that includes the feature you're upgrading and is a lot nicer in other ways.

Background Knowledge

You may have heard people talk about RAM, which stands for Random Access Memory; it's also called just plain memory. RAM is to processor as body is to brain, sort of. The processor makes the decisions and RAM carries them out. Every computer needs both. The analogy breaks down when it comes to their interaction. Where brains and brawn stereotypically define opposite approaches to problem-solving, processor and RAM work together. The faster your computer's brain is, the more RAM you need to take advantage of it. A fast computer with-

Basic Mac Budgets

Budget	What You Can Get	Potential Reason for Buying
$200±	Old Black & White Mac	If you can't/won't spend more
$400±	Slow Color Mac	Decent for writing, doing taxes
$700±	Perkier Color Mac	CDs. Less hassle & waiting than above
$1,200±	Old PowerMac	Internet, education, games, graphic arts
$2,500±	Newer PowerMac	A/V. More fun & growth than the above
$5,500±	Hotrod PowerMac	Real work and well-paying

out enough RAM is like an absent-minded genius. Her accomplishments, while impressive, are sporadic. She tends to drop things and trip over her own feet. So with computers that lack sufficient RAM. They go slow, they can't do two things at once, they ask for more hand holding, and then they crash anyway.

RAM is measured in megabytes or megs and typically comes in multiples of four. Do not buy a Mac with less than 4 megs of RAM. If you spend more than $500 on a used Mac, you should probably have 8 megs. If you buy a PowerMac you should have at least 16 megs, no "probably" about it. A better rule of thumb is to go with 24 or 32 megs, especially if your budget is $2,000 or more.

To the delight of computer owners everywhere, RAM prices plunged in 1996—as of September, you can get that 8 extra megs for $50! Always check prices before you order; they change daily. For this reason, the best prices on RAM come from companies that sell nothing else. BMUG recommends TechWorks, a mail order firm that features decent pricing and world-class support. You can reach them at (800) 688-7466.

Recommended RAM supplier:
TechWorks
(800) 688-7466

Do not buy a Mac with less than 4 megs of RAM. If you spend more than $500 on a used Mac, you should probably have 8 megs. If you buy a PowerMac you should have at least 16 megs, no "probably" about it.

How Much RAM Should I Have?

CPU	Comes with	Add	Price Fall '96
B/W, cheap color	4 megs	(Don't buy one with less)	
Perkier Color	4 or 8 megs	4 or 0 megs	$25 or $0
Old PowerMac	8 megs	8 or 16 megs	$50 or $100
Newer PowerMac	16 megs	16 – 32 megs	$100 – $200
Hotrod PowerMac	32 megs	32 – ?	$200 – ?

graphics that cause my computer to bomb in various ways

PowerMac Processor Types

Processor	Speed Range	Comparable to...
603	75 MHz	~ 45 MHz 601—by far the slowest
601	60 – 120 MHz	The "basic" PowerMac chip
603e	100 – 120 MHz	At 100 MHz, slightly slower than 601
604	120 – 180 MHz	At 120 MHz, 30% faster than 601
603ev	180 – 240 MHz	At 200 MHz, like 120 MHz 604
604e	180 – ? MHz	At 180 MHz, about 10% faster than 604

Clock Speed

The number after the slash in PowerMac names refers to the rate (in megahertz, or millions of cycles per second) at which the processor runs, called the clock speed. So, that's simple: the higher the number, the better, right? Sorry. That's only true if both machines have the same processor. Apple has used six so far.

Real World Speed and Extensions

Below $1,500, the relationship between speed and price is roughly 1 to $100. That is to say, if $100 worth of Mac has a speed rating of 1, a $500 Mac is about a 5 and a $1,200 PowerMac system is about a 12. Above $1,500—i.e., for new Macs—increasing speed gets more expensive and complicated. A glance in any catalog will show you that just to get 10% more processor speed, you usually have to spend 20% or more extra. But that won't speed your experience up by 10%, since it'll probably have the same hard drive, video bus, and other bottlenecks. You'll be lucky to "feel" 5% faster for your 20%. (People doing certain kinds of power intensive work such as graphics and Photoshop will get almost all the benefits of a faster processor.)

This has two implications for bigger budgets: don't blow too much on the processor, and consider other ways to raise speed. Most people budget by picking a CPU, then seeing how much they have left over for everything else. Try the opposite approach: write down everything you want except the CPU, total it up, and see how much is left over. If that leaves you with an excessively slow CPU, compare the relative cost of a faster processor against an accelerated video card or faster hard drive.

There are simple ways anyone can speed up their Mac. Run your monitor at 256 colors rather than at a higher depth unless you are looking at photograph-quality graphics. Make sure you have enough RAM to avoid using Virtual Memory or RAMDoubler. Run a clean system.

Macs for Less than $1,500

My prices here are estimated good prices for a "system": CPU with mouse, monitor, and keyboard. Printer and modem will add to the total; if they don't, you've stumbled across a good deal or a bad printer or modem. Most of these Macs will be used, and prices vary wildly. If you buy from a store that sells used computers, you will pay a premium, since it has to pay for salaries, etc. That may be worth the convenience.

Consider the quality of the monitor included, and look for extras like more than 4 megs of RAM or a printer thrown in for next to nothing.

Old-Style Black and White Macs

Remember the first Mac, with the funny rectangular shape? These machines don't look like it, but they have internal hard drives, making them worth your while. Try to get one with at least 4 megs of RAM. My price estimates are ideal; you will probably be stuck with what the seller asks since these relics change hands infrequently. Make sure they're in good shape; most are very old in computer years. If the asking price is more than $200, see if you can't find a color Mac for about the same amount.

- Mac SE: about $100. The oldest (1987–1990) and slowest. Make sure it has a hard drive. Try to get one with a modern floppy drive ("HD" or "1.4 meg," not "DD" or "800k"). Or buy something better.
- Mac Classic: about $125. Not faster, but newer (mostly 1991). Most shipped in a 2/40 configuration—it's more cost effective to buy something else than to buy more RAM.
- Mac Classic II: about $175. (Vintage 1991–1993) Based on the "68030" processor, which besides running a lot faster than the "68000" driving the previous two, the Classic II is the minimum for much modern software. This machine is equivalent to the Performa 200.
- Mac SE/30: about $200. Older than the last (1989–1991) but a hot rod in its day, in contrast to the econobox Classic II. Will feel faster, but may have lived a harder life.

Crippled Color Macs

Apple made two color Macs based on the 68030's short-lived predecessor, the 68020. The "II" is a gigantic industrial dinosaur that cost $6,000 in its heyday while the LC (Low-cost Color) is a younger "econobox." They are worth very little, but if you can find one with monitor and keyboard for less than $300 it might make sense for you.

Basic Color Macs

Apple made a dozen 68030-based color Macs which it sold under a dizzying variety of names and configurations from 1988 to 1995. In rough order of increasing desirability, they are: IIx, IIcx, Color Classic, LC II (aka Performa 400–430), IIvi, IIsi, P600, IIvx, LC III (P450), LC 520, MacTV, P460-467, LC or Performa 550–560, and finally the Mercedes of their era, the IIfx and IIci. That list is probably incomplete. The "Color Classic" is a traditional rectangular cube, which makes the screen really small. The 500's and the MacTV had bigger built-in monitors; they're okay.

Shop aggressively here; it's a buyer's market and prices are so compressed that a bad price on one of these will be higher than a good price on a much faster model from the next category. Consider the quality of the monitor included, and look for extras like more than 4 megs of RAM or a printer thrown in for next to nothing.

Perkier Color Macs

Based around the 68040 processor, these Macs have the generic name "Quadra." Pleasantly faster than 68030 models, they can run a somewhat higher fraction of modern software. Cheapest and most common is the Quadra 605, also sold as a Performa or LC 475 or 476. It looks like a large pizza box made of light gray plastic. I have seen them as cheaply as $350 with a monitor and keyboard (equivalent to about $200 for the CPU). $500 for a system or $350 for the box is more appropriate. Unfortunately, a large fraction of 605 owners have no idea how far prices have fallen. Asking prices of $1,000 for a 605 with a keyboard and monitor are absurd but all too common. Shop around.

More expensive Quadras usually have more RAM and often CD-ROM drives. In roughly ascending order, they are the "Centris" 610, Quadra 700, Quadra 610, Centris/Quadra 660AV, Quadra/Performa/LC 630–638, Performa/LC 575-580, Centris 650, Quadra 650, Quadra 800, and Quadra 840AV. (I left out a few industrial dinosaurs.) They are all worth more than a 605; they are also worth less to most people than a cheap PowerMac. These facts suggest a range of $550–$800 for a system. The 575–580 series have a nice built-in monitor. The 630 series is as common as the 605. Models numbered higher than 638 were made for doing serious work in their day and often command a premium due to their engineering. Most people will get more value by putting that premium towards the cost of a cheap PowerMac. As always, shop around: insist on 8 or more megs of RAM, and consider monitor quality.

PowerMacs and the Net

"Internet" is a small word for a large and complicated phenomenon. Most people want access for emailing their friends and exploring the wonderful World Wide Web. Email works fine on even very slow computers, but the Web is a beast of a different color. It throws data at your computer as fast as the phone

Asking prices of $1,000 for a Quadra 605 with a keyboard and monitor are absurd but all too common. Shop around.

Email works fine on even very slow computers, but the Web is a beast of a different color.

line and modem will allow. Since computers are so much faster than phone lines, you might think the relative speed of your Mac wouldn't matter. That's what the press has always said, and until I got a PowerMac I believed them.

Actually, the speed of your Mac matters a lot for Web browsing. In the first place, most PowerMacs have much faster serial ports (if a modem is the doohickey that plugs into the phone line, a serial port is the thingamabob that connects the computer to the modem). So there's less time wasted at that connection with a PowerMac. Once Web data comes inside the computer, your browser (software for using the Web) immediately "caches" it on your hard drive, to avoid dragging it back over the phone line the next time you need it (often an instant later). PowerMacs, being new, tend to have faster hard drives than Quadras. At the same time, the browser will be drawing that information on the screen and responding to any typing or mouse clicks you may enact. Each of these acts requires attention from the processor; if it falls behind doing one step, everything else has to wait.

The slowest PowerMac processor running native software is several times quicker than the fastest 68K processor. In real world terms, for Internet use, the slowest current PowerMac is 2–5 times faster than a typical Quadra. When I had a fast Quadra, I avoided the Web because it was so painfully lethargic. Now that I have a slow PowerMac, I use it daily.

Speaking of "caching," every PowerMac should have a secondary or level-two cache, despite the fact that many ship without them. Here's why. (If technical stuff makes your eyes glaze over, you can skip the next couple paragraphs as long as you remember: get a secondary cache if your PowerMac lacks one.) Earlier I referred to a browser's "caching" data on your hard drive. Data reaches your processor from many different paths—in a fraction of a second, it might have to listen to the keyboard, the modem, the CD drive, the hard drive, and RAM. One way to look at those data sources is in terms of how fast they are. A good typist can enter 200 characters a minute. A modern modem is about a thousand times as fast. An old CD-ROM drive is hundreds of times faster than that. Most hard drives are several times faster than the CD. RAM is a thousand times faster again—yet it's still vastly slower than your processor, mainly because of the circuitry (or bus) between them. Not coincidentally, keyboards are dirt cheap, modems are pretty cheap, drives are a bit pricey, RAM is pricier, and processors, the fastest of all, are worth their weight in gold.

A long time ago, computer engineers noticed that if a computer used a given piece of information, it would very likely use it again soon. Let's say the computer is redrawing the image you see on the screen. It is using a very few commands—"make a dark blue dot, make a dark blue dot, make a dark blue dot, make a light blue dot"—over and over again, thousands of times every second. If it can say "Make a dark blue dot" or even "Make a ____ dot" a little bit faster, the difference multiplied 50,000 times becomes perceptible. The processor in a PowerMac is so incredibly quick that electricity can't travel fast enough over the few inches of wire between it and your RAM to keep up. While it's waiting for that bus (or worse, for the hard drive or the modem), it might as well be a much slower and cheaper processor.

Knowing this, engineers made a little space to store the most recently used information (in this example, the instruction "Make a dot") on the processor. Such places are called caches. Unfortunately, since processors are worth their weight in gold, they could afford to make only a weensy cache on the processor itself. (That's the primary cache.) So they came up with the idea of a level-two or secondary cache to sit between the processor and the RAM. It costs less than the processor but it's faster than regular RAM. Size runs from 256K to 1 meg these days, at a cost of $50–$200. Performance gains vary from barely perceptible to a whopping 50%, depending on what you're doing. The smallest size is fine for older PowerMacs, while true hot rods crave a full megabyte. In 1997, Apple hopes to ship a Mac with a 500 MHz processor (!), which will make even that inadequate. They'll have to rethink a basic computer design that has existed since 1983.

- Macs that shipped with a secondary cache installed: 5200, 5215, 6100/66, 6200-6320, 6400/200, 7100/80, 7200/120 (some), 7600, 8100, 8500, 9500.
- Macs that didn't: 5400, 5420, 6100/60, 6110–6118, 6400/180, 7100/66, 7200/75, 7200/90, 7200/120 (some), 7500.

Your Basic PowerMac: The 6100 Series

The 6100/60, also known as the Performa 6110–6118, is the cheapest PowerMac you can buy. It has the same pizza-box appearance as a Quadra 605, but with enough room inside for a CD-ROM drive. Unfortunately, it was sold with only 8 megs of RAM and no secondary cache. It starts around $600 used, but you need to add at least $50 for 8 megs of RAM. If you are on a truly tight budget, you can stop there. Most people will want to spend a few bucks more on a unit with an internal CD (all of the ones sold under the Performa name shipped with one) and a secondary cache, which you'll probably have to add separately. That takes us to about $800, assuming you've hunted for a good deal. $900 would not be a rip off

Every PowerMac should have a secondary or level-two cache, despite the fact that many ship without them.

as I write this in October of 1996. (If your budget isn't tight, get 16 extra megs instead of 8 for a total of 24.) Another $200 will get you an adequate keyboard and monitor. You'll probably want a modem and a printer for about as much again.

After spending $1,200, you will have a great basic computer. Ideally, you'll buy as much of this package as you can from one person, saving yourself time and money.

The main limitation of the 6100-series for most people is that they use 768k of your regular RAM to run the monitor, instead of the dedicated VRAM (the *V* stands for *video*) that most Macs use. This has three drawbacks:

- It's slow, and slow video affects almost everything you do.
- It leaves you with less RAM for running your programs.
- It doesn't work well with monitors larger than 15 inches.

Some 6100s have AV cards, which cure that problem, in addition to allowing crude video work. They add about $300 to the value of the CPU. For most people, buying a more capable PowerMac is a better option than splurging on a 6100 with AV capability.

Apple sold some faster versions of the 6100, called the 6100/66. These shipped with a secondary cache, saving you the trouble of installing one. They're worth about $150 more than a similarly configured 6100/60. You may also see ads for used 6100s listing speeds of more than 66 MHz. These have been accelerated by a somewhat dubious process, and I recommend you avoid them.

FrankenMacs: The 5200–6320 Series

The FrankenMacs came about when Apple decided to recycle a design for cheap Quadras so it could sell cheap PowerMacs. To do this economically, Apple left out some of the electronic guts that make a PowerMac perform like a PowerMac. In particular, the FrankenMacs have really slow video systems relative to those of any other PowerMac. Apple didn't upgrade their serial ports either, which hurts their network performance, particularly for the Internet. The best things about them are:

- They are all Performas, which gets you software and other goodies.
- They all have big hard drives.

Used 7100's and 7200's

Machine	Base Value (approx.)	Value w/ 24 megs of RAM	Add Cache?	CPU Cost (approx.)
7100/66	$750	$850	Yes	$925
7100/80	$850	$950	No	$950
7200/75	$850	$950	Yes	$1,025
7200/90	$950	$1,050	Yes	$1,125

These figures are guidelines for smart shopping. Real asking prices vary.

- Some of them have a neat form factor (see below).
- Some people are patient with slow computers.

The first FrankenMacs were the 5200–5215 and 6200–6220. Their processor, the 603/75, is much slower than that in any other PowerMac. (it beats getting a Quadra, though.) The 52xx win fans for their elegant form factor, which is a fancy way of saying their shape. They come as a 15-inch monitor with the computer part built into the bottom. For a person with limited space and a modest budget who doesn't mind a slower machine, a 5200/75 might make a good choice, even though it costs more and is less capable than a 6100. The 62xx are the same but you have to add a monitor; their VRAM ceiling of 1 megabyte limits them to monitors 15 inches or less.

Apple eventually jumped the processor in these models to the much faster 603e. The new versions are the 5260 and 5300 and the 6290–6320; they are finally better machines than the less expensive 6100s. Unfortunately, serious manufacturing flaws were introduced in some of the early runs on these machines, forcing Apple to offer a special 7-year warranty for them. They cost as much as or more than the machines in the next category—my favorites.

The 5300 and 6300 came first. The 5260 lacks a cache. The 6290 had less RAM and an inferior monitor. The 6320 has a faster processor.

Note also that despite having model numbers reminiscent of the FrankenMacs, the Performa 5400, 6360, and 6400 are completely different machines. You can read about them in the Over $1,500 section.

Sweet Spot: The 7100s and 7200s

Take another look at the chart of Basic Mac Budgets near the beginning. It proceeds in small steps from $200 to $400 to $700, takes a long stride to $1,200, and then leaps to $2,500. In other words, every dollar counts until your budget reaches a certain point, after which you have to really throw some cash around to get significantly more computer. The last best Macs before $1,500 becomes $2,500 are the 7100/66 and /80 and their evolutionary successors, the 7200/75 and /90.

Apple designed these machines to be workhorses, not econoboxes. Their video systems and serial ports give great performance for the price, especially if you buy a 7200 and add some VRAM. They have significant room for expansion, although historically very few users will take advantage of it. All shipped with 8 megs of RAM and should be bumped to 24 or more. Only the 7100/80 shipped with a level-two cache installed. Make sure your 7100 has a CD-ROM drive—a few didn't.

Little touches make the 7200s nicer than the 7100s. They are easier to work on, have faster video, and support an energy-saving "sleep" mode. The last 7200, the /120, sells new for $1,500 with 16 megs of RAM, a big fast hard drive, and a cache—about $400 more than a /90 with the RAM and cache but a slower drive.

Peripherals

This section will matter more to some buyers than others. Cheap used Macs typically come as complete or nearly complete systems. So do many new Macs. Nonetheless, almost everyone needs to know a bit about peripherals, especially the ones you spend most of your time interacting with. If a Martian tried to define a computer, he'd probably say it consisted of a flat thing a human taps its fingers on and a bright thing the human stares at. We know there's more to the story, but don't scoff at the Martian's perspective. Unless you suffer a significant handicap, your "computer use" consists of about 90% looking and typing.

When you are using a computer, your monitor is your world. Buy the best monitor you can afford.

Far too many people spend an extra $500 to get a processor that's 10% faster. It makes the CPU all of 3% faster, which they can't perceive, but vaguely eases their anxiety about spending thousands on something the average teenager will sneer at next year. They have hardly any money left over, so they buy the cheapest monitor and keyboard in the store. For another $300, they could get a monitor that is much bigger, sharper, and brighter—a difference that will show up in the headaches they get every time they look at the cheap one for more than an hour. Plus they'd have $200 left over to blow on good champagne. Instead, they can only afford cheap champagne, which gives them more headaches. When you are using a computer, your monitor is your world. Buy the best monitor you can afford.

Keyboards and Mice

Apple has never sold a Mac without a mouse. If a used package does not include one, deduct $40 from its value. If you have to buy a mouse, the "ADB II" model standard since 1993 or so is much better than the one it replaced.

Two keyboard types with similar names dominate the market: *Apple* and *AppleDesign*. There are three Apple keyboards: the Standard, the Extended, and the Extended II. All have low keys that require less pressure and less travel to register than the Design's, resulting in more accurate results with less strain. You can identify them by the interchangeable ADB ports on the left and right rear corners. The Design has a permanently attached ADB cable for the CPU and ADB ports for the mouse cable in the middle rear. It and the Apple Standard, which is missing a few keys that the others have, are worth about $50 used. The Apple Extendeds run from $75 to $180, depending on where you buy.

I encourage everyone to use an Apple over an AppleDesign; the small extra cost buys you a much nicer experience. There are a few other keyboards around; you are most likely to stumble across the one Power Computing ships free with all its CPUs. It stinks. Get an Apple.

Monitors

The cheapest decent monitors are small old Sony Trinitrons sold under the Apple label. Trinitron refers to the basic internal design of the monitor. There are several other technologies, generally not as good. "Buy the best monitor you can afford" usually means "buy the biggest Trinitron you can afford." Trinitons are extremely flat, reducing distortion and glare. They have a faint horizontal line visible against white backgrounds near the middle of the image.

Monitors are measured in "inches," which refers loosely to the diagonal size of the image. Since that's a linear measure, as it grows the area of the image, which is what you care about, increases much faster. The first monitors were 12 inches; don't pay more than $75 for these. 13-inch Trins are worth about $150, as are the common 14-inch "Plus" models Apple sold for a couple years. The Pluses are a bit larger and newer, but fuzzier and "glarier," than the 13-inch Trins. Either is perfectly adequate if your total budget is under about $900. Apple's current 14-incher is called the "Multiscan." I hate it because it's quite curved and therefore quite glary. It also costs about $75 more than the discontinued Pluses.

Apple's other current small monitor is the 15-inch Multiscan. It provides about 25% more viewing area than the last two. You can find it for $300 if you hunt or pay $450 if you're lazy. Apple recently slapped speakers on some of these, gave them a new name (15av), and bumped up the price $50. New 14-inch Trins start around $250. 15-inch Trins cost $400 and up.

None of these is what you want. You want a 17-inch Trin. It will make your computing world twice as big and shiny as a 14-inch monitor does. A brand-new Sony with a three-year warranty will set you back $800; if you're patient, you can find them a bit cheaper.

Non-Trins are only about $150 less. Apple's is called the 1705. Apple's current Trin is called the 1710; old ones were named 17-inch Multiscan and 16-inch. The latter is not a Multiscan, which combined with its age makes it worth roughly $400. Just to confuse you, the 1705 is also a Multiscan. It lacks the faint line visible on Trins.

The next common size is 20 inches. How big is it? A 12-incher can squeeze into a backpack and weighs maybe 15 pounds. My 15-incher weighs twice that and would just about fill my freezer if I took everything out and cut a few corners off of it. It can display an 8.5 x 11 page with one-inch margins at normal size horizontally, but not vertically. A 20-incher will show two pages side-by-side at normal size. It will fill a room. Okay, not literally, but you'd better have an impressive desk to put it on, a strong back for getting it there, lots of money, and some sort of a truck to bring it home from the store.

When shopping for a monitor, eye before you buy. Individual units of the same model will vary considerably. Most will have been banged out of true between the factory and the store. The question becomes whether you can correct the flaws with the controls provided. To get an answer, you have to fiddle around a bit. If you've already brought the monitor home, and it turns out to have a bad uncorrectable flaw (as happened to me last year), you have a problem on your hands. If you mailed some guy across the country $500 for it, you have a serious problem on your hands. I recommend you buy a monitor in person only, or at least from a source likely to make returning it as painless as possible.

When shopping for a monitor, eye before you buy. Individual units of the same model will vary considerably.

Speakers

If your Mac has a CD-ROM drive, you should consider buying external speakers. If you know you'll use the drive for playing regular audio CD's (yes, they do this) or sound-rich games and multimedia titles, you should definitely have some. They can be as cheap as $40, or you can drop $200 on Cambridge Soundworks equipment that will shake the walls. You can also run a line to your current stereo speakers. One of my favorite new Macs, the Performa 6400, has a great built-in speaker.

Printers

You probably want an inkjet printer. Modern (1995 or later) inkjets are cheap, fast, quiet, use little electricity, and produce good text. Apple, Hewlett Packard, and Canon are the main producers. Prices start around $125 for a black and white Apple StyleWriter 1200. Its predecessors the StyleWriter and StyleWriter II are worth about $50 and $90, respectively. The II is the last that will work with 68000-based Macs; the first one is a dog. (But it's much better than dot-matrix printers, the bane of the 1980s, which took forever to print ugly text while squealing like amorous electronic pigs. If someone tries to sell you an ImageWriter, run away.) Unless your budget is very tight, get a 1200 or something as good or better from HP or Canon. They made more models than I can keep track of, but Canon's are identical to the Apple printers of the same year and HP's were generally better.

Laser printers are essentially computers in their own right, making them expensive, heavy, and power-hungry relative to inkjets.

These days, new inkjet printers do color. The results are much closer to what you'd get from felt-tip pens or acrylic paints than what you'd get from photography. If you plan to print color and black on the same page (say a table of numbers with a color chart), beware cheaper and older models that can't use black and color cartridges simultaneously. They'll substitute a muddy brown glop for a proper black.

Laser printers are essentially computers in their own right, making them expensive, heavy, and power-hungry relative to inkjets. The cheapest and oldest cost twice as much as the SW 1200 without producing better text. PostScript models are far superior for graphics output. Modern high-resolution (600 dpi) models print gorgeous text for $500 and up. Color laser printers cost thousands.

Buy paper designed for your type of printer. You'll get better results for negligible extra cost.

Modems

Modern 28,800 and 33,600 bps (usually written "28.8" and "33.6") models are essential for the Internet. The latter may be slightly faster for some users. Prices run from $125 to $200. Modems meeting the previous standard, 14.4 or 14,400 bps, cost only $50 new, and are fine for the BMUG BBSes. Ancient 9600, 2400, and 1200 bps models are worth perhaps $25, $15, and $10. If you plan to fax with your modem, software matters. The best fax software and customer support belongs to a company called Global Village that specializes in equipment for the Mac. I recommend them for faxers and non-faxers alike.

Video Cards

All current desktops except the FrankenMacs have PCI slots. 90 out of 100 users will ignore them, 9 will put in a video card, and 1 will put in some other kind of card. Most CPUs over $2,000 could make great use of an accelerated video card. CPUs over $3,500 should have a really fast one.

Other Peripherals

There are hundreds. Most people will want to consider a backup and alternate for their internal hard drive. This can be an external hard drive, or some sort of a removable drive. No one removable makes sense for everyone, because work and life patterns vary drastically. Begin by looking at the Iomega Zip, the Iomega Jaz, and the APS 230 MO, all of which have many fans.

Generally, settle on a total budget, divide by two, add a few bucks, and the resulting figure will give you an idea of how much you should spend on your CPU before adding RAM or anything else.

Macs for More Than $1,500

Here I look at CPUs worth more than $1,000, which translates to system prices over $1,500. If you skipped ahead to this point, go back and read the sections on peripherals and software first. Generally, settle on a total budget, divide by two, add a few bucks, and the resulting figure will give you an idea of how much you should spend on your CPU before adding RAM or anything else. You have to be careful comparing different Macs under this rule, since "Mac" can mean anything from "CPU and mouse, no cache, inadequate RAM, no software" to "every last thing but a monitor and a printer." Adjust for different configurations and features by writing down what's there and what's not next to the dollar values you find in this guide. A few Macs which belong here by price are holdovers from older and cheaper lines, so I discuss them in the Under $1,500 section. They are the FrankenMac Performas

6290, 6300, and 6320, and the PowerMac 7200/120.

The 8100s

From the spring of 1994 until a year later, the best Mac money could buy was an 8100. These towers have features like dual SCSI buses and extra SIMM slots that power users will pay a premium for. If you don't know what those terms mean, you probably won't get as much for your money with an 8100 as you would with other Macs. Prices on 8100 CPUs range from $1,000 or so for a basic 80 MHz model to $2,000 for an 8100/110 with lots of extras.

The Performa 5400

Available only through the education channel, the 5400/5420 combines the best feature of the FrankenMacs—the option for an all-in-one enclosure—with solid electronics. While hardly a hot rod, it makes sense for students and teachers who need a basic computer that fits gracefully into their environment.

The Performa 6360

Apple caught everyone by surprise with the 6360, released just as we were going to press. It sounds like the best deal Apple has offered on a brand new computer in a long time. Based on the same solid foundation as the 5400, the 6360 has a faster 160 MHz 603ev processor and comes with a $150 modem, 16 megs of RAM, lots of good software, and even a PCI slot. The announced price is $1,500, which means street prices below $1,400 by the time you read this. Adding a keyboard, a cache, RAM, and a monitor will take you over $2,000. By spring they should be ubiquitous for considerably less.

This is the first time since 1993 that Apple has released a compelling entry-level machine. The clone companies will be hard-pressed to match it, let alone beat it. Its toughest competitor is probably Apple's other current Performa, the 6400.

The Performa 6400

The 6400 is the 6360's big brother. A tower instead of a desktop, it has a faster processor, a bigger and probably faster hard drive, an extra PCI slot, and best of all, a great built-in speaker. A cacheless 180 MHz model lists for $400 more than the 6360, although part of that gap is erased by a bundled keyboard. For another $300 you can get a 200 MHz model with a cache and a bigger (2.5 versus 1.6 gig) hard drive. Bundled with an elegant PCI-based video-editing system and 32 megs of RAM, the latter model lists at $2,700 right now.

Like the 6360, the 6400 can't fully exploit 17-inch monitors unless you add a video card. On the other hand, with its delightful sound and video (movie) capabilities, the 6400 offers computer novices better reasons to shell out serious money than any other higher-end Mac.

The 7500s and 7600s

Think of these as souped-up 7200s, designed for easy and effective upgrading. The case pops right open so you can swap in a new processor, attach a really fast hard drive to their accelerated bus, install a PCI card to complement the video-in ports it already has, or add RAM which you can interleave, a trick that allows the computer to use it more efficiently.

The vintage 1995 7500/100 is medium speed by today's standards, performing like the 7200/120 if you add a cache. The latter is generally more expensive despite being not as nice. Last April, Apple changed the processor in the 7500 to a 604/120 and added a secondary cache; it's now called the 7600. In August, it bumped the 7600 to 132 MHz and gave it a faster CD-ROM drive. As usual, you'll pay hundreds to take advantage of a small speed gain. Consider buying a 7500 and swapping in a new processor. At $1,500 plus $600 for a 132 MHz 604 and a cache, the 7500 matches the $2,200 7600/132 already. By next summer 166 MHz 604s should be common for less than /132s cost now—and you'll save $600 by upgrading from a 7500 instead of from a 7600/132.

The 8500s and 9500s

The 8500 is sort of a tower version of the 7600, except that it has video-out as well as video-in. In stark contrast to the 7600, it's a total pain in the keister to work on. The simplest modification, adding RAM, requires taking every last @!#$^!&* connection apart, including the one that holds the processor.

At its introduction in August of 1995, the 8500 was much hailed for then-impressive video capabilities. While I do not know much about AV work, I sense that the 8500 has become a 'tweener—expensive relative to machines with basic AV capabilities, but well short of broadcast quality. Of course, it has PCI slots and fast internal SCSI (the hard drive bus), but so does the cheaper 7500, which is much easier to work with.

Even more appealing for beginners might be a 6400 or 7500 plus the friendly Avid Cinema video-editing system Apple bundles with some 6400s. If you are torn, ask people who do lots of AV work. (BMUG's BBSes are a great place to contact them.) The 8500 comes in 120, 132, 150, and 180 MHz flavors, running from $2,000 to twice that. The 256k cache shipping with all of them could stand an upgrade in the 180, which has the faster 604e.

The 9500 is an even bigger tower with an absurd 6 PCI slots. You have to fill one of them with a video (as in monitor) card to do anything; the one Apple optionally bundles with many models is the least capable on the market, as far as I can tell. (It still beats any other Mac's built-in video.) There are 120, 132, 150, and 200 MHz versions, as well as a model with two 180 MHz 604e's. (So far only a handful of programs can take advantage of multiple processors.) All have 512k caches soldered in, which is smaller than the last two need. Apple made the 9500 for pros with real work to do. It does not make terrific sense as an all-around computer.

On the other hand, with its delightful sound and video (movie) capabilities, the 6400 offers computer novices better reasons to shell out serious money than any other higher-end Mac.

Clones

There are currently four companies other than Apple shipping Macs in the U.S. One, Motorola, offers basic machines aimed at the corporate world. Some people are going gaga over their five-year warranty; for an explanation of why that's worth maybe $20, skip ahead to the Warranties section. A second company, DayStar, offers only extremely high-end machines. The third, UMAX, sells a competitor to the 9500 which seems to offer more bang for the buck. In August it announced competitors to Apple's Performa line which have yet to ship. Unfortunately, Apple has just announced (at this writing) the more impressive 6360.

The most important clone company, Power Computing, also promises Performa competitors, called Powerbases. These will be faster than similarly-priced Performas due to various optimized components. However, the 6360 and 6400 still look like better deals to me. With list prices roughly comparable to Powerbases running at the same clock rate, the Performas include a $150 modem. Power offers a worthless keyboard instead. Worse, list is the most you can pay for a Mac. 10–25% discounts are common for Performas, while Power never discounts. The Powerbases will offer more raw speed, but that isn't hard to pass up. Power's high-end PowerTower Pro line does make sense for the hotrod market. Unlike Performas, 9500s exist for the sake of raw power, which the PowerTower Pros deliver more of.

All Power Computing Macs come with a great software bundle and a lousy keyboard. They have a reputation for being extremely noisy; that factor alone would kill my interest in any computer. Of course, individual audial environments and sensitivities vary, and the newest machines may be quieter. Some people worry about making a large investment in equipment by a manufacturer without a track record of reliability. Power seems to inspire more horror stories than Apple, but this is not a huge deal. Either disaster strikes or it doesn't, and your odds are decent with Power Computing.

Regular Macs are called desktop computers, because they more-or-less cover an entire desktop.

PowerBooks

Regular Macs are called desktop computers, because they more-or-less cover an entire desktop. PowerBooks take up about as much space as a stack of two thick magazines. In order to cram an entire computer into such a small package, engineers have to make trade-offs. The most obvious trade-off is price: PowerBooks historically cost about twice as much as roughly equivalent desktops. Despite this premium, they don't perform as well. Hard drives, and video buses are slowed to reduce weight and power consumption. Instead of mice, their pointing tools are trackballs (before 1994) and trackpads, which work a little differently. You can generally plug a mouse into the back if you prefer one.

Using a PowerBook tends to force you to acquire more technical knowledge than you might like, particularly if you care about battery life. On the plus side, they are handy and cute. No two models offer the same mix of speed, screen, features, trade-offs, and technical quirks. The quirkiest PowerBooks, called Duos, weigh less than five pounds but have so many trade-offs and require so much knowledge that they make sense for only a tiny fraction of Mac users. Although I owned and loved a Duo for 18 months, I don't think the lengthy discussion they require belongs in a general guide to Macs. If you're interested in them, join BMUG and ask online.

Using a PowerBook tends to force you to acquire more technical knowledge than you might like, particularly if you care about battery life.

Besides processors, screen type defines PowerBooks: color versus black and white or grayscale, and passive matrix versus active matrix. Active matrix is much sharper and brighter than passive. Modern passive matrix screens are called double-scan; I personally would rather have one of them in color than an active-matrix grayscale. The single-scan color screen on the 165c is dim and blurry.

As of 1996, only color screens are being manufactured. Weight is just over 7 pounds for most models. The 1995 models weigh range from 5.5 - 7.1 pounds.

The first PowerBooks shipped in 1991. The 100 is very light, very slow, very cheap, hooks up to an external floppy drive, can't run much modern software, and has great battery life if you can find a fresh battery somehow. The 140 provided the form factor for the next half-dozen machines. It and its 1992 replacements, the 145 and 145B, have passive black and white screens and lack video-out. I recommend you jump to a better model for a few bucks more.

The 170 has active matrix black and white and is still a decent option. The original hard drives in these models are dropping like flies and tough to find cheap replacements for. Look for units that have already had their drive upgraded.

In 1992, Apple introduced two PBs with grayscale screens that could drive desktop monitors, the passive 160 and the active 180. A PowerBook attached to a monitor is slow and expensive relative to regular desktops, but still makes sense for those who must have a portable and work at home for long stretches. Most later models have this capability. The 160 was soon replaced by the slightly faster 165. The 180, culmination of a seven-model line, remains an elegant and functional computer, especially for the money.

A few months later Apple shipped two failed color models: the 165c and the 180c. Both are heavy and have terrible battery life. Their screens are dim, blurry passive matrix and tiny active matrix, respectively. Avoid them. The last model with a 68030 processor was the 150, sort of a noisy 5.5-pound 165 with no video-out.

In 1994, Apple rolled out the 68LC040-based 500 series. The heaviest PowerBooks ever at 7.2 pounds, these look like something out of Star Trek. The 520 and 520c are passive models running at 25 MHz; the 540 and 540c run at 33 MHz with active screens. The "c" models are color. Apple made very few of the gray-scale 540s. Many 520c's and 540c's shipped with 12 megs of RAM and slow, expensive Global Village modems. Unless you track down a kludgy and expensive expansion module, you have no other internal modem option for the 500 series.

In late 1995, Apple finally shipped Power PC-based PowerBooks. All are numbered 5300; the "cs" has passive color while the "c" and "ce" have active color. The base model is passive gray; all other things being equal I would rather have a color screen than the modern processor. Many more cs and c models shipped than the other two. The c and cs came in two configurations: 8/500 and 16/750. The c 16/750 has 1 meg of VRAM (so does the ce) as opposed to the 512k of both cs's and the c 8/500, which is not expandable. This matters only if you plan to use an external monitor extensively.

The "e" in the 5300ce apparently stands for "excess." Running slightly faster than the others, it shipped with a big, high-resolution screen, 32 megs of RAM, and a 1.1-gig hard drive for $6,500! The ce is the only 5300 that shipped with enough RAM. 16 megs is the minimum for desktop PowerMacs, but for complicated reasons (avoiding Virtual Memory) PowerBooks will function much better with at least 32.

At 6.4 pounds, the 5300s are lighter than all previous PowerBooks except the 100, the 150, and the Duos. Apple also shipped two versions of them with '040 processors, the 190 and 190cs. In August they were discontinued for $900 and $1,200, respectively. Given their light weight, standard 8/500 configurations, and the excellent ClarisWorks software they ship with, these machines are nice alternatives to the 520 and 520c. I plan to buy a 190cs for a two-month writing trip rather than the similarly priced 520c or 5300. The main downside to all of the 1995 PowerBooks is poor workmanship; Apple felt forced to introduce a seven-year warranty for the most common problems. If you buy one, examine its physical condition and repair history carefully.

The 5300 series will plummet in price between my writing this in October of 1996 and the spring of 1997. The CD-ROM- and secondary cache-capable 1400 and "Hooper" (which doesn't have a number yet) should be big hits. Hooper , in particular, is rumored to run 180–200 MHz 603ev's and to be the first PowerBook ever that can perform like a desktop. Right now the 5300cs, c, and ce cost about $2,100, $2,600, and $3,300 for 16/750, 16/750, and 32/1.1 configurations. I expect depreciation on the order of 35% by March, perhaps a bit less for the cs and a bit more for the ce.

Buying

Risk

There is no perfectly safe way to buy a computer. No matter how much you spend, there is always some chance of getting stuck with a lemon or a big hassle. (Blame consumers: they go on and on about the importance of quality and support, then refuse to pay for it.) On the other hand, the vast majority of all purchases work out fine. The following section highlights risk because it matters, not because it's large. Inform yourself, then relax.

Buying New: Stores

Stores let you see, hear, and touch the shiny new toys. I recommend that most first-time buyers hang out in a computer store for a little while, even if they can't afford to buy new. Stores give you a sense of the market and are invaluable for comparing monitors. They

PowerBooks

Model	Price Range	Processor	Screen	Notes
100	$250±	68000/16	B/W (PM)	5 lb., no floppy
140	$300±	68030/16	B/W (PM)	Spend less or more
145, 145B	$400±	68030/25	B/W (PM)	Slightly better
150	$450±	68030/33	Grayscale (PM)	5.5 lb., noisy, basic
160	$450±	68030/25	Grayscale (PM)	Video-out
165	$500±	68030/33	Grayscale (PM)	Video-out, faster
165c	$750±	68030/33	Color (PM)	Ugly and pricey
170	$500±	68030/25	B/W (AM)	Vintage 1991 like 100 and 140
180	$750±	68030/33	Grayscale (AM)	Very nice for price
180c	$850±	68030/33	Color (AM)	Tiny screen; not worth price
190	$800±	68LC040/33	Grayscale (PM)	Shipped in 8/500 configurations
190cs	1100±	68LC040/33	Color (PM	190's sister; vintage 1995 – 1996
520	$700±	68LC040/25	Grayscale (PM)	Vintage 1994; consider 190
520c	$1,100±	68LC040/25	Color (PM)	Consider 190cs
540	$1,000±	68LC040/33	Grayscale (AM)	Extremely rare
540c	$1,600±	68LC040/33	Color (AM)	Popular; get 12-meg unit
5300	$1,000±	603e/100	Grayscale (PM)	For me, color beats processor
5300cs	$1,600±	603e/100	Color (PM)	Price should plummet by Feb 1997
5300c	$2,100±	603e/100	Color (AM)	8/500 has limited VRAM
5300ce	$3,000±	603e/117	Color (AM)	All 32/1.1-gig configuration

(210-280c and 2300c Duos Not Covered Here—Sorry!)

The main downside to all of the 1995 PowerBooks is poor workmanship; Apple felt forced to introduce a seven-year warranty for the most common problems.

Fortunately, for the first time in three years Apple's basic consumer Macs are excellent deals. Buying from a store has never been more attractive.

also provide sales reps who will answer your questions. Anyone who can do a good job as a computer sales rep is qualified for more interesting, pleasant, and well-paying work, so most reps are not very good. (This is another case of consumers' getting what they refuse to pay for.) One local exception is ComputerWare of Berkeley, at 1995 University Avenue. If I had thousands to spend and no clue, I'd shop there.

Keep in mind that even the good ones are going to sell you what they have for what they charge, which may happen to be a mediocre Mac for a high price. Fortunately, for the first time in three years Apple's basic consumer Macs are excellent deals. Buying from a store has never been more attractive. If you do, use what you're paying for. Play with the demo equipment, ask lots of questions, return your monitor if it has flaws. If you're just looking, be considerate of hardworking employees who are often paid by commission. Don't demand attention they need to spend on paying customers.

Buying New: Major Mail Order

Major mail order firms, contrary to what you might think, do not undercut stores like ComputerWare. Their costs—operators who are essentially sales reps, national advertising budgets, "free" 800 numbers, "free" shipping—are not lower. You gain the convenience of buying from home; you lose the convenience of trying before you buy.

Buying New: The User Group Store

The User Group Store is a special mail order operation. Started by one of BMUG's founding members, it arose to sell refurbished Macs to users group members. It has since branched out into new Macs, clones, and peripherals. It consistently undercuts the mainstream mail order and retail stores by a few bucks, but you have to belong to a users group to buy from it. Product selection can be whimsical. The really good deals tend to go in a matter of days. Support seems excellent (as you would expect), plus, every dollar you spend there gives your group a little credit towards equipment. This is delightful, as long as prices are kept tight. So far the potential conflict of interest has been largely unrealized, and I recommend it.

The User Group Store
Phone: (800) 350-4842
Web site: www.ugstore.com

Buying New: Discount Mail Order

The discount mail order stores that advertise in the back of Mac magazines are a gamble, in my opinion a bad one. Some are friendly, most are hard-nosed, some are scoundrels. Always, always, always use a credit card. They will charge you an extra 3%. Pay it gladly. It is the cheapest insurance you will ever buy. For example, you should always verify that your machine is "factory sealed," because some vendors will swap parts in and out, breaking the year warranty that comes with all new Macs—and breaking perhaps the computer as well. Some vendors will lie about this, screw up your machine, and then refuse to return your money. Without a powerful advocate like your credit card company, you will be helpless. These firms (honest and otherwise) often charge steep "restocking fees" on returns. And the savings aren't that great. In other words, you should probably just avoid them.

Buying New: Education

If you are a student or educator at an institution that sells Macs, you may be able to get a deal. Some of the prices are no better than normal, but others are great. Know the going rate. This channel can offer unique options like the 5400. Be aware that Apple gives it the lowest priority on scarce models. I have heard stories of people waiting for months. Committing to a certain price in advance is a bad idea anyway, given how steadily prices fall.

Buying New: Value-Added Resellers

VARs range from individuals who keep ten Macs in their basement to formal stores indistinguishable from the "Discount Mail Order" operations described above. I mention them because the good ones offer better prices and better support than any other channel. You reach them online or by word of mouth. That's also how you find someone to vouch for their trustworthiness. There are a few ripoff artists; many relatively honest brokers who want to take your money, stick your purchase in the mail, and forget you; and a few gems. Use a credit card! Of all the ways I know to buy a mid- to high-end new Mac, John Grey, a VAR who advertises on Planet BMUG, offers the best combination of personal integrity, great prices, and fabulous support.

If you are a student or educator at an institution that sells Macs, you may be able to get a deal. Some of the prices are no better than normal, but others are great. Know the going rate.

Buying Refurbished

Refurbished Macs are returns, repairs, demos, or simply excess inventory that Apple sells with a 90-day warranty. They can be great deals or lousy deals. They are sold by The User Group Store, other mail order firms, VARs, and sometimes even regular stores. Refurbished Performas typically come missing all of their software bundle except the excellent ClarisWorks, which is worth more than the rest of the programs put together anyway. I and many friends have bought refurbs with nary a problem; I suspect they are if anything more reliable than the average new machine.

Buying Used

Since individuals set every price on the used market, you'll find the most spectacular bargains and ripoffs there. If you educate yourself and scan a lot of ads, you can make out like a bandit. In other words, to save money you have to spend time. The best deals are online—if you can, start locally. For me that's with Planet BMUG and ba.market.computers, an Internet newsgroup for the San Francisco Bay Area. Then move to national forums like comp.sys.mac.wanted (available on the BMUG BBSes), AOL, and Compuserve.

If you want to put out a "wanted" ad (which I recommend), don't mention a price. Give sellers a chance to ask for less than you would have paid. The more you buy—in both dollar and component terms—the better the deals. You may want to buy a package and then resell the parts you don't want or can't afford. The best deals are priced low to begin with, not haggled. If you see the right machine at a mediocre price, go ahead and make an offer, but don't push. Always be polite and leave communication lines open; sellers who initially took umbrage at your offer will often change their minds if you let them. Ads which yell "Cheap!!!" in their subject lines, brag about their low low asking prices, and include long lists of features invariably offer mediocre or terrible deals. Read them to get a working estimate of how much is too much to pay.

Ask the seller questions. How has he used the machine? Has it ever needed repairs? Any warranty left? Why is he selling it? Does it have any little problems? Does he have the original paperwork and packaging? Does the CPU come with a mouse? (Subtract $50 if it doesn't.) Does he understand that you expect your money back if it turns out to be broken in the first few days? (He will say, honestly, that you won't have to worry about that. But you've said it, and he has arguably agreed to abide by it.) You want the answers to these questions for their own sakes, and you want to put the seller on notice that you are not a pushover while simultaneously sizing him up. Who is he? What does he do? Where does he live? Is he forthright? Slippery? (Are you good at telling the difference?) Does he brush you off?

I have never bought a used computer without the seller telling me, usually three or four times, what great shape it's in. If you don't hear this, ask yourself why.

The likely undesirables aren't professional con artists. They're the people who just don't end up doing what they said they would. The immature, the paranoid, the misanthropic, the greedy. In my experience, good manners are the good morals that keep people from ripping others off. You want to glimpse a little grace in a person before you trust him. Shun rude or erratic characters. A more prosaic concern is the occasional gracious human being who has no clue about how to treat valuable electronic equipment. I have never bought a used computer without the seller telling me, usually three or four times, what great shape it's in. If you don't hear this, ask yourself why. At the same time, remember that the seller is forming an impression of you. If a problem occurs after he has your money, your chance of getting help may depend on how much he likes and trusts you.

Try to buy locally, so you can check the machine out—and so the morally weak know that you know where to find them. You'll also save shipping. Dealing long distance is riskier but sometimes feasible. Be less tolerant of sellers who don't seem reliable. Try to get a work number, on the theory that harassing a person's boss with allegations of felony mail fraud is likely to be a more effective stick than harassing the felon himself with empty noises about small claims court. Long distance deals are done COD unless the sums are small. When the UPS carrier arrives, pay her with a cashier's check instead of cash, so that there is a paper trail. Bring a penknife to the door and ask her to wait while you slash the tape and at least verify that your new "computer" is not a box of bricks. I believe UPS also holds the money for a brief period, so check your machine out thoroughly as soon as you get it. The odds that you will be boldly ripped off are fairly low. The odds that you will feel victimized by an unpleasant surprise are directly related to your previous efforts to establish the seller's honesty, your judgment of people and equipment, and dumb luck.

After You Buy

Warranties, Extended Warranties, and Insurance

All Apple and Power Computing Macs come with a one-year warranty. (Motorola promises five years.) Be glad; quite a few computers have problems that turn up in their first twelve months. Many companies want to sell you extended warranties. That's because extended warranties for computers border on scams.

Let's say you blew $4,000 on a really nice Mac setup, and you've used it for 12 months with no problems. Let's say $2,500 of your original money went to the CPU. It's now worth perhaps $1,600. Of that, the most expensive part by far is the motherboard—call it $800, to be generous. After 24 months, the CPU will be worth $800 and the motherboard maybe $400. So the average value of the motherboard in the second year is perhaps $600. Now, the chance that your moth-

Time erodes the value of CPUs far more reliably than mechanical disasters do.

erboard will suddenly blow up after a year of working perfectly is under 1%. 1% of $600 is $6. That's my rough estimate of the value of an extended warranty. Of course, that $600 isn't your total risk; other things can break, and labor charges often top $100. But an extended warranty for $4,000 worth of new computer costs hundreds of dollars, far more than any reasonable sum given the risks involved. Time erodes the value of CPUs far more reliably than mechanical disasters do.

Monitors are the only hardware that don't lose 50% of their value within 18 months of purchase. The long warranties some companies offer on them are therefore worth a little bit. Since Apple generally charges a premium for monitors, I favor third parties anyway.

A company called Safeware (Phone: (800)-SAFEWAR) sells $2,000 worth of computer insurance for $50 a year with a $50 deductible. You have to show proof of purchase to make a claim (if the house burns down with the computer and the receipts in it, you're in trouble), but the flip side is that they pay you based on what you paid, not on what your equipment is currently worth. If an earthquake hits, or your Mac is stolen from an "unattended vehicle," you're out of luck. (Don't leave portable computers in cars!) Most other situations within the US are covered. When I had a PowerBook, I insured it with Safeware. PowerBooks are big theft targets, and if your computer's stolen, you lose much more than a motherboard. After switching to a desktop I dropped the insurance. Safeware also offers $4,000 worth of coverage for trips outside the country at $90 for 90 days. If you want to insure used equipment, verify their willingness to cover it.

Safeware
Computer Insurance
(800)-SAFEWAR [723-3927]

Back Up!

There is one form of insurance that only fools lack: a backup of all their data. Everything "on" your computer is a fragile pattern of magnetic domains on your hard drive or similar medium; and every single hard drive, floppy disk, and tape cassette ever made will fail eventually. If you are lucky, your drive won't die until a few years after you have stopped using it, but it could flake out tomorrow. Everyday tasks like updating your system software can do the trick. Making your hard drive permanently unrecoverable is a moderately difficult task, but making it unrecoverable in practical terms is easy. It just takes a software problem severe enough to require professional help. The pros charge hundreds of dollars and make you wait days or weeks. Most people can't afford that. Most people also don't back up their data.

There is one form of insurance that only fools lack: a backup of all their data.

If you own a computer and do not have a current backup of your data, put this article down right now, go back up the important stuff, and then return to finish reading. If the data is moderately important, keep a disk or printed copy off site. Or email one to a friend across the country. Or all three. I know of a woman whose dissertation was almost finished when her apartment burned in the East Bay Hills fire. All the copies were in the same room as her computer. Last I heard she was waiting tables. She will never complete the PhD. If she had left a copy with a friend, she might be up for tenure by now. Don't be a fool. Don't lose hours, days, months, years of work—of your life. Back up!

Thanks...

A lot of people worked hard to create this guide. Without BMUG and its members and staff, it would not exist in any form. Kelly Pernell came up with the idea of turning a BMUG newsletter article into a stand alone product, shepherded it (me) along, and made tables for the first edition. Ann Wrixon, David Schnider, Kevin Lockey, and Colleen Miller provided wonderful support. The infinitely patient Emeline Mann Sanchez worked overtime to turn a pile of words into a published piece. Peter Johnstone, Carol Haberberger, Mitch Huitema, Ron Hunsinger, and Joyce Steinlauf all took the time to read it and offer feedback. Collectively they and the BMUG staffers who read it suggested countless improvements to the final work.

Sam Penrose's literary endeavors are greatly hindered by his delight in all things Macintosh and BMUG. He would love critical feedback on this article via email to sam_penrose@bmug.org. If you would like personal advice on buying Macs, he prefers that you ask in the Mac Price Conference on BMUG's BBSes, where he is one of several regulars.

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Power Computing, Just Don't Do It

Or "Are you experienced?"

by Ted Dively

At the end of January 1996, I purchased a "Most Valuable Buyer" (MVB) bundle from Power Computing—a Texas company that keeps moving, and is now, I believe, operating out of CEO Kahng's basement. For the record, what follows is the contents of the "MVB" bundle: a PowerWave 604/150 mini tower PowerMac clone with 16 Megs of RAM, a 1.2 Gig hard drive, a 4x CD-ROM, several expansion slots, 4 Megs of VRAM, keyboard, mouse, all the other typically useless junk (encyclopedia I'll never open, demos, etc.), Director 4.0, XRes, Authorware, and Extreme 3D. Now, sit down children, and pay close mind to what I'm about to say, because herein begins the long, sad saga of my Power Computing experience.

An Approximate Timeline Told Mainly in Present Tense:

January

- I spend a pleasant couple of hours the day before the opening of Macworld Expo in January, visiting with vendors of all kinds, and have a wedding invitation-style flier pressed into my hand, advertising a special "Most Valuable Buyer" computer bundle from Power Computing (PC).
- I read the "invitation" during my bus ride home that day (sitting next to the wonderful little LaCie Silver Scanner DTP I'd won as a door prize) and am impressed with what Power Computing is offering, especially for the price. However, I'm a skeptical person, so I plan to investigate PC's product, snoop around their booth, and generally pester the engineering team with technical questions during the rest of the week's festivities.

They tell me my PowerWave should be shipped within the next five to seven working days, as they're building machines to order. Ooh! Sounds a little like I imagine ordering a custom Pontiac GTO in '67 must have been.

- After having Sam Barone (ex–Apple engineer) satisfy my concerns regarding the soon-to-be-available PCI-to-NuBus adapter card for the PowerWave 604/150, and seeing how well their Mac clones function, I pretty well decide to invest in this little marvel. I'm already in a spending mood, as my old reliable IIsi is getting pretty long in the computing tooth, so the clone experience sounds like a bit of great luck and timing. Since the offer from PC is good through January 31, I decide to speak with my banker (Kelly Gahagan, at what was then First Interstate, a warm and helpful woman) about financing for the 604/150 before committing to a purchase.
- With my loan all set up, I phone PC near the end of the month, and "sign on the dotted line" as it were, giving them my business credit card number (this is important to remember). They tell me my PowerWave should be shipped within the next five to seven working days, as they're building machines to order. Ooh! Sounds a little like I imagine ordering a custom Pontiac GTO in '67 must have been. I dive into my work with renewed vigor.

February

- Two weeks go by, and no shiny new PowerWave arrives. Where could it be? I call PC, and am told it's held up on the manufacturing floor, but it should be out the door in a couple of days. I return to my work,

Of course, in the time it's taken PC to fill the back orders for this little "MVB" bundle, Macromedia released Director 5.0, which dulls my shrink-wrapped Director 4.0's luster.

feeling a little deflated, but still hopeful I'll have the puppy up and running by the third week of February.

- Another week and a half slips past, and guess what? That's right, no nifty new PowerMac clone has graced my doorstep. I call PC, and this time, I'm told there's a "hold" on my credit card. Alarms go off in my head, so I ask to speak to a manager. My sales guy says none is currently available, but when one is, he'll have that person call me at my office. I hang up the phone and try unsuccessfully to raise one eyebrow Dr. McCoy style.
- With March fast approaching, I bully my way up to a customer service rep on the phone, and I finally ferret out the real story—you won't believe this—that my order is still on hold because of some "problem" with my credit card. After almost an hour of badgering the customer service rep, I convince him to read my credit card number to me. Guess what? You've got it: they had mistranscribed the number when I originally dictated it to them. With the credit card mess straightened out, and after much apologizing on their part (the folks at PC are very good at apologizing, as you'll see.) they swear the computer will be in my hands within five working days.

March

- Well, bust my britches! The PowerWave arrives during the middle of the next work week. Yee haw! I decide life is good.
- I rush the new PowerWave to my office, close the door, rip open the box, and dig out all the goodies. But wait a minute, where's the super-macho XRes-Director-Authorware-Extreme 3D bundle? Hmmm...I leap for the phone, and in a few minutes, the PC customer service rep is murmuring apologies, and promising that as soon as the boxes arrive (they've been back ordered) they'll ship my stuff. I understand back orders, so I hang up the phone and cheerfully hook up my new PowerMac clone.
- Ten minutes into testing the new computer, it freezes while I'm copying something from a CD-ROM to the hard drive. When I restart the machine...the Chimes Of Death. Oh no! Bad RAM!!
- After a mercifully brief phone call to PC's tech support (they neglect to ask me how I isolated the bad RAM, or to chide me for popping open the chassis on my brand new computer) it's agreed that PC will ship me a replacement DIMM ASAP, which turns out to be...
- Five days later the replacement DIMM arrives, and I notice it's from TechWorks, my fave third-party memory supplier. Whew! Now I feel better. I pop in the new DIMM, and low and behold, I'm back up to 16 Megs of RAM, and once again, life is good.
- Time check! My calendar says it's mid-March. So, after almost seven weeks dealing with Power Computing, what do I have? I have all the hardware as promised at the beginning of January, except for the PCI-to-NuBus adapter card, which has been delayed because of further testing (okay by me), and I have all the other goodies, except for my supremo multimedia bundle of XRes, Director, Authorware, and Extreme 3D, which is still back ordered.
- After a couple more calls, and two more weeks, my software finally arrives. Woo ha! Of course, in the time it's taken PC to fill the back orders for this little "MVB" bundle, Macromedia released Director 5.0, which dulls my shrink-wrapped Director 4.0's luster. I call PC, and ask if they'd be willing to pop for the upgrade to Director 5.0, since it took them most of two months to get it to me. Nope, sorry bub, but no can do. I ask them if they'll do the right thing just to make me happy and keep my mouth shut about all my PC-related hassles. In reward for my patience, Pow-

[M]y order is still on hold because of some "problem" with my credit card. … After almost an hour of badgering the customer service rep, I convince him to read my credit card number to me. Guess what? You've got it: they had mistranscribed the number when I originally dictated it to them.

er Computing tells me to shove off. I swallow bile and begin the wait for the arrival of the PCI-to-NuBus adapter card.

April

- Near the middle of April—that's right, April—my PCI-to-NuBus adapter card finally arrives, and once I install it and my old Digidesign AudioMedia II card, my PowerWave 604/150 finally seems complete.
- One day, while riding the train downtown to a client site, I meet a nice guy who has just finished helping Aladdin launch StuffIt Deluxe 4.0, and after hearing the short version of my story (and much chuckling on both our parts) he suggests I contact Bob Levitus (who has been "evangelizing" for PC) tell him my tale, and, you know, ask him if he'll take care of strong-arming them into paying for my Director upgrade. I say that's a great idea, but I know inside that I'm too worn down by PC to bother calling Dr. Bob.

I phone Fed/Ex with my tracking number, and they assure me that my package was delivered to a B. Patterson in Cleveland, Ohio at noon that day. What?! But I'm in San Francisco! "Sorry sir, call the shipper."

May

- Time goes by, and other than dealing with Apple's stupid System 7.5.x software (not to mention Open Transport) fiasco, my PowerWave 604/150 hums right along.

July

- When the price of memory bottoms out, I add 48 Megs of memory to my clone, turning it into a real production powerhouse. I use the clone mainly for audio production on CD-ROMs for my second little start-up company, and once again, life is good.

September

- When a five year old 400 Meg hard drive I'd been using to house my audio applications, literally goes up in smoke, I buy a second internal hard drive for the clone, and within five minutes of installing it, discover the joys possible with a combined 3 gigs of storage space.
- Late in the month, I decide to shop around and see what it would cost to purchase an internal Zip drive for my desktop Mac, because I want to eliminate all the plugging and unplugging associated with my external Zip. Once I install an internal Zip drive in my PowerWave, my external one will be 100% available for travel to client sites, so I pick up the phone and begin my search for the elusive internal Zip. I call ComputerWare in San Francisco, but the ever-helpful and friendly staff (Eric, Homan, Joe, and the rest of the gang) there can't help me, as they aren't yet selling the internal Zip drives. Guess who I end up having to call? That's right! Our old pals, Power Computing. Reluctantly, I dial their sales number, and of course they'd be happy to sell me an internal Zip drive for my PowerWave. I make the sales rep read my credit card number back to me twice (with expiration date). PC promises me that my new component will arrive no later than Friday the fourth of October. I hang up the phone feeling not at all assured about my decision. In fact, it is September 27, 1996, and I'm worried.

The problem is that Power Computing just can't seem to get its sales and customer service act together.

October 9

- October 4 comes and goes, and my internal Zip drive doesn't cross my threshold. I phone PC the following Wednesday, and after much apologizing, they inform me they were back ordered, but that my drive is in line to go out the door that day. I am given a Federal Express tracking number just in case. I worry some more.

October 10

- After the Zip fails to materialize by 3:30 on Thursday, I phone Fed/Ex with my tracking number, and they assure me that my package was delivered to a B. Patterson in Cleveland, Ohio at noon that day. What?! But I'm in San Francisco! "Sorry sir, call the shipper." Now my hackles are really up.
- At 5:30 PDT, I phone Power Computing's customer support line, and I reach Wes, who is properly apologetic. Wes checks his database, and he notes that my order was placed on September 27, and that, yes, there are plenty of the Zips in stock, so he'll make sure one goes out that day. I should have the drive in my hot little hands no later than 3:30 Friday. He doesn't understand why my order hasn't yet shipped, or how I could've been given a tracking number, but he's very sorry about the mix-up.

October 11

- I arrange my day on Friday the 11th, so I'll be in my office all day to sign for the Zip. It doesn't arrive, so I call Wes at PC, and while he can't account for the "why" of the situation, gosh, but he's sympathetic, and he'll have his supervisor (boy, are supervisors hard to reach at Power Computing) expedite the order on Monday so it'll arrive at my office on Tuesday. Wes, I'm a reasonably patient man, but I'm getting pretty mad. "Yes sir, I understand."

October 15 (The Present!)

- Well, needless to say, here we are on Tuesday, October 15 (18 days since I ordered the bugger) and it still hasn't arrived. I called Wes at 3:35 my time, and he said he just couldn't fathom why my Zip was still sitting in Texas, but that he really had hand-walked the order to his boss, strongly impressing upon that person the nature of my situation. I asked Wes if I could speak to a supervisor, to which he replied they were both on the phone, but that as soon as one was available, he'd hook us up. I vented a little of my anger at Wes, and told him that if a supervisor from PC didn't call me back within forty-five minutes, we could forget the whole sale, and I'd never recommend Power Computing to anyone—ever again. Wes apologized, and told me he'd have someone call me pronto.
- When 4:30 rolled around, and I hadn't heard from Power Computing, I called Wes, told him to cancel my order, and explained that PC had blown it. Sure, it was only a dinky $149 purchase, but I'd had enough of Power Computing. All Wes could do was apologize. Sheesh.

In the final analysis, my PowerWave 604/150 is a great little computer; it's flexible, reliable, and certainly blows away Apple's offerings for the price. The problem is that Power Computing just can't seem to get its sales and customer service act together. I realize my scenario is a bit extreme, but just imagine the trials less adroit computer buyers probably undergo when dealing with companies like PC, that show absolutely no respect for them. I sincerely wish Power Computing well; all I ask is fair, respectful treatment. Power Computing seems to have forgotten the maxim I tell myself every time I meet with a client: the customer is always right. I know we've heard it a thousand times, but it seems not every business really listens.

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The File System

MacCyclopedia

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The format of information stored on a disk is called a file system, and the choices made when Apple created the Mac's file system have a lot to do with what's right and what's wrong with using disks—especially large disks—on the Macintosh today.

All About Disks, Volumes and Blocks

There are certain parts of the Macintosh everyone uses. You may not use laser printers or QuickDraw GX or QuickTime or even a traditional mouse, but every Macintosh user has to deal with disks—a hard disk, or floppy disks, or maybe both. There are also CD-ROMs and networked disks, but we're talyking about the kind of disk you have in front of you and that you can both read and write. That's where the fun begins.

A disk is a collection of stored information, but it has to be organized in some way—if it was just a random collection of bytes, like a bunch of unnumbered index cards that had been shuffled and handed to you, you'd never be able to find anything. The Macintosh has a similar problem—it has to organize information on disks in ways that make it easy to use. The format of information stored on a disk is called a *file system*, and the choices made when Apple created the Mac's file system have a lot to do with what's right and what's wrong with using disks—especially large disks—on the Macintosh today.

To understand why that's so, we first make an imaginary trip to a college writing class to understand how a file system works.

File Systems Explained

Imagine that you have one of those "blank books"—a normally bound hardcover book with nothing but blank pages in it. Now imagine that you need to keep records about everything you do for several weeks in that book for a college project. If you're like most people, you'll probably start writing on page one, and continue writing until you reach the end. You'll probably use blank space—your professor requires each day's entry to start on a new page, so if the previous day's entry leaves half a page blank, that space is lost to you.

This is a very neat and tidy way to organize things—until you get to the end of the book before you reach the end of the assignment and your professor says that you only get one book. Now what do you do? You can't use the empty spaces left on some pages. Your professor forbids buying a new book and recopying or editing your work; part of the assignment was to fit the work in the book you bought.

But wait—you included weekend days, and you find out now that you didn't need to do that. So you go back and erase the weekend days to use the space for days you have yet to live. This, unfortunately, doesn't work out as well as you'd hoped—the first weekend you erased left four pages free, but your Monday description required five pages, so you had to continue it on the first page of the second erased weekend, skipping a whole bunch of pages in the middle. This is leaving your book a confused mess; without page numbers (which the book thankfully had pre-printed on each page) your professor would never be able to follow it.

Fast-forward. You're nearing the end of this weeks-long assignment and you run out of pages again—part of the assignment was to chronicle everything in the limited pages given, and you're not doing very well. With just a couple of days left, you need a few more pages of space, so you decide to go back and erase some holiday entries you'd wanted to keep but which were extraneous to the assignment. When you turn in your project, you've fulfilled the rules but created one spaghetti mess of a book—interspersed with a linear narrative of the days are pages from weeks in the future, added when you had to go back and erase. Sometimes you'll run into something from even farther in the future from the second set of erasures. Your writing is good, though, so your professor gives you a "B-" despite the non-linearity of the work.

Why would any sane person want to do this? They wouldn't—but the concepts work well when trying to understand how your Macintosh (or any computer) keeps information on a disk drive.

A disk is like the blank book—it has a given capacity, and that's it. Just as you can't add pages to a hardbound book, you can't make a floppy disk or hard disk hold more information than it was created to hold. When storing information, the computer has to do it in some kind of order—if it just squeezed in bytes anywhere they'd fit, it'd be the logical equivalent of scrawling in the margins of the blank book when you ran out of pages. It might cram in some more information, true, but it would become so confused and difficult to follow that you could easily question how useful it was.

The computer has to divide information on a disk into discrete units so they can be managed. You already know that your disks are organized by *files*, each of which contains a hopefully-related collection of information. Internally, although you never see it, the disks are divided into something called *allocation blocks*, which is the smallest unit of the disk that the Macintosh OS will use (or "allocate"). Files are collections of blocks. In our blank book example, a file might correspond to one day's entry in the book, and blocks correspond to pages in the book. One day's entry might contain anywhere from one to a dozen pages, just as files may contain any number of blocks, from none to almost all the blocks on a disk. The professor's rules about starting a new day on a new page mimic a file system rule, also—each block belongs to exactly one file, just as each page belongs to exactly one day's entry. That's why you sometimes see the Finder telling you that a file takes several K on disk with only a few hundred bytes used. If the data goes over the amount that fits in one block, by even one byte, the Macintosh has to allocate another block to the file to hold the (even one-byte) overflow. We'll discuss how much actually fits in one block later on.

A disk spends blocks on more than just your files, though. With the blank book, a human being can read it and discern by visual clues where one day's entry begins and another one ends. A computer doesn't have that kind of information; it needs to keep track of which blocks belong to which files, and it uses (guess what?) more blocks to store that data. That's called a *directory*, and it's usually seen as a listing of the files it tracks. Directories directly map to the Finder's *folders*—each folder lists the contents of one directory. Directories are hierarchical—an entry in a directory can be for a file or for another directory. This makes a tree-like structure that needs a single top-level directory—that's the volume directory. A disk's window in the Finder shows the contents of that disk's volume directory.

From Simple To Complex

That's not terribly complicated, but it was slightly different when the Macintosh was first released. Even though the Macintosh has always had the ability to organize files in folders, just as we do today in the Finder, the folders weren't always "real."

Every file system has a name; common file systems are the MS-DOS File Allocation Table (named DOS FAT or DOS or MS-DOS), the Windows NT file system (NTFS) and the old Apple II ProDOS filing system (ProDOS). Sometimes the file system's name is nearly identical to the name of the operating system that uses it, but don't be confused—some computers can read MS-DOS disks without running the MS-DOS operating system, just as some programs can read Microsoft Word files without actually being Microsoft Word.

The original Macintosh file system was named "MFS," for (ahem) "Macintosh Filing System." MFS didn't allow for any directories except the volume directory. If you created a folder in the Finder, it was all "faked"—the system software knew in which "folder" your files were supposed to be, and so in the Finder and in Open/Save dialogs, that's where they showed up. (The folder was just stored as a number attached to the file's directory entry—if it was two, for example, the Finder would display the file in folder number two, whichever folder that was.)

It sounds like a perfectly logical and simple way to organize things, and it is—it just falls apart when you start adding lots of files. For 400K disks, and later 800K disks, this system worked adequately, but having hundreds of files in one volume directory becomes quite a burden on the part of the Macintosh OS that has to work with disks, called the *File Manager*.

Think of it this way—a non-booting 1GB data disk we use has 7,911 files on it as of this writing. If those were really all in one directory, the File Manager would have to walk through all those files every time you wanted to open a folder window in the Finder, looking at the stored "folder number" and asking each time, "Is this file in the folder I'm opening?" Opening a specific file might not be as bad—in a worst-case scenario for a sorted directory, the File Manager might have to look at 13 different files to see if

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If a hard drive is seriously fragmented, the disk drive may be spending a lot of time seeking from one fragment to the next when reading the file, and that could affect performance. … Most hard drives today are so fast that normal fragmentation isn't a real performance problem, and the File Manager uses something called "clumps" to try to keep some free blocks at the end of a file for later use.

the file you wanted was there or not, but that's still a lot worse than it needs to be. This became apparent as people tried hooking up the first (20MB) hard drives to Macs—MFS wasn't cutting it.

The best way to divide the files into groups that are more easily managed is to let there be more than one directory, and with the Mac Plus in 1986, Apple revised the File Manager to allow exactly that. It required an entirely new file system; this one was called "HFS," for "Hierarchical File System," and with a few enhancements it is still the same one used today on the Macintosh. It created the hierarchical directory structure described earlier—directories can hold files or other directories. Macintosh users generally apply self-discipline and keep the number of files in each directory (folder) reasonable; those who don't start seeing performance penalties when they get up to several hundred files in one directory.

HFS has a number of features (some inherited from MFS) that make it uniquely suited to Macintosh tasks. As discussed in last week's "File Kinds" article (MDJ 1996.09.24), every file's directory entry includes a four-byte creator type and four-byte file type, as well as the dates and times for the file's creation, last modification and last backup. Each file's directory entry also contains space for a 31-character name, much longer than the 15-character limit of ProDOS or the 8.3 limit of DOS. Each file's directory entry even contains the file's label (or "color" for earlier system software) and location within the Finder's window, so next time you open your window the file keeps the same color and position.

Directories are themselves stored as data structures known as B*-Trees; it's a fancy name for a fancy data structure that basically means it's pre-sorted by file name and easier to search. Directories are normally identified to the Macintosh by number (see "Aliases," MDJ 1996.09.09), so when a program asks for a specific file, the File Manager already knows in which disk and in which directory the file should be found. It then has to look at the files in that directory to find the one with the right name, and that's pretty fast thanks to the B*-Trees. The major trade-off is that *listing* directories is slower than it might be without B*-Trees; the designers of HFS figured that listing a directory's contents (like when you open a folder in the Finder or the Open/Save dialog) could be a little slower than opening files without making things seem "slow," and they're generally right. Still, you can see the difference if you have a folder with a large number of files in it.

Fragmentation

As you create files and directories on your disk, the File Manager allocates blocks to them from the pool of unused blocks, and everything goes pretty smoothly, at least in theory—until you run out of blocks. At that point the disk is full, and there's nothing more the File Manager can do until you delete files. But unless you delete the last files you added, won't deleting files only free blocks in the beginning or in the middle of the disk?

Yes, but that's OK. Think back to the blank book analogy—when you ran out of space in the book the first time, you went back and erased the weekend entries and reused those pages for new information. It's confusing to a human reader, but the computer doesn't care which blocks a file uses—all it has to do is keep track of them. So as you delete files, the blocks are available for general use.

In fact, many of the files on your hard disk are probably split into multiple chunks like this. In our story, we described a second round of erasing that split some late entries into multiple chunks (like the five-page "Monday" entry that took four pages from an old weekend set and one page from the following erased weekend). Many of your files are that way because the File Manager doesn't wait for the disk to be full before it reuses empty blocks.

Allocation blocks are numbered, and the File Manager allocates the lowest-numbered free block when a new block is requested. If you need to save a file that would take ten blocks on your disk, and five blocks in a row are free near the beginning, followed by one block later on, and then a stretch of four near the end, then those are the ten blocks the file will use if they're the lowest numbered. (Actually, the File Manager keeps a "hint" about where to find the most free space, and it will start searching there instead of at the beginning every time—that keeps it from looking through blocks that are usually still allocated.) Programs can sometimes take steps to make sure they get blocks that are next to each other, so your disk drive doesn't have to skip around to read the file, but doing so makes it harder to store large files if that much contiguous free space isn't avail-

able. Files whose blocks don't have consecutive numbers are said to be *fragmented*, or discontiguous.

Utilities like "Speed Disk" from Norton Utilities can process your entire disk and rearrange all the blocks so that every file's blocks are contiguous, and so that there are no "holes" with unused blocks before the end of the disk. That's called "optimizing" or *defragmentation*, since it takes fragmented files and puts them back into one unbroken set of blocks. If a hard drive is seriously fragmented, the disk drive may be spending a lot of time *seeking* from one fragment to the next when reading the file, and that could affect performance. It's much more serious on disks that have long "seek times," meaning it takes longer for the disk to get from one part of the disk to another. Most hard drives today are so fast that normal fragmentation isn't a real performance problem, and the File Manager uses something called "clumps" to try to keep some free blocks at the end of a file for later use. Even so, people who are using slower media should consider it. Those who are producing CD-ROMs should certainly look into it, since CD-ROM drives have slow seek times.

Limitations of HFS

We don't mean to make everything sound like roses, because there are serious problems with both HFS and the File Manager, and they're behind some of the most vociferous complaints from people who want Mac OS 8 today.

The File Manager itself is, to be polite, a horribly unkind piece of code. It's been patched and amended over the years to handle all kinds of things for which it wasn't designed. It still handles MFS volumes for compatibility, although with limited support. It's hard to use it *asynchronously*, which means that programs have to wait for it to finish tasks before going on in most cases. More importantly, it's mostly written in expert but difficult 68K assembly language and is hard to port to PowerPC, so it's still not PowerPC-native.

Most importantly for the future, it's not *reentrant*; software can't ask the File Manager to do anything if it's already in the middle of doing something. That means pre-emptive multitasking code can't make File Manager calls because the File Manager might be busy, and that's a big hurdle towards the kind of pre-emptive multitasking Macintosh users want.

[T]here are serious problems with both HFS and the File Manager, and they're behind some of the most vociferous complaints from people who want Mac OS 8 today.

It's not very modular, either—the definitions of HFS and MFS are part of the File Manager. Compare this to the newer, more modular "File System Manager" component that allows things like Macintosh PC Exchange to add new file systems like MS-DOS and ProDOS to the system. HFS and MFS can't be replaced, and everything else is like an unwanted neighbor child to the File Manager. If it can't recognize an HFS or MFS volume, it gives one last chance to external file systems before it returns an error, and all the external code has to live off that one last chance. There's no potential for shared use of common code or anything like that.

The file *system* HFS isn't too bad, but there's a serious limitation within it that drives lots of Macintosh owners absolutely batty. Due to the way computer programming works, most numbers have upper limits because a fixed number of bytes is used to store most numbers. For example, a file's name must fit within 63 bytes in a directory structure, and that means the name can't be more than 31 characters long (some non-English writing systems require two bytes for each character). The number of blocks on a disk is limited to a two-byte field, and that means there can only be 65,536 allocation blocks on an HFS disk. That's trouble.

Back to the blank book writing assignment—if your professor limited the size of the blank book to 200 pages, and you knew from past writing assignments that you'd have difficulty living within those restrictions, the logical (or sneaky, depending on your viewpoint) way around it would be to buy a 200-page blank book with larger pages. That way you could fit more on a page. The drawback is that if you end an entry with two lines on a page, you've wasted a lot of space.

HFS has a similar problem. The smallest allocation block size is 512 bytes, or half a K. If allocation blocks were limited to that size, no volume could be bigger than 32 MB (this is the case with ProDOS). HFS's designers saw that one coming, as 20MB hard disks were normal but expensive options as they were designing the new file system. Calculations would be slower in many cases if the number of allocation blocks went to a four-byte field, and if they increased the size of the allocation blocks they'd be wasting more space than necessary, just like a two-line entry on a larger page wastes more paper in a blank book.

Their compromise was to make the allocation block size variable—by default, the size of the volume in bytes is divided by 3,358,720 (that's 512 bytes multiplied by the limit of 65,536 allocation blocks), the fractional portion is dropped, and the remaining integer gets one added to it. At the lowest level, Macintosh disk devices always deal with 512-byte blocks, and this calculation gives the number of 512-byte blocks in each allocation block. Multiplying by 512 bytes again gives the number of bytes in each allocation block.

For example, our previously-mentioned 1 GB disk actually is 3.2MB shy of 1 GB (1,070,383,104 bytes instead of 1,073,741,824 bytes) for various reasons involving partitioning and whatnot. If we divide 1,070,383,104 by 3,358,720 we get 31.90. Dropping the fractional part and adding one gives 32 512-byte blocks in each allocation block, or an allocation

block size of 16,384 bytes (16K). That matches what the Finder says—a two-byte file on a drive just under 1 GB in size reports that two bytes are used for 16K on disk.

As with the larger blank book pages, this is a tremendous waste of space—the compromise that worked well in 1986 is very annoying in 1996. The Finder won't even tell you how much space you're wasting—while getting info for a folder tells you exactly how many bytes are used vs. how much disk space is occupied by the files, getting info on a disk returns the number of bytes occupied by all of the blocks allocated, not the number of bytes used by all the files. Looking at some folders will tell you how much space is wasted—for example, we found a folder using 30,972,700 bytes with 958 items, but thanks to the 16K allocation block size, the folder's files were occupying over eleven megabytes more space than the files needed.

The rule that one block belongs to only one file makes this kind of space wasting inevitable to *some* degree, but this degree is excessive. That's why many Macintosh owners *partition* large hard drives into smaller volumes—the smaller the disk appears to be, the smaller the allocation block because smaller blocks will still cover the entire range of the volume within the limitation of 65,536 allocation blocks.

This gets kind of tricky, so take a deep breath. The last block of almost every file is only partially used—if file sizes were randomly distributed on our system, there's only a one in 16K chance that a file's size would be an exact multiple of 16K and completely use all its allocation blocks. If we cut our volume size in half, to just under 512MB, the allocation block size would also be cut in half to 8K. Assuming a random distribution of file sizes again, roughly half the files on our existing disk end in the first half of the last block (the first 8K), and the other half end in the last half of the last block (the second 8K). If the allocation block size was only 8K, then, half those files wouldn't need one 8K allocation block, so we'd get back roughly half the wasted space.

Therefore (resume normal breathing), for a quick-and-dirty *estimate* of how much space you'd save with an allocation block size that's X% of your current allocation block size, first get the amount of wasted space (try moving the entire disk into a folder on a larger disk if you can and using "Get Info") and then take (100-X)% of that number. Going to a volume size where the allocation blocks are 30% of your existing allocation block size would give back roughly 70% of the wasted space. You won't actually get that much space back by moving to smaller partitions; there will be some overhead as you have to make duplicate directories and such on any new partitions, but it's good enough for a quick-and-dirty estimate. Theoretically, a program should be able to calculate exactly how much space you're wasting and give better estimates for smaller partitions, but we didn't find such a program in the Info-Mac archives.

[M]any Macintosh owners partition large hard drives into smaller volumes—the smaller the disk appears to be, the smaller the allocation block because smaller blocks will still cover the entire range of the volume within the limitation of 65,536 allocation blocks.

The Future

One of the top-level features of "Copland," the feature set promised for Mac OS 8 before Apple changed strategies back in August (MDJ 1996.08.12) is a new File Manager and new file system that addresses most of these concerns.

The new File Manager is to be completely PowerPC-native, completely reentrant and completely modular. Existing file systems like HFS and MS-DOS (and perhaps even AppleShare) will be implemented as modules on top of core file system code. Because it's fully preemptive multitasking aware, other parts of the system can do useful tasks while the File Manager is waiting for disk devices to finish reading and writing information. Today, that takes specific and complicated code on the part of applications, and even then only those applications can do other things; other applications can't get control while today's File Manager is running.

Apple has not promised a new file system, though—for compatibility reasons, the native file system of the Macintosh will still be HFS. Apple says the new File System can handle arbitrary lengths for file names and volume sizes up to 32,768 times as large as existing HFS, but when using HFS volumes we'll still have the same restrictions.

That's unfortunate. The new File Manager's modularity will allow Apple or third parties to produce volume format plug-ins for other file systems, like

perhaps NTFS, which don't have these limitations, and that's something impossible to do under today's File Manager (every external file system has to live within HFS limits, pretty much). So while the new File Manager services that Apple intends to deliver in the future do not solve all the problems, they will definitely improve performance and lay the groundwork for a new file system that does the rest of the work.

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How to Break the Bandwidth Blues

by Kevin M. Savetz

You can't afford to wait. Your 28.8 kbps modem has taken you are far as it can go, and you're ready to move on to something faster. There are a variety of technologies which can help you do away with the bandwidth blues: each offers unique advantages—and special problems. Some are proven technologies, and others are barely out of the starting gate. Here we'll take a look at the choices and the issues involved in raising your Internet speed limit.

If you already have a 28.8 modem, you may be able to upgrade your modem to 33.6 at little or no cost. Contact your modem's manufacturer or check their Web page: you may be able to download a flash ROM upgrade or order a replacement chip to do the upgrade yourself.

***33.6 kbps modem

It is the least expensive option for breaking the 28.8 barrier is a 33.6 kbps modem, which can send and receive data 16% faster than 28.8.

*How it Works

33.6 kbps modems work almost exactly like 28.8 kbps modems do: they convert digital data to an analog signal for transmission across a phone line. On the receiving end, another modem translates the analog sound back to digital bits. 33.6 kbps modems simply use a slightly faster transmission protocol to do their work.

Unlike the other technologies listed here, a 33.6 modem will work with the same phone lines, the same wall jacks, the same "twisted pairs" of copper wire that your slower modem uses. This means no hassles getting new lines; you can just use the phone service you've already got.

*How to Get it

To get cruising at this speed, you'll need a 33.6 kbps modem, and so will your Internet service provider, preferably from the same manufacturer. Ask your ISP if they offer 33.6 access, and if so, what brand of modem do they use?

*How much it costs

If you already have a 28.8 modem, you may be able to upgrade your modem to 33.6 at little or no cost. Contact your modem's manufacturer or check their Web page: you may be able to download a flash ROM upgrade or order a replacement chip to do the upgrade yourself. Upgrading with flash ROM is extremely simple—just run a special program that updates the modem's internal software (called firmware.) On the other hand, a chip upgrade involves opening your modem's case and replacing a part yourself. (It may sound scary, but it's not difficult.)

If the company says that your modem really does max. out at 28.8, they may give you a discount on a brand new one. (Supra, for example, will replace your older 28.8 modem with a 33.6 one for about $75. If you are lucky to have a later version of that modem, you can download a firmware upgrade for free.)

Modems slower than 28.8 cannot be upgraded to 33.6. If you don't yet have a 28.8 kbps modem, you'll definitely have to buy a 33.6 to get the speed boost. A new 33.6 modem, such as the U.S. Robotics Sportster, will cost you around $250. Internet service providers generally do not charge extra for access at 33.6 kbps.

*Caveats/Vapor Factor

In reality, the speed increase over a 28.8 kbps modem is negligible. 33.6 kbps is 16% faster than 28.8 kbps. Although this speed boost is better than a sharp stick in the eye, it doesn't feel that much faster than 28.8 when you're online. The jump from 9600 to 14.4 kbps took modems 50% faster, and from 14.4 to 28.8

was a doubling in speed. By comparison, 16% just isn't that much of a difference.

Have you ever noticed that your 28.8 modem doesn't always connect at top speed, even when connecting to a comparable modem? This may be due to noise on the phone lines, and the faster your modem is talking, the less tolerance there is for noise. Your phone connection simply may not be able to eke out the quality for a reliable 33.6 connection. If your phone conversations have static on the line, or your modem connections are plagued by on-screen garbage or unexpected disconnects, you may have noisy lines.

***ISDN

ISDN stands for Integrated Service Digital Network, and is tech speak for "way fast phone lines." Actually, ISDN is more than that: unlike traditional phone lines, ISDN transmits information as digital data, not analog. As a result, ISDN can offer access speeds up to 128 kbps—4 1/2 times the speed of that ever-lagging 28.8 modem.

*How it Works

ISDN works a lot like a traditional phone line. In fact, it uses the wiring that's already in your home or office. However, the phone company will perform extensive testing and "conditioning" of your lines to make sure they can carry a signal that is clear enough for ISDN.

To get your computer talking with ISDN, throw away that modem: it won't do. You'll need an "ISDN router." The router works a like a digital modem, moving bits between your computer and your Internet provider's. If your router supports it, you'll be able to toggle between 64 kbps and 128 kbps—slower for e-mail and telnet sessions, but full speed for Web access and marathon FTP sessions. At 128 kbps, your data can move at four times faster than with a 28.8 modem, definitely a good clip (Using 64 kbps will be slightly less expensive if your phone company charges per minute for ISDN access.)

*How to Get it

Besides a router, you'll also need an Internet service provider that provides ISDN access—check first, although ISDN is growing in popularity, many ISPs don't yet offer ISDN access. Your phone company must also provide ISDN service to your home.

Although ISDN is growing in popularity, many ISPs don't yet offer ISDN access. Your phone company must also provide ISDN service to your home.

*How much it costs

ISDN can be expensive, but not prohibitively so. The cost depends on three highly variable factors: the price of your ISDN router, the Internet service provider fee, and the telephone company's charge. A router that can connect a single computer to the Internet will cost from $350 to $500. (The Motorola Bitsurfer Pro has a street price of about $389.) ISDN can also be a good choice if you need to connect a small LAN to the Internet: a router that is able to connect several computers at once can cost from $1000-$1500, such as the Ascend Pipeline 25.

Check with your local Internet service provider about fees—costs for ISDN access are all over the board. Rates range from $25 a month for all-you-can-eat access, to pay-as-you-go at $5 an hour. The industry simply hasn't settled on a typical price range for ISDN. You'll need to call your telephone company about fees—every phone company has its own idea of what ISDN is worth. Pacific Bell charges about $35 per month for home ISDN access, plus a penny a minute when you're connected during business hours (even if you are making a local call.)

*Caveats/Vapor Factor

ISDN is a very real technology, but it may not be available to you if your telephone company or Internet provider aren't with the program yet. Even if your phone company does offer access, you won't be able to get ISDN access if your site is located too far away from the phone company's switching equipment.

If you have the choice, try to get the same brand of router that your Internet provider uses. It is not essential, but you may be able to utilize extra features, such as compression, if you do. (This may be impossible: many ISPs have industrial-strength ISDN routers that don't come in home versions.) ISDN routers, like modern modems, can use compression to pack more data onto the line, giving an effective throughput of faster than 128 kbps. This works well with highly compressible data, like text, but does little good with data that is already compressed, like GIF and ZIP files.

Although most phone companies offer up to 128 kbps with ISDN, some max. out at 112 kbps due to technical limitations of their switching equipment.

Finally, some people are wary of investing in ISDN because it may be "leapfrogged" by faster technologies like ADSL and cable modems. This remains to be seen, but the fact is that ISDN is a reliable, widely available tool now, while some other technologies are either not ready for prime time or too expensive for home users and small businesses

***ADSL

ADSL stands for Asymmetric Digital Subscriber Line, an emerging technology that is getting a lot of press—and hype. When receiving data, ADSL is 52 to 139 times faster than 28.8. ADSL is slower when sending data, at 2 to 17 times the speed of a modem.

*How it Works

ADSL is the phone company's answer to cable modems: it provides ultra-fast data transfer. Depending on the type of ADSL system used, the service can transfer data downstream (to the user) at 1.5 to 4 megabits per second, and upstream (from the user) at 64 to 500 kilobits per second. Because of its lopsided transmis-

sion rates, ADSL may be an excellent choice for those who need to receive a lot of data, but not send huge amounts. This means it would not be practical to run a popular Web site over ADSL.

ADSL works over existing phone wires, and like ISDN, ADSL requires special equipment, a special connection to the phone company and an Internet provider that can feed the data.

There are an estimated 560 million copper telephone wires installed around the globe, but traditional phone service uses only 1% of the bandwidth the wires can hold. ADSL uses a different form of modulation to squeeze more information on a traditional phone line than is possible with standard voice calls and analog modems.

*How to Get it

Here's the problem—unless you are lucky enough to live in one of a few areas where phone companies are doing ADSL trials, you can't get it today. Systems are still being tested and the protocols are still being argued about. Some industry execs believe that ADSL will be available in many cities by the end of the year or early next near. This may be highly optimistic—more likely, it will be 9 months to a year before ADSL is readily available. GTE is conducting the industry's first ADSL trial for Internet access in the Dallas-Fort Worth area. Other phone companies are following: Bell Atlantic Corp., BellSouth Corp., SBC Communications Inc. and U S West have also announced ADSL trials. Metropolitan cities will be the first with ADSL access.

*How much it costs

Prices for ADSL routers will range from $500 to $2,000 depending on maximum speed and configuration. Installation of the ADSL line could be a major hurdle, at an estimated $3000. All of this new equipment is currently in very short supply, so prices should drop considerably in a few months as ADSL becomes more common.

The monthly service fee to the phone company will be low—likely a flat a fee under $50. The cost to the Internet service provider will likely be much higher—some ISPs only have 1.5 megabits per second to share between all their analog modem customers, so they will need to invest big bucks to upgrade their bandwidth and equipment. Indeed, most ISPs may stay out of ADSL altogether, leaving it to the phone companies to provide Internet access in addition to the line itself.

*Caveats/Vapor Factor

ADSL has promise, and although you may be ready for it despite its high startup cost, ADSL is not ready for you. ADSL won't disappear into the vapor, but it will be a few more months, maybe a year, before it congeals into a service that we can really use.

***Cable Modem

If you have cable television, you're already downloading hundreds of thousands of megabits of data every second in television signals. Wouldn't it be nice to harness some of that bandwidth to access the Internet? Cable modems can theoretically deliver data at up to 350 times the speed of a 28.8 modem—but in reality, you aren't likely to have all that speed to yourself.

*How it Works

In order to offer Internet access via the same wire that your television signals travel on, your cable company allocates part of its bandwidth (enough to carry a TV channel or two) to Internet packets. The cable company broadcasts incoming Internet packets to everyone, but unlike a TV. signal, which can be seen by anyone who is tuned to that channel, each Internet packet has an address which assures only its intended recipient will see it. (Your cable modem actually receives packets destined for all users in your area, but only accepts packets meant for you. This may cause concern to those of us who don't want others snooping on our Internet habits.)

Cable modems can provide up to 10 megabits per second of downstream access. Depending on the equipment you use, you will be able to hook a cable modem to your computer, or directly to your

There are an estimated 560 million copper telephone wires installed around the globe, but traditional phone service uses only 1% of the bandwidth the wires can hold. ADSL uses a different form of modulation to squeeze more information on a traditional phone line than is possible with standard voice calls and analog modems.

Depending on the equipment you use, you will be able to hook a cable modem to your computer, or directly to your television set so you can surf the Web using a special remote control.

television set so you can surf the Web using a special remote control.

*How to Get it

To get it, just call your cable company and say "I want cable access to the Internet." Then hold your breath for a long, long time. Today, cable Internet access is mostly in the testing stage. Although some cable companies are farther along than others, none are yet offering Internet access to everyone who can get HBO and MTV.

*How much it costs

Industry execs expect that cable modems will cost around $300. It is probable that when your cable company offers Internet access, it will rent the modem to you—or even loan it to you for free. The cost of Internet service is up to the cable company—expect no more than $30 a month for all-you-want access. Since the cable company will provide the Internet feed, there is no need for a separate service provider.

*Caveats/Vapor Factor

Cable Internet access is still vaporware. If it proves to work reliably, it will revolutionize how we access and use the Internet. But there are other caveats.

Unlike ADSL, ISDN and analog modems, cable Internet access is a shared resource. You don't get 10 megabits per second to yourself: you share it with the cable customers on several nearby blocks. If every cable customer logs in to the Net at once (not likely) your access speed will slow to a crawl. If you're the only one online (again, not likely) you get the bandwidth to yourself. For most uses, 10 MBPS is more than enough to share with a few of your neighbors.

Sending data over cable isn't as easy as receiving it. Upstream data tends to attenuate as it travels to the cable company, getting lost under the stronger downstream television signals. Some companies believe they can deal with the problem, offering slower upstream access (like ADSL does.) Others will skirt the issue by offering a hybrid system—incoming data comes via cable, but outgoing data travels on your phone line via a traditional modem built in to the cable box. For web browsing and news reading, this situation may work nicely, although it does tie up your phone while you are online.

*Fractional T-1/T-1/T-3

If you're ready for a full-time connection that can send and receive data at a hare's pace, you may need a T-1, fractional T-1, or T-3 Internet connection. A T-1 line offers 1.544 megabits per second, more than 50 times the speed of a 28.8 kbps modem, and a T-3 will give you a blistering 44.7 megabits per second—28 times faster than a T-1. A fractional T-1 is a slice of a T-1 that can deliver from 56 kbps to the top speed of 1.544 megabits per second.

*How it Works

T-1s and T-3s are very fast dedicated circuits that move information between two points. They are useful for companies that need to have 24-hour Internet access with a lot of bandwidth. As you no doubt expect by now, you'll need special equipment, including a router and a CSU/DSU (Channel Service Unit/Digital Service Unit).

*How to Get it

Your phone company provides T-1 and T-3 service today, and many ISPs provide dedicated Internet feeds. You will probably need an experienced consultant to help you sort out the hardware choices, or perhaps your service provider will help you with those decisions.

*How much it costs

Once again, your cost will vary considerably depending on your phone company, Internet provider and speed needs. Here's a guideline: T-1 access is really expensive, and T-3 access costs are in the stratosphere. A T-1 line from Pacific Bell costs about $1,000 to set up plus around $700 a month. High-speed Internet service from a reputable provider costs an additional $3000 to set up and $1,500 each month.

*Caveats/Vapor Factor

High-speed dedicated access is expensive and complicated to set up and maintain, but it is a proven technology. If you need to run your own Internet servers, this is the way to go.

High-speed dedicated access is expensive and complicated to set up and maintain, but it is a proven technology. If you need to run your own Internet servers, this is the way to go.

I asked six Internet trendsetters for their opinions: What technology will emerge as the leading broadband solution and when can home consumers expect to reap its benefits?

Avram Miller

VP Business Development, Intel

I don't think there will be a single solution - I think the two leading solutions will be cable modems and ADSL. My guess is that it will be evenly divided between the two. 20 to 30% of the PC homes in the United States will have broadband capability by the end of the decade, by the combination of those two. I think satellite technology will play am important role in the US, but because of its late start, satellite won't play a dominant role in the US.

Expanded to the rest of the world, wireless solutions for broadband access will be the predominate method. In Asia, China, India, the developing markets, satellite communications will be very prevalent. With very large populations, the communications infrastructure to reach all those people in a wired way will be very expensive. Satellites will preclude cable.

The good news is that someday in the future - certainly in the U.S. - we will have a choice of how we will receive information.

John S. Quarterman

Editor, Matrix Maps Quarterly and Matrix News, *http://www.mids.org.*

ISDN is currently the most popular. It might not seem a lot faster than 28.8, but a reliable factor of two is as much as 28.8 over 14.4. And ISDN has much less latency than any modem, plus very fast redial. It's somewhat surprising that ISDN languished for years with little use, until you think, who would you have called with it? It really had no application before the Internet. Now it does.

Cable modems are an interesting idea, but to my knowledge no cable company has yet mastered both sufficient manufacturing capacity for the cable modems and the logistics of deploying them. Presumably some of them will get their act together eventually.

I'd bet on ADSL as a more widespread solution, however.

Mike O'Dell

VP and Chief Scientist, UUNET Technologies, Inc.

There probably won't be just one, assuming there are any. It's not at all clear that "fast connections" will ever be "cheap connections", at least not in the way many folks are dreaming about. Does the phrase "Power too cheap to meter" ring a bell? How about "Free, unlimited bandwidth"?

Bill Gram-Reefer

President, WORLDVIEW

ISDN is DOA. Pac Bell's plan is to use cable modems where its fiber backbone is installed and ADSL modems over copper in other areas until the fiber shows up. It will be mix and match to get the job done, although ADSL has advantage until cable companies get more two-way cable installed.

David Hakala

Managing editor, Boardwatch Magazine

Cable. 18 months.

Reason one: it's going to be the fastest solution of the ones currently proposed. Two: cable companies very badly want a piece of the Internet action. Three: they are more competent than the RBOC's [regional phone companies.] The @Home cable service is already being market tested. ADSL still isn't anywhere and 33.6 does not work over normal phone lines. It is not viable. You get a 16% increase about 10% of the time.

Robert Metcalfe

Executive Correspondent, InfoWorld and VP Technology, International Data Group

The *important* thing about cable modems, ADSL, ISDN, etc. is not technological, but that *competition* be unleashed among them and other technologies, which means we have to de-monopolize telecommunications. Allowing telcos to buy one another and to buy cable companies is *not* what we need, and should be stopped. ISDN is our best short term solution beyond 28.8, and look how the telco monopolies have botched that for the last 20 years.

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A Confederacy of Disks

Trials and Tribulations in the Search for a Homebrewed Fast Disk Solution

by David Hauer

Ever lust after a faster hard drive? Even if you're not among those such as desktop video mavens—whose work *demands* massive throughput or lightening fast access, chances are good that if you have a slow disk system, it is presenting a bottleneck somewhere. Photoshop users, for example, are forever opening and saving large files and the program resorts to a scratch disk whenever it runs out of real RAM. Many of Photoshop's activities then become heavily dependent on the disk system. Likewise with 3-D rendering, sorting or searching through large databases, and a host of other fairly common tasks like duplicating a file, involve heavy disk access. (Actually, it turns out that inefficiencies in the Mac file system may be the limiting factor in some of these operations. But forget about that for the moment.)

If you need top performance, you can spend thousands of dollars on an array of fast drive mechanisms and a Fast & Wide SCSI card. Those of us whose requirements are more modest have some other options, however. With the price of hard drives in free fall, and now that many mainstream Macs come with a Fast SCSI bus (theoretically capable of 10 megs per-second throughput), a basic array can be assembled for well under $500. All that's required is a second hard drive to match your Mac's existing internal one and a RAID utility such as FWB's RAID ToolKit, Charismac's RAID Utility, or Trillium Research's Remus. (RAID stands for Redundant Array of Inexpensive Disks or, in some quarters, Redundant Array of Independent Disks. I've heard that the first of these is the original, but a lawsuit charging that one vendor's drives were not, in fact, "inexpensive" forced a change. But this may be apocryphal.)

Plop the drive into your Mac's internal SCSI bus (the 7500, 7600, 8500 and 9500 all have these Fast SCSI buses, as do a number of Power Computing's models), set up a RAID Level 0 (striped) array (after backing up of course), and there you are. Striping can almost double your throughput and access times—up to the limit of the bus, that is.

With the price of hard drives in free fall, and now that many mainstream Macs come with a Fast SCSI bus (theoretically capable of 10 megs per-second throughput), a basic array can be assembled for well under $500.

At least, that's the theory. I tried it, and it didn't quite work out this way. In attempting to account for my initial disappointing results, I spent an enormous amount of time initializing drives, copying software between volumes, and running disk tests of one sort or another. I also spoke with literally dozens of people at Quantum, Apple, FWB, Charismac and Trillium Research, whose responses ran the gamut from bureaucratic intransigence to helpfulness to awesome technical savvy. I currently have a working array—though it's not as fast as I hoped. I also made some interesting (to me) discoveries. Maybe someone else will find them interesting as well.

Note: What follows is a fairly long account with a good deal of technospeak (and no pictures). Those who do not find such treatises edifying would do well to jump to the conclusion—or perhaps to the next article.

In the Beginning

The story begins with a friend offering to trade me two matched Quantum Fireball 1280s 1.2-gig drive mechanisms for my 7500's stock 1-gig Quantum and a generously small amount of cash.

Serendipitously, I found a copy of FWB's RAID Toolkit for sale very reasonably. So I backed up my internal onto an old 840-meg external Seagate I happened to have around—the possession of which proved quite fortuitous, as we will see, and some 270-meg SyQuest cartridges, then made the switch. The 7500's design makes installing a second drive

very simple as long as you want it to run off the internal SCSI bus. Ultimately, my idea was to stripe the array across the 7500's dual buses, a technique called "splitting" (an approach introduced with the Quadra 900/950, Apple's first dual SCSI bus machine) that is reported to be very fast. However, I could see no easy way to run a cable from the "external" SCSI bus (which does have a connector on the motherboard) to the second internal drive, and so put that step off for the time being.

The first thing was to do time trials on one of the non-arrayed Quantums, for purposes of comparison. Taking a cue from performance tests published by the major Mac journals, I created a 40-meg test file which I duplicated, opened and saved in Photoshop—all with stopwatch in hand. I also created a QuickTime animation considerably larger than my available RAM, and watched for smoothness of playback (it would have been much better here to test video capture frame rates, but I wasn't set up for it). Afterwards I ran MacBench 3.0 and the FWB HDT BenchTest.

My usual formatter is the APS Alliance Power Tools 4.0.x, which is actually a repackaged version of the well-regarded Anubis Utility from Charismac. Since formatting software can itself have a significant effect on drive performance, it occurred to me that assessing the speed gains derived specifically from creating the array required first testing the performance of the non-arrayed drives running with FWB's drivers. MacBench's Disk Mix and Publishing Disk Mix gave a 10–15 percent nod to FWB, while HD BenchTest was more equivocal, with APS winning (marginally) in the sustained write and average seek time categories , and FWB winning the sustained read contest by a hair.

Early on, I made two assumptions. First: That a given test result, whether from a benchmarking application like HDT BenchTest or an action like duplicating, would be reproducible. Second: That the two Quantum 1280s (both Apple OEM drives) would perform identically. Both of these later proved false.

Ground Zero

While RAID Toolkit permits homebrewed RAIDs, the documentation was pretty sparse on this topic. Eventually it became clear that my copy was an unbundled version that had shipped with one of FWB's Hammer arrays, and thus did not include full documentation. I also noticed from the ReadMe that the Quantum 1280s was not on the list of officially supported mechanisms, though its predecessor, the 1080s, was. The first of many calls to FWB technical support confirmed what I'd suspected—the software, while "current" in the sense of still being the shipping version, was actually on the verge of being updated, and predated the drive mechanism. The technician explained that "supported" referred to any combination they'd had a chance to extensively test in their labs; that the 1280s *was* on the list of supported drives for the upcoming version of RAID Toolkit; he was sure the mechanism would work fine with the current version.

The technician explained that "supported" referred to any combination they'd had a chance to extensively test in their labs…

This caused me a moment's hesitation: was it really wise to commit my data to an unsupported configuration? But it seemed too late to back out now. At any rate, I did manage to get a striped (RAID Level 0) array set up, with the array partitioned into two equal volumes.

Excitedly, I began benchmarking. Average Access time was down from 17 ms. to 14 ms—definitely an improvement, but not on the order anticipated. The same thing held true for Sustained Write time, while Sustained Read time was actually worse. MacBench Disk Tests showed improvements across the board, but generally on the order of 20%–30%. The Open and Duplicate results were unchanged, and the Save (from Photoshop) took a good 20% *longer*.

The bottom line was, the array was not showing the kind of throughput of which the drive mechanisms and bus were theoretically capable. I began exploring HDT World Control, FWB's utility for controlling SCSI mode page parameters, but was stymied by the lack of a manual—which my copy had not included. I did notice with some puzzlement that the drives' "Response Data Format" was listed as "SCSI I/CCS," but wasn't sure what to make of this.

Looking for Answers

At this point I called FWB tech support again. They had no immediate explanation for my results, but didn't seem particularly concerned by them either. Different drive mechanisms' varying write caches, number of heads, and other hardware features make them respond differently to striping, they said, with some being so poorly designed as to see virtually no gain. They suggested I tweak my HDT benchtest settings to more closely approximate digital video conditions, and assured me that the lack of improvement in file duplication times was to be expected, because that process is gated by Apple's inefficient approach to copying. As a matter of fact, I use Connectix Speed Copy, which purports to remove this particular bottleneck. FWB had no comment about this.

When hearing of the Response Data Format reading, they advised me to use World Control's Change Drive Definition command to change this setting to SCSI-2. They were also unequivocal about the internal/external bus question: they recommend that 7500 owners run their arrays off the internal bus exclusively, as its fast SCSI-2 throughput is so much better than that of the external bus. (This "recommendation" took on a different significance when I later decided to test an internal/external RAID, only to find that RAID ToolKit 1.8s wouldn't let me do this. But we are ahead of our story…) FWB also advised against physically locating both drives inside the 7500, as the increased heat might cause glitches which on a striped array could compromise data integrity.

Was Apple somehow crippling their drives—and if so, why? I began to cultivate a sense of righteous indignation, and called Apple Customer Service to demand satisfaction. Customer service was nice, but had no idea what I was talking about.

The Plot Thickens

After hanging up, I confidently invoked said Change Drive Definition command and was greeted by an implacable dialogue box which read, "The SCSI-2 change definition command is not supported by this drive."

Disappointed, I called FWB. They told me that World Control got this information directly from the drive's firmware, and if that was what it said, there was nothing that could be done about it, short of changing the firmware.

I called Quantum. A technician rather huffily insisted that the 1280s most assuredly *was* a SCSI-2 drive when it left their factory—but he had no idea what, if anything, Apple might do to it after they got their hands on it.

I called 1-800-SOS-APPL. After a surprisingly short wait, a technician answered. But it quickly became obvious that this sort of question was well outside their purview. The technician advised me to call Developer's Support, and helpfully gave me the telephone number—noting apologetically that it would be a toll call. This seemed a dubious approach, but I figured I may as well give it a shot.

Of course, Developer's Support proved completely unsupportive—but then, I'm not a developer either.

The whole thing was getting out of hand. I was still "living" out of my external drive, since I anticipated having to reinitialize both the internals. This meant various preferences were messed up: Now Utilities' Recent Applications and Documents menus were thrown off by my having moved everything around; likewise with my Retrospect backup Script. Somewhere along the line I experienced a hard crash, and upon restarting, found that my system software was the worse for wear. For some days I put up with dropping into Macsbug every time I went to shut down, until I eventually located my Stuffed clean version of the System.

Apple Punts

But my curiosity had been piqued. Was Apple somehow crippling their drives—and if so, why? I began to cultivate a sense of righteous indignation, and called Apple Customer Service to demand satisfaction. Customer service was nice, but had no idea what I was talking about. They tried to get me to hang up and call technical support, but I pointed out that I'd already tried this route to no avail. They started to suggest Developer's Support, but I would have none of it. So the poor fellow put me on hold while he contacted someone in tech support who claimed to be sufficiently knowledgeable about such things to handle my situation, then transferred me to this guru.

"Bill" was pretty knowledgeable, but also somewhat dogmatic and perhaps a tad defensive. He tried at one point to fall back on the standard tech support position that nothing was broken, so it wasn't their bailiwick. I insisted that something was indeed malfunctioning: This was an Apple computer with a SCSI bus advertised as being capable of 10 megs per-second throughput, and an Apple-based drive array that should be delivering something approaching that; and the combo was falling down on the job. Admittedly, my position was a little tenuous, since Apple has never, to my knowledge, claimed that their drives would deliver this kind of performance. Nor was the RAID software itself their responsibility.

Worse, the 7500 did not actually ship with a FireBall 1280s—something Bill pointed out several times. Still, it seemed appropriate to me that they should help me get reasonable performance out of their equipment—or at least explain why I couldn't. Eventually I convinced him to pursue the matter. He said he would escalate it, and call me back. He estimated that this could take two weeks.

Low and behold, Bill called back the very next day. He said that the engineers to whom he'd brought the problem had immediately responded that they'd already had reports of FWB's World Control giving false reports as to the SCSI status of these drives. Bottom line: the only problem was with FWB's software, which misreported the drive status. He had no explanation as to the performance issues which had prompted me to examine this question in the first place, but wasn't really interested in discussing the matter further.

FWB Punts

Trifurcating my attack, I contacted a friend and fellow BMUGer who works at Apple, and asked him to make inquiries within the company, while simultaneously placing another call to FWB. My hope was that they would be sufficiently animated by Apple's having thrown down the gauntlet to help me get to the bottom of the matter. I also asked Charismac to send me a copy of their RAID software, thinking that it would either yield the kind of performance I was supposed to be getting, or at least confirm FWB's reading of the drives as SCSI-1—thereby suggesting that Apple's pawning of the blame onto FWB was disingenuous.

The FWB tech I spoke with this time said that no Apple drive she'd ever seen had read as SCSI-2—in fact, they usually showed up as SCSI-1; she was surprised they'd moved up to the "improved" SCSI-1/CCS (why hadn't they told me this earlier?). She reaffirmed that this was an objective parameter setting which their software couldn't be in error about, and also indicated that the setting per se would not affect how RAID Toolkit handled the drive. In other words, Toolkit would not

be fooled by this reading into creating the array in a way which didn't exploit the full potential of the mechanism. Finally, I asked if they could give me "correct" benchmark results for non-Apple Quantum FireBall 1280s initialized with RAID Toolkit, so I could tell whether my own results suggested a crippled drive. But FWB, apparently, had never benchmarked these particular mechanisms.

Complications

While waiting for Charismac's software to arrive, I retreated to my office and ran more tests. It was at this point that I discovered that a given benchmark on a given drive mechanism did not yield the same results upon repeated application. I could run HDT bench test twice in succession, and get significantly different scores. This meant that I was going to have to perform all tests several times, and take some kind of average.

Furthermore, using this testing approach showed that the individual Quantum mechanisms themselves did not perform identically: one was consistently about 20% faster than the other. It occurred to me immediately that in an array situation, the slower drive was going to drag down the performance of the faster one. However, this didn't come near to accounting for the laggardly performance evinced by the arrays.

Charismac Joins The Fray

When Charismac's AnubisRAID v 1.29 finally arrived, I eagerly launched its SCSI page parameter component (PowerControl 1.06), to see what it had to say about the SCSI-1/SCSI-2 issue. Unfortunately, this information was not revealed at all.

Then I embarked on RAIDing the drives. It was unclear how to proceed with an existing array under the control of another driver, and I didn't have the patience to go back to RAID Toolkit, split the drives, then return to AnubisRAID. I made a guess, and it turned out to be wrong, resulting in AnubisRAID hanging. After a Force Quit, both drives refused to respond to any formatting commands, and I was afraid I'd lost them forever. After restarting the Mac, however, it was possible to configure an array.

Much to my disappointment, the Charismac array gave even worse numbers than had the FWB. In fact, the new array didn't perform nearly as well as a *single* mechanism running under FWB's driver—as least as far as throughput; access and seek times were a little better.

Just for the hell of it, I decided to ignore FWB's advice and split my array between the internal and external buses. Using Charismac's software, I created an array with the faster of the two Quantums (Quanta?) plus the old 840-meg Seagate. Performance here was the best I'd seen yet, though the sustained write time of 6,200 kilobytes per-second was still disappointing.

Having changed two variables, it was impossible to know for sure whether the improvement came from involving the Seagate (which did register as a SCSI-2 device and was not an Apple OEM drive) or striping across the buses. To tell for sure, I would've had to put the Seagate inside the Mac, or pull one of the Quantums out and run it as an external—neither of which was particularly appealing.

Naturally, this development made me wonder how FWB's RAID Toolkit would perform with the same configuration. After some experimentation and a call to FWB, it became clear that RAID Toolkit wouldn't even allow a cross-bus array.

Charismac Punts

After consulting with a colleague, the man I spoke with at Charismac suggested that the disparity in performance between their software and FWB's might be due to FWB's driver being native. As to the underlying question of why no one was giving me dramatic improvement, he had no immediate explanation himself, but promised to check with an engineer and call me back (they wouldn't let me speak with an engineer directly).

When the Charismac guy called back, he said:

"The drives are being maxed out."

"But isn't that the point of a striped array," I asked him, "to overcome the limitations of an individual mechanism?"

"Well, yes," he said, "but it's only a 16-bit bus."

"But the bus is rated at 10 megs per-second," I said. "How could it be imposing a bottleneck at about 6 megs per-second?"

"Like I told you" he said, "the drives are maxed out—you need faster drives."

We went around like this for awhile, till eventually the Charismac fellow brought things to a close with "All I can say is, it made sense when the engineer explained it to me." (In fairness, this was a marketing person, and not a tech support individual).

I left a second message with the marketing director who'd been so friendly and so ready to send the software in the first place. I figured it was in their interest to help me out, since the poor results I was getting would not reflect too well on their software. Maybe he'd let me talk to an engineer? But he never returned my call. This dashed my hopes of getting Charismac's technical assistance in figuring out what was really going on.

Eventually the Charismac fellow brought things to a close with "All I can say is, it made sense when the engineer explained it to me."

What Next?

Not ready to give up yet, I renewed my efforts to reach Trillium Research, makers of yet another Mac RAID utility, Remus. Trillium turns out to be a division of the major cross-platform SCSI vendor, Adaptec. My first few calls got mired in the depths of that large organization, but eventually I received a call from a very nice woman in marketing, who was quite happy to send me (that is, BMUG) their product.

At the same time, I put in another call to Quantum. Perhaps, I reasoned, *they* could tell me what kind of performance was to be expected from two FireBalls

striped across a Fast SCSI bus before those drives had been touched by Apple. This would at least clear up the question of whether Apple's goods (the drives or the bus) were somehow not up to snuff. But alas, Quantum had no such information. Most of their testing, it seems, is for compatibility, not performance.

Still, after much discussion of my results and questions, Quantum's tech person offered to escalate the case. The next day I got a call from a nice gentleman who seemed to really understand the technical issues, though he had no immediate answers. He said that in his three years at Quantum, no one else had come to him with this problem. Evidently, people who want to build arrays generally go for faster mechanisms. He understood, though, how useful it would be for the large installed base of 7500, 7600, 8500 and 9500 owners to cheaply and easily double their storage and boost their throughput. He said he would try to talk to someone in the company who might have some ideas, and also try to track down some 1280s mechanisms to send so I could at least see how those performed direct from their factory. Problem was, the model has been discontinued, and it would be hard to find any.

Around this time a piece of email arrived from my friend at Apple, who'd contacted an Apple engineer willing to pursue the matter. This fellow said the Apple OEM drives should be SCSI-2 capable, but needed more info from me. I fired off a quick note, explaining the situation, and sat back to await his response.

Enter Trillium

But Trillium's Remus 1.4 arrived first. For reasons of convenience (all my data was on one of the internal Quantum drives), I tried striping across the buses, Quantum to Seagate. Results, as measured by HDT BenchTest, were pretty similar to those I'd gotten with Anubis-RAID: Average Write Access of a little over 6 megs per-second (Peak times—really, the ones that would be expected to hit the bus limit were only marginally higher). However, rather to my surprise, their SCSI utility, Remus Disk Control 1.4, read the Quantum drive as SCSI-2—apparently undermining FWB's claim to be accurately reading some objective piece of info hard-wired into the drive.

Some Technospeak from Quantum

As luck would have it, "Frank" from Quantum called me that same day. We had a long, geeky discussion. He thought Windows NT had RAID striping capabilities, and since the FireBall 1280s is a very common drive, he was getting interested in figuring out what was going on. There were still no figures available about the real world performance of a 1280s mechanism in a striped array, but he hoped to establish some. Meanwhile he had some useful comments.

Actually, many of the comments were only useful in that they conveyed substantial levels of interest and expertise. The preliminary ideas from Frank and the Quantum engineer he'd been talking to were mostly based on inaccurate speculation as to my particular circumstances—things like my array stripe size and how I'd run my tests. Once he had the skinny, he was left with little in the way of immediate suggestions.

The drives should show close to double that performance in a striped array, up to the saturation point of the bus, of course.

Frank was able to tell me what Write speeds an individual Fireball mechanism was really capable of—about 5.8 megs per-second on the outer (faster) sectors. So my unarrayed results (around 5 megs, average) were quite reasonable. More importantly, he agreed that the drives should show close to double that performance in a striped array, up to the saturation point of the bus, of course—thus vindicating my efforts so far.

So what was wrong? Of course, it was always possible that the bus itself was not really up to its rated 10 megs per-second capacity. This seemed unlikely, but certainly worth knowing if true.

As to the SCSI-1 vs. SCSI-2 issue, he looked up the inquiry data format for the drive. It turns out that it is byte 3 of the standard response data string which tells the inquirer what SCSI flavor is being dealt with—but you probably already knew this. As FWB had told me early on, this is specified in the firmware—it could only be misread by a manifestly incorrectly written application. But Frank mentioned in passing that byte 2 specifies the ANSI version. Generally, he said, this will agree with byte 3.

A light bulb blinked on in my head. Perhaps this accounted for the discrepancy between FWB's and Remus' reporting. If Apple, in their wisdom had modified the response data string in such a way that bytes 2 and 3 no longer spoke as one voice, then two separate utilities could report two different SCSI flavors simply by looking at different indicators.

Frank approved of this theory. He briefly entertained the notion that the SCSI controller itself might be similarly thrown off, and thus treat the drive as SCSI-1—undermining its performance. But we agreed this would be mighty strange, as it would mean that Apple was selling computer systems with a crippling disk/system misalignment.

There didn't seem to be much more to say at that point (can't imagine why I didn't think to ask him about the remaining bytes of the response data string). Frank promised to get in touch with me when he'd ferreted out or created more info, and was nice enough to give me his personal telephone number.

Some Technospeak from Trillium

I called Trillium's tech support to see what illumination they might have to offer. A crack technician, conveniently ensconced behind an 800 number, answered my call after a mere 20 second wait. As I started to relate my tale, he interrupted and told me they already knew that FWB's HDT BenchTest gave inaccurate results on drives controlled by the Remus' driver. He then patiently talked me through the process of configuring and running their own Remus Benchmark utility on the individual drives, then on the RAID. (In fact, results were about what BenchTest had indicated).

His opinion was that I needed to tweak my SCSI mode page parameters. Unfortunately, he didn't know what the ideal settings would be for my particular mechanisms and conditions. He suggested I experiment with the Buffer Full and Buffer Empty ratios, and referred me to a Web site he thought had a comprehensive list of mode page optimizations for video capture.

Best of all, the Trillium tech asked me to generate an extended report in the Remus utility and email it to him—whereupon he or an engineer would be able to make more concrete assessments and recommendations.

I haven't yet had the chance to seek out the web site (the Trillium guy couldn't remember exactly which site it was—only that it was a manufacturer of desktop video products) or interact further with Trillium. But I'm optimistic about the mode page optimization. Changing the Buffer Full and Buffer Empty ratios did have a significant impact on Write Access. True, the impact was negative, but it may indeed be a matter of finding the right settings.

In retrospect, the idea of tweaking the SCSI mode page parameters should have been an obvious one from the start. I was led astray by the SCSI/SCSI-2 red herring, and the surprising absence of hard data about how a properly configured array based on these components should behave.

Same Time, Same Channel

So what's the upshot of all this sound and fury?

If you own a Macintosh with Fast SCSI bus, it's a relatively simple and inexpensive matter to set up a striped array. But if your system is like mine, getting this array to show dramatic improvement in throughput and access speeds is another story. Even if flawed test results are partly to blame here—and it's pretty clear I should have established a more rigorous testing methodology from the start—the lack of real world performance gains in my drive system casts doubt on the efficacy of the whole procedure.

Is this is due to unspeakable acts of auto-sabotage by Apple, false or unrealistic performance claims by one or another vendor in the chain, as-yet-unoptimized SCSI parameters, or some other issue entirely? For the answers to these and other questions, tune in next Newsletter! Hopefully, by that time either "Frank" from Quantum, tech support at Trillium, or my Apple contact will be able to shed some light on these questions. (Anyone reading this who has useful info is of course invited to contact me).

In the meantime, mind your mode page parameters and pass the data.

P.S. This really isn't intended as a review per se, but there are a couple of things worth noting.

- FWB's World Control 1.8s is the most powerful SCSI mode page utility of the three.
- FWB's RAID Toolkit is the only one of the three that *doesn't* support striping across the internal and external buses (aka splitting).
- Trillium's Remus 1.4 supports RAID Levels 4 and 5 (which offer improved data integrity over Level 0, but sacrifice some storage space and performance) in addition to the standard Levels 0 and 1 supported by the other two.
- If you value your time, don't trying to get non-standard information from Apple—unless you happen to have a contact from among its ranks.

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Low-Cost Digital Video Returns to the Mac

miro's miroMOTION DC20 QuickTime Board

By Dennis R. Dimick

Since the demise of the SuperMac/Radius Spigot series boards, there's been a vacuum in the lower-cost arena for Mac video capture and output to tape tools. Of course Apple's been selling models such as the PowerMac 8500 with built-in video capture and output to tape ability, and several vendors such as Targa, Radius and Data Translations have been all along selling $4000-plus add-in board solutions. But these offerings have been either limited in quality or too expensive for shallow-pocketed digital artists seeking a way to create and print to tape high-quality video from a Mac.

Now that PCI has replaced NuBus as architecture for adding performance-enhancement cards to PowerMacs, we've started seeing a crop of comparatively low-cost, high-performance QuickTime video capture boards. Arriving first has been the miroMOTION DC20 from German firm miro Computer Products AG. Introduced at $999 retail, this card in August 1996 dropped to $799 and at this price has offered unprecedented quality in Mac digital video.

Performance Details, Please

The miro board produces 30 frames-per-second, 640x480 (full-screen) 60-field (NTSC standard) video capture to disk and output to tape in S-Video quality. Caveats include: no onboard audio support—audio must come from your PCI Mac; you need ample real RAM (24 megs minimum) installed; and you must have multiple gigabytes of very fast hard drives installed, preferably via a SCSI accelerator card.

Figure 1. Control Strip Setup: Apple's desktop control strip serves for choosing video output destination from the miromotion DC20 card. It's possible to view movies either on an attached NTSC (TV) monitor, preferred, or on the RGB monitor. Playback performance on the RGB monitor is slower and smaller than on a video monitor.

Translated, this means you can create quality videos on your Mac at less cost than before , print to videotape, and pretend you are a high-dollar Hollywood or network producer. Or, at the least you can produce attractive videotape presentations to dazzle friends and family, impress potential employers, demanding teachers, or anyone with a TV and VCR who needs to see and hear your message.

Quality from the miroMOTION is not broadcast, but with adequate hardware support from your Mac, video output can look about as good as what Hi-8 video cameras generate (Hi-8 produces 400 lines of vertical resolution where VHS produces 240 lines.)

What's in the Box

The miroMOTION DC20 comes as a 7-inch PCI card and fits into the new-generation PowerMacs supporting PCI slots. miro says the card works in the PowerMac 7200, 7500, 7600, 8500, and 9500, and is also compatible with some of the new clones. A limited edition of Premiere, Adobe's video editing program, is part of the package. miro's accompanying software drivers include extensions and control strip modules for the Mac system folder, and a couple of presets for the Premiere plug-ins folder.

The version (1.0) of miro's drivers that came with my card was months outdated, and a quick trip to miro's web site (www.miro.com) allowed me to download and install the current version 1.1 drivers. QuickTime 2.1 also came on disk with the miro card, but it too is not recommended for use with the board now.

QuickTime 2.5, which Apple released in July 1996, includes version 3.2.1 of Apple's Sound Manager that has been improved to optimize synchronization of audio and video when using video-only capture boards such as the miro. The new Sound Manager works to keep audio from the Mac CPU in step with video signals incoming via the separate miro card.

In short, if you plan to use the miro card, install QuickTime 2.5 and miro's version 1.1 drivers. My own experience with this setup has shown that audio has stayed in synch with video on capture to disk, even in situations where critical lip-synch has been part of the content.

Figure 2. Open Clips Collapsed The trick to optimal playback in Premiere is to set program preferences to "Open all QuickTime clips collapsed." This will cause all clips to open either in a preview window, shown," or on the NTSC video monitor if you have chosen that option with the control strip.

Figure 3. Play Movies on Monitor This is what Premiere's Preview window on your RGB monitor will look like if you have chosen "Play Movies on Monitor" in the Control Strip for miro playback. Opening "QuickTime clips collapsed" in Premiere will open clips in the Preview window or on the NTSC monitor.

My tests have shown the miroMOTION board will keep audio and video in "lip-synch" for about four minutes during video capture. This is at 640x480, 30 frames per second, with audio via the 8500's logic board at 16-bit, 44.1khz, stereo. If you need better performance than this you'll have to consider one of the more expensive capture boards that have audio built-in.

A Lite Premiere

The version of Premiere 4.0 that comes with the miro card is what's called "LE," limited edition. What LE lacks compared to the full Premiere are external device control, motion control for special effects, SMPTE timecode support, trimming window, batch movie-making, and support for Illustrator file import, among others.

If you want to upgrade to the full Premiere 4.2, it will cost you $149 from Adobe. Even at this price, this is a good deal. Deep analysis of Premiere, which I like very much as a program, is left to other articles. The miro card comes with several presets files that allow for optimal capture performance using Premiere. Suffice to say I have been able to use other QuickTime editing programs with the miro card, specifically VideoFusion, and have been able to print to video via the miro card using Apple's Movie Player 2.5.

Card Installation and Setup

Installation in my 8500/120 was straightforward: install the card as you would any other PCI card, just beware the cheap plastic tabs on the CPU chassis that may break off. A small Y-cable hooks into the center connector on the back of the miro card and is meant for attaching RCA connector (composite) cables for video in and out. The miro card also has connectors for S-Video in and out. Be very careful about where you attach the supplied Y-cable, as placing the composite Y-connector in the S-Video connectors can disable the card. Software drivers for the miro will install into the extensions folder and the control strip folder. Presets files for Premiere must be manually placed in the Premiere plug-ins folder.

The RGB desktop control strip is sole location for controlling destination of the miro card's output. A pop-up module determines whether the card output will be to your RGB monitor or to an external NTSC (TV) monitor. If you choose NTSC as output device and you restart your Mac, the miro will default to RGB as destination, so you will have to manually re-select video via control strip as destination at the start of each working session.

If you plan to use the miro card to potential, you must have an NTSC (TV) hooked up to the miro's video out. It is possible to view movies in small preview windows on your RGB monitor, but they will be small and jerky. The optimal setup for your video editing suite is to have a VCR and TV hooked up to the video output from the miro.

Drives at the Heart of miro

For success you must have large capacity fast hard drives attached to your Mac when using the miro card for digital video capture, editing, and output. If you have a one gig internal drive with your system and application programs, and you also intend to capture video to this disk, you will be disappointed. You will never be able to attain optimal smooth rates at full frame size. Further, your disk will fill up very fast as video captures can take upwards of three megs per second.

I'd recommend a minimum 5400 RPM two gig external or internal drive added to your system exclusively for use as an AV data capture drive. The internal SCSI bus on some PCI Macs is faster than the external, and you can add a drive internally that should allow decent capture and playback. I have successfully cap-

tured to an external 5400 rpm two gig drive (APS MS4221AV) on an 8500 as long as I limited data rates to disk on capture to less than 3 megs per second.

Optimally, a fast and wide 7200 rpm drive (68-pin connector) attached to your Mac via a PCI SCSI accelerator card, or even a RAID array of two drives will get you optimal performance when capturing video to disk. miro recommends you use drives that can sustain 50 percent higher capture rates per second than the data rate of your movies. For example, if you plan on creating full-screen movies with data rate of 3 megs per second, install a drive system that can sustain 4.5 megs per second transfer rates.

Variable Data Rates: Key to Quality

The miro card does its work by compressing incoming video streams using what is called "Motion-JPEG." This is a QuickTime codec similar to the "Photo-JPEG" that comes built-in to QuickTime, but in the case of the miro card and others, onboard chips provide "hardware assistance" to compress incoming video streams into a series of JPEG images at rates up to 30 frames per second. Each video frame in NTSC is composed of two "fields," hence the specification, 30 frames, 60 fields per second ,when performance of QuickTime video capture cards is cited.

The miro card allows you to vary data rates and frame sizes and resolution on capture. You can choose 640x480 full resolution, 640x240 half vertical resolution, 320x480 half horizontal resolution, or 320x240 quarter resolution. Within each resolution you can choose quality from low to best just as with most other QuickTime codecs. The odd configurations above, 640x240 and 320x480, still give full size frames on output, they just produce images with one-half the vertical or horizontal detail (resolution.)

You can, for example, digitize to disk at full 640x480 resolution, but limit incoming data rates to 2.0 megs per second or even 1.5 megs per second, and could change resolution on capture to 640x240 and get even smaller files. These variables allow control over file size and lower the data rate demand on hard drives, but the consequence is lower video quality.

The maximum data rate to disk the miro card apparently allows is approximately 3.4-3.5 megs per second. Even at that rate, I have had trouble with dropped frames even when capturing to an 8 gig array of Promax Conner (Seagate) 4207W drives. It's not the drives that are dropping frames, the card just cannot sustain data throughput higher than about 3.4 megs per second.

On the other hand, in recent tests, I was impressed with the quality presented by 640x480 captures limited to just 2.0 megs per second. What this means is that you can successfully make smoothly-playing movies on a slower PCI Mac with slower (e.g., 4500 RPM) hard drives as long as you keep data rates low, or on single drives attached to external SCSI ports.

miro, miro on the Wall

The miroMOTION card has its limitations, but as long as you work within them, it's possible to create quite good-looking movies on tape. I've had some trouble with type artifacts via the board's JPEG compression using scrolling titles in Premiere, and have stayed away from them. The top-end data rate of about 3.4 megs a second is frustrating if you have drives that can achieve higher transfer rates. (miro is said to be readying a new card for release in early 1997 called the miroMOTION DC30. It will provide better synchronization to the PCI bus, thus offering higher data rates to disk.) Any problems with audio synchronization on the DC20 appear to be well-controlled as long as you use version 1.1 of miro's drivers in concert with QuickTime 2.5.

All in all, the miroMOTION DC20 is a breakthrough product that should improve the popularity of video production on the Macintosh. If you are in the market for good-quality full-screen digital video tools, take a look at the miroMOTION DC20. Combined with the right CPU and hard drives, it can enable you to become a video publisher at a price point far below what was previously required using desktop video publishing tools.

P.S. You should also take a look at the recently released Bravado 1000 card from TrueVision. I have not seen it, but have read that it provides similar performance to the miromotion. The Bravado is said to "bus-master," this meaning the board can sustain higher data rates than the miroMOTION DC20. However, recent postings from TrueVision on their web site indicate the Bravado board does not work well with SCSI accelerator boards or disk arrays. Single drives mounted internally are said to be the best capture option for the Bravado. The Bravado costs a bit more, but you get the full version of Adobe Premiere 4.2.

miroMOTION DC20
System Requirements: A PCI PowerMac with empty PCI slot, 16 megs RAM (24 recommended), System 7.5.2 or later, QuickTime 2.5 and miro software drivers version 1.1 or later.
Hard Disks: a two gigabyte drive will hold about 11 minutes of M-JPEG compressed video data at 640x480 resolution (3 megs per second data rate,) plan accordingly.
Highly recommended: an NTSC (TV) monitor and VCR. The miroMOTION DC20 supports NTSC, PAL, and SECAM standards.

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Phone (415) 855-0940
Web: http://www.miro.com
Retail Price: $799;
street price $700-750

Dennis Dimick has written for the BMUG Newsletter on a variety of QuickTime tools over the years, including Sigma Designs' Movie Movie, SuperMac Spigot II Tape, Movie Cleaner Pro, the future of QuickTime, and the digital video prowess of Apple's PowerMac 8500. He lives in Arlington, VA and can be reached via Internet e-mail: ddimick@aol.com

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17-Inch Monitors

by Lyle H. Nishida

Since the monitor is the only part of your computer that you actually need to look at, I thought that it deserved a subjective review. Like a spouse, monitors are certainly a matter of personal taste. What appeals to one user, another may find difficult to live with.

In my current work, I support both Wintel and Macintosh users. Quite frankly, the Mac users are much more demanding of their monitors. The Wintel users I work with certainly have some thoughts on the issue, but the graphic artists are on Macs. In both cases, there is a bigger-monitor-is-better mentality. Not that I disagree, but with limits like budgets and space, we walk a fine line here.

With so many factors affecting the requirements for monitors I thought I would share my findings.

I drove all of them with the internal video from the following: Power Mac 7100, 8100, Power Computing Power Tower 200, Centris/Quadra 650, Quadra 840AV, and PowerBook 540c.

My own use of the computer is about 40% Adobe Photoshop, so my natural desire is to have the highest image quality possible. I also do a lot of "normal" work, things like word processing, spreadsheets, and of course, spending time on the Web.

I would suggest that if you are using an Apple 13- or 14-inch monitor, you take a serious look at a 17-inch monitor. Prices are low, and the gains in productivity are tremendous. I would also suggest that unless you are really strapped for bucks or space, going with a 15-inch monitor is not really a good compromise. I realize that this goes against a lot of what has been written in the popular press, but if the goal is an increase in WYSIWYG resolution, the 15-inch monitors just don't cut it. With a 15-incher you could have enlarged 640 x 480 (14-inch resolution) or shrunken 800 x 600, 832 x 624 (16- or 17-inch resolution).

Using a 17-inch monitor at 1024 x 768 (19- or 20-inch resolution) gives you a smaller-than-normal image. An image of 11 3/8 inches actually measures 10 inches on screen. This can be an advantage if you are doing layout work, using a Web browser, or other things where the amount of area displayed is a consideration.

If the goal is an increase in WYSIWYG resolution, the 15-inch monitors just don't cut it.

My 17-inch monitor measures 16 inches from corner to corner of the visible glass. The actual image measures less than 15 inches in size. This is typical of the bigger-is-better mentality. In the "old days," Apple would have called this a 16-inch monitor. The old Apple 13-inch RGB really has the same image size as the Apple 14-inch RGB and actually a larger image than the 14-inch Plus monitor.

My prior 17-inch monitors have been NEC 5FG, SuperMac 17T, Ikegami 17 and the SuperMac (now Radius) PressView 17.

All of the monitors had more than enough adjustment range for my uses. Contrast, brightness, geometry, and distortion controls are all part of any modern 17-inch monitor. I surmise that this comes from the multisync character of most of these boxes.

Multisync is not a bad thing. The advantage here is pricing. Since the manufacturer needs to make just one type of unit for both Macs and PCs, the costs are spread out over more possible sales. In some cases I believe that this has contributed to lower costs, better selection, and improved image quality.

So that we are all on the same page, I decided that I would use the Apple 14-inch RGB as a starting point. This is the Trinitron-tubed RGB monitor. While this monitor is small by today's standards, it has been the *defacto* standard for Apple monitors. The image quality is excellent. Colors are vibrant and the images appear very sharp. I have listed the monitors in descending order of image quality.

The PressView 17 has been my favorite and will continue to be. Like the name suggests, it is designed for use in prepress applications. The biggest advantage the PressView 17 has is its ability to be calibrated. Even if you are not doing this type of work, the overall image quality is the best in this class. It is expensive—about twice the price when compared to its competition. At 1024 x 768 the image was very usable.

Compared to the Apple 14-incher, the PressView image is slightly darker at maximum brightness and slightly less sharp. It works very well at all resolutions.

Next up is the Sony 17se. If you do not need to calibrate your monitor I would recommend the Sony 17se. The image is sharp and, out of the box, the

A new trend in monitors is built-in speakers…. I don't have anything against these products but none of the built-in speakers performed as well as my Apple Design Speakers…

image quality is great. The contrast runs a little hotter than with the PressView. This unit is expensive too, but produces a crisper image than any of the other monitors. At 1024 x 768 the image was very usable.

Compared to the Apple 14-inch monitor, the 17se image is darker at maximum brightness with more contrast and is slightly less sharp. It also performed well at all resolutions.

The Apple 1710 uses a Trinitron tube; the image quality is on par with the Sony 17se. Whichever of the two is less expensive would be my choice. At 1024 x 768 the image was very usable.

The Sony Multiscan 17sf is, for Sony, a lower end monitor. It is sharp and has a good range of color. If you are looking to spend less for a basic monitor then this is the best buy. Several users don't seem to like the default contrast range of the monitor. It runs "hot" in contrast, but can be adjusted. At 1024 x 768 the image was usable.

Compared to the Apple 14-incher, the 17sf image is brighter at maximum brightness with less contrast and is less sharp.

The Samsung really surprised me. The image quality was excellent, and they tend to be priced very well. The image suffered from some pin cushion distortion "out of the box" but that was easy to fix. The adjustment range is a little less than the Sony's but I have not needed more than the Samsung can deliver. This is the last "acceptable" monitor. Compared to the Apple 14-inch monitor, the 17GL image is lower in overall quality. At 1024 x 768 the image was barely usable.

The Apple 1705 has below average image quality. Unless you are getting a real deal on this unit, I would avoid it. At 1024 x 768 the image was not usable.

I found the NECs to be a big disappointment. The XV series (XV15, XV17, XV17+) is the biggest disappointment. I have worked with several 5FGs and the new NECs are just not as sharp. No amount of fiddling with the controls helps. The image has the appearance of being soft—to the point where 10-point type is unreadable for many users. At 832 x 624 and 1024 x 768 the image was not usable.

I find this to be very curious, since NEC seemed to have it figured out with the older units. The color range appears to be fine overall but the lack of sharpness is a real problem. I surmise that this could be due to integration of the anti-glare coating right onto the face of the monitor. That said, I find myself in dispute with myself since the old accessory anti-glare lenses from NEC did not have this lack of sharpness problem.

In fact, the lack of sharpness is so bad that several users have switched from NEC XV17 monitors back to Apple 14-inchers. Seriously not recommended.

A new trend in monitors is built-in speakers. The Apple 1710AV, NEC M700 and Viewsonic 17GA have them. While this sounds like a good idea, the execution is still somewhat suspect. For the most part, the monitors with built-in speakers are about $100 more expensive than similar performance units without speakers. The appeal here is less desktop clutter, and potentially less interaction with your other components. I don't have anything against these products but none of the built-in speakers performed as well as my Apple Design Speakers, or Yamaha YST-M10s. In other words, unless you are really cramped for space, I think that a monitor and separate speaker system makes more sense. Better quality sound, and less cost.

In my opinion all of the monitors with speakers have a serious flaw—they miss playing the startup chime. Okay, so it isn't exactly a huge problem, but I miss it—sort of a reassurance that everything is okay with my Mac.

The Apple 1710AV is an excellent monitor with some fair speakers. It has the same image quality as the Apple 1710 in a taller cabinet. It also makes the monitor heavier.

The Viewsonic 17GA is a pretty good monitor with some fair speakers. I would rate the Viewsonic to be about the same image quality as the Samsung but less expensive.

The NEC M700 is a poor monitor with some terrible speakers.

Monitor adapters are an overlooked area. This is an area which can either cause or prevent some grief. In the past, if you used a Mac monitor you plugged it right in. Since these new monitors are multisync you will need a monitor adapter. These vary in quality from terrible to pretty good. One of my co-workers discovered the Samsung adapter. It works with all multisync monitors that I have tried it on. The screws actually match up and attach with the Mac or adapter cable without falling out. I have also had good luck with the NEC adapters. Most of them have a fixed image size, which if you work with lots of Macs, can be an advantage. The MacView adapter and Unimac VGA converters work well but are somewhat flimsy. They use DIP switches which are easy to wiggle out of position. This can be a source of frustration since the monitor cable goes into the back of the computer.

My conclusion is that the following are recommended:

17-inch Monitors:
Radius PressView 17
Apple 1710
Sony 17se
Sony 17sf
Samsung 17GL

17-inch Monitors with Speakers:
Apple 1710AV
Viewsonic 17GA

AlphaSmart Pro

by Colleen Miller

When I first received AlphaSmart Pro (ASP), I thought it was yet another cute little toy. Well, I was right—it is a cute little toy, and *so much more*!

The AlphaSmart Pro keyboard is an excellent piece of equipment that, for me, took the place of a PowerBook. This will not be the case for the many who fully utilize their PowerBooks. I, however, have never done much more than word processing on mine. My PowerBook (BMUG's, really) was simply something I'd take with me to enter data into when I was doing grant proposal research. It also was something I used when working at home and someone else was on the other home computer. I didn't like the PowerBook; it was old, clunky, and didn't work that well. I am, too, so it didn't make for a good combo.

Along comes AlphaSmart Pro and suddenly I'm in heaven. ASP is primarily, but not only, a word processor that allows you to create up to 64 pages of text within 8 files. 64 pages of text is more than I generally need, so it works nicely for me. ASP is about half the length of a standard keyboard yet strongly resembles a keyboard, and is incredibly easy to use. You simply turn on ASP and start typing. Also, when you're ready to turn it off, no need to bother with saving your text. ASP does it automatically.

As I mentioned, ASP resembles a keyboard. Well, one of the features that sets AlphaSmart Pro apart from a standard keyboard is that I can watch the creation of my documents in a little window at the top of the board. Four lines of text can be seen at a time. This suits me perfectly, as it's enough to take me back to my previous thought (and if I need more than that, I can scroll back farther) and I don't need something that shows me graphics or an entire document. Also, the tiny window allows this keyboard/word processor to remain manageably light and small. However, I don't believe I'd recommend this for someone with a visual impairment or someone who needs to see the "big picture" at all times.

When you're ready to turn it off, no need to bother with saving your text. ASP does it automatically.

As with most word processors, ASP has a wraparound text feature. It also has a few more buttons in some places and a few less in others. Another major feature of ASP is the Send button. Once you've typed your text into a file on ASP, and have come home and want to do something with the document you've created, you can easily unplug the keyboard to your Mac, plug your keyboard cable into AlphaSmart Pro, turn on your Mac, open your favorite word processing application, and press Send on ASP. This will transfer your unformatted text to your already opened word processing document. That document, by the way, could be ClarisWorks, Word, WordPerfect or any other word processing software you use. Oh, and did I mention that this can be plugged into your Mac *or* your PC? However, after you transfer your text, you will need to format your document, as ASP doesn't have full formatting capability. It will only allow you to create columns or indent paragraphs. ASP does not have cut, copy, paste, or spellcheck. The theory behind this is that these functions are more easily done on a larger size screen. And, in all actuality, it only took me a few minutes, at most, to format after transferring my text.

Oh, and did I mention that this can be plugged into your Mac or your PC?

As I mentioned, AlphaSmart Pro has capabilities for 8 files. Each file is fixed in length, with file 1 allowing for 16 pages of text, files 2–5 allowing for 8 pages each, files 6–7 allowing 6 pages, and file 8 allowing 4 pages. This file structure is designed to support multiple users or to enable a single user to organize work into chapters or sections. If you do have multiusers, password protection is available. I've never run more than 4 files at a time, and it's suited my needs nicely. Switching from file to file is as easy as pushing a button: F1/File 1 key opens file 1, F2/ File 2 key opens file 2, and … you get the picture. The text you've written will remain in the file until you explicitly clear it by pressing the Clear File key. Even then your text can still be recovered if you have not yet typed anything into your file by merely typing Command-Option-R. ASP also has an option to clear all 8 files at one time.

Hooking up ASP is also incredibly simple. Simply plug in your keyboard's ADB cable into AlphaSmart Pro and go. This is an important advantage, using the ADB port instead of the serial port. Not only do you leave your network, printer, or modem at-

[M]any schools cannot afford CPUs in the classroom, yet a word processor could provide a lot for students.

tached and not mess with them, but it means there is no software to install onto a computer to transfer to it. Since it truly emulates a keyboard, it literally retypes your data into whatever program is currently open. This has the advantage of being compatible across all system software revisions and across all hardware—if your normal keyboard will work, so will AlphaSmart. You'll need a special cable for a PC, but who cares, anyway?

AlphaSmart Pro also has the capability to change keyboard layouts (4 layouts are available) and to send international characters to your Mac.

One of the most attractive features of AlphaSmart Pro is that it runs on 2 AA batteries which will power ASP for 80 to 200 hours. You can also purchase a rechargeable NiCad Battery Pack. This is automatically recharged whenever your AC adapter is plugged in. ASP will warn you on screen when your batteries, AA or NiCad, are getting low. ASP also uses a secondary backup battery that is not user-accessible. This is a 3V lithium coin cell battery that powers the memory, preventing data loss when the unit is turned off and the primary batteries are dead. This lithium battery will last for approximately 5–10 years. It must be replaced by service personnel (or so they say).

Intelligent Peripheral Devices (IPD), the company that manufactures AlphaSmart Pro, has written an easy-to-use manual for their product, as well as an extra bonus of a Teacher's Guide. Intelligent Peripheral Devices is marketing these units to educational organizations—schools, colleges, etc. They realize that many schools cannot afford CPUs in the classroom, yet a word processor could provide a lot for students. IPD would ideally like to put an AlphaSmart Pro in the hands of every student. To help with that process, they're offering excellent price breaks to school districts. What an excellent way to carry your information with you. A student could go home and upload it into his/her computer, if they're lucky enough to have one, or take ASP home and do homework on it while reviewing class notes. It's a dream, but one that's a bit more accessible than a CPU for every student.

Pricing on these units is more than reasonable. They start at $269 for corporations, $185 for non-profits and students. If you buy 10 or more units at a time, as many BMUGers just did, your price would be $229. This is new pricing and reflects IPD's dedication to keeping these units informal.

AlphaSmart Pro can be purchased from Intelligent Peripheral Devices in Cupertino. The phone number is (408) 252-9400; fax number is (408) 252-9409. Also, you can check out their home page at http://www.alphasmart.com or AlphaSmart may be ordered from one of their distributors. See their Web page at http://www.alphasmart.com for a list of local distributors and 800 phone number national distributors. Lead time from IPD is usually 4 weeks, but their distributors usually have stock and can ship right away. (For buying 1 or 2 units, IPD encourages customers to call one of their distributors.)

A final statement—although I have had no technical or mechanical problems from AlphaSmart Pro, I did receive feedback from one owner saying that they had a problem with their ASP (they would push the *D* key and would get the letter *C* on the screen). The owner immediately called Intelligent Peripheral Devices to get some tech support, and to date (48 hours later) has not been called back. Upon hearing this complaint, I emailed IPD immediately and was contacted within the hour by their tech support manager. He offered to take care of the problem immediately. This could have been merely a case where a customer's request fell through the cracks (unacceptable, but forgivable) or this might be an overall reflection of IPD's tech support. I am more likely to believe it is the first case until I hear further reports to the contrary.

All in all, if tech support improves (and understand, this is the only complaint I have heard), I consider this to be one smart buy.

AlphaSmart Pro
Intelligent Peripheral Devices
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Phone: (408) 252-9400
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www.alphasmart.com

Epson Stylus XL Pro

by Tony Laidig

This behemoth has been sitting at the BMUG Office for more than six months, given occasional use by Publications Manager Emeline Mann Sanchez. I sensed that she was depressed seeing it going unused on a regular basis and asked if I could review it. I would like to see how a Multiplatform printer (I myself have a PC, running OS/2 Warp 3.0 and "Windoze" 3.1) performs on both platforms.

The Epson Stylus XL Pro (Printer from here out) can print photo-quality, full-bleed CMYK 720x720 dpi color (on Epson paper—$20 for 150 sheets). It can be used for workgroups (optional Ethertalk/Ethernet and Localtalk interfaces are available). To make the printer really useful though, you must spend $300 for the optional PostScript software (the manual has no definition for what this is).

Speaking of the manual, it looks big but skimps on things like the definition of High Speed mode, and which dithering method is better (how to shade halftone images). Only a Windows driver manual came in the box (but no Windows disks). The PostScript software (as I described above) is not described. I keep wondering what this is, a PPD (PostScript Printer Driver) or some ROM upgrade?

The printer drivers were nice (at least the Mac and OS/2 ones). The Windows driver kept crashing in Photoshop 2.5.1 (the driver wants 3.0.1) and PageMaker 5.0a (in both native and OS/2's implementation of Windoze). The version of the Mac driver that came with the printer was not compatible with PCI-based Power Macs (i.e. BMUG's Publications PowerCenter 604/132). The remedy was to get version 2.5 of the driver (2.0.1 came in the box), downloadable off Epson's Web site (not one of the fastest sites, so expect it to take a while).

I printed the same image on several different types of paper, the Epson Coated paper, standard office Laser/InkJet paper, heavy textured paper (similar to watercolor paper), and a premium InkJet paper. The best paper to use (obviously) is the Epson coated stuff, but this does have a downside. The flaws in this paper are (a) the paper is only coated on one side (if you stick it in the wrong side the ink doesn't dry for more than a week), and (b) the coated side of the paper is sticky, so if you touch the surface with your fingers, the ink will smudge. Epson does put sheets of tracing paper between every two sheets of the coated paper, but when you shove in 70 sheets (the maximum capacity of the printer's paper tray) of the coated paper, would you like to take out 35 or 36 pieces of lower quality paper?

The standard office paper allows printing at 360 dpi (720 is an option, but the results are almost the same). This is good for documents with colored text. The black text mode is a little fuzzier than my DeskWriter/DeskJet 520 printer (at 720 x 720 dpi versus 600x300 dpi).

The heavy texture picture did not like color. The color images I printed on it turned different colors (some of the lighter blues washed out). Though not suitable for Image printing, the 720 x 720 dpi color text looked wonderful, though blue turned purple-ish on this paper.

The premium InkJet paper looked nice, and had comparable results to my DeskJet/Writer—it probably is than the DeskJet, though through a loupe it looked the same. Color line art looked about the same as on the office paper. The 720 x 720 dpi pictures were really nice, better than the office paper, though it wasn't the Epson-coated quality.

Speed is something that this printer lacks: 13 minutes for an 11 x 17 sheet of black text (nine minutes on the High Speed mode). A full-bleed, full-size 8.5 x 11 color photo at 720 x 720 dpi took 30–45 minutes depending on how much available memory there was. Printing a PageMaker document (a 3-page report I wrote for last year's English class with some inline images) printed in a little over 12 minutes. The DeskJet printed the same report in seven minutes.

Though this behemoth is really slow, it can print 13 x 19 sheets of paper (with a third of an inch margin), and came in handy when I needed to draw a plan on 11 x 17 paper for drafting.

At Seybold Expo 96, Epson was distributing 13 x 19 sheets of output out of this printer. The show was dominated by this printer. It was plugged as "*the* printer for printing color proofs" and it is, if you have a print server or you choose to have it print all night. None of the ads told you about speed, but they stress photo-quality color (though I guess you have to sacrifice something). Only in fine print on Epson's print sample from Seybold does it describe that it took 40 minutes to print out that page.

The Bottom line: *great* printer, *real slow*. If you want a speedy photo-quality color printer buy a Color LaserWriter or LaserJet, though they cost three or four times as much as this $1,800 printer ($2,000 if you get the PostScript software). If you don't have $7,500 to fork over for a Color Laser Printer, or need wide format (13 x 19), and have either a print server or will sacrifice your computer for 30–45 minutes a page, buy it.

Minimum System Requirements:
Computer: Mac SE or later
System 7.1 or later
8 megs of RAM
20 megs of hard disk space

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600-DPI Dream Machine?

The Alps MD-4000 Color Printer

by David Scott

Suppose I told you there's a new, low-cost color printer that makes high-quality prints. "Nope, can't be" you say. "Those low-cost color printers are always inkjets, and they can't print photographs very well. You can always see the dithering if you look close. Besides, the ink smears easily."

Okay, how about if it isn't an inkjet? Would you be interested then? How about if it not only prints at 600 x 600 dpi, it also creates prints that are waterproof and fade-proof? How about if it can not only make normal prints on paper, but also greeting cards, overhead transparencies, and iron-on transfers? How about if, in addition to all that, it can also print in special metallic colors, like gold and silver?

Not interested yet? How about if we throw in 1,200 x 600-dpi monochrome and grayscale printing? (Does anybody in your neighborhood have a 1,200-dpi printer? Even if they do, I'll bet they don't let *you* mess with it.)

Still not interested? *Allll-righty* then, let's include a 600-dpi scanner, too. Ah, I thought that would get your attention. But now you want to know the price, as you are sure my definition of "low-cost" is way off base.

New Technology

The Alps MD-4000 color printer uses a new technology Alps calls "Micro Dry." Four separate ribbons (cyan, magenta, yellow, and black) are used in a four-pass process to create photo-realistic prints. The color is transferred from the ribbons using a thermal print head, which results in a very smooth, permanent print without visible dithering patterns. (Technically, this printer doesn't use dithering.) In other words, it looks pretty much like a real photograph, assuming your original image data looks like a real photograph. I was very impressed with the quality of the prints I saw. (Occasionally there was a very slight banding in the image due to the way the picture is built up out of stripes, but most prints did not have a problem.)

Of course, there have been other printers in the past that used somewhat similar methods, but Alps has managed to reduce it to a small, low-cost unit (yes, we'll get to the prices in a moment). As the name implies, the prints are absolutely dry when they exit the printer, so you don't have to follow any special handling precautions. They are also waterproof, so they won't streak or smudge, even if you drip water on them. They are supposed to be fade-proof, even in sunlight, but I'll leave the accelerated aging tests as an exercise for the reader.

It can also print in special metallic colors, like gold and silver…

Like the personally priced printers it competes with, the Alps is not a PostScript printer, but the Alps people tell me that they have had good success running it with one of the commercially available PostScript interpreters.

Making Connections

The printer connects to the Mac via the SCSI bus, which has two advantages. Most users have a free SCSI ID number, but many do not have a free serial port. The other advantage is that data can move between the computer and the printer much faster over the SCSI bus. (The Wintel version of the printer uses a parallel port connection.)

When I first hooked up the printer, I felt kind of silly using a big, fat SCSI cable to connect a printer. However, since I already had a LaserWriter and a modem filling up my serial ports, I quickly saw the light. If both printers used LocalTalk, they could have been daisy-chained on that network, but since the MD-4000 isn't a LocalTalk printer, I would have had to switch cables whenever I wanted to switch printers.

Of course, not being a LocalTalk device also means that the printer is not accessible over a network. This might be inconvenient in a large office setting, but for personal and SOHO (Small Office-Home Office) use, it should be fine.

More Cool Design Features

One of the problems with most of the low-cost inkjet printers is that the color cartridge must be thrown out as soon as any *one* of the ink tanks runs dry, which

isn't very economical or ecological. The MD-4000 uses four ribbon cassettes, each of which can be replaced individually. Because of the high resolution of the printer, I assumed that I would have to waste a sheet of paper whenever a ribbon ran out in the middle of printing, since I would obviously have to start over after installing a fresh ribbon. But, to my delight, when it did happen, the printer simply stopped in mid-stream, flashed me an error dialog explaining that ribbon number such-and-such had run out, and asked me to either rectify the situation or press the Cancel button. The front of the printer opens easily with the press of a catch on one side, and it lowers to reveal the four ribbons in their holders. It's a simple matter to pop out the spent cassette and snap in the new one (which you conveniently remembered to buy last week). The printing then continues, and I was unable to detect any lines or marks on my print to indicate where the ribbon had run out.

You may be wondering how the four ribbons fit in around the one printhead. The Alps design here is somewhat reminiscent of a CD changer, in that the ribbon cassettes normally sit quietly in their holders and get picked up by the head when needed. The whole printing process goes like this:

1. The print driver takes the original data from your application and creates the four CMYK color separations, storing them in a temporary buffer on your hard drive.
2. The separations are then printed, one at a time. The printhead picks up the corresponding ribbon cassette and prints the whole page in that one color.
3. As each pass is finished, the paper is rolled backwards through the printer, the ribbon cassette is changed, and the next pass begins.

This means that you get to watch the interesting development as the full-color image is built up from the four colors of the ribbons, since the paper comes most of the way out of the front of the printer on each pass before it is rolled back to the beginning.

Disk Space

Since I usually live life on the edge (i.e., my hard disk is always full), I first thought that the MD-4000 was a very slow, one-pass printer. This is the mode that it uses when it can't find enough space for its temporary buffer. It was impressive to hear it clicking all four ribbon cassettes in and out for every centimeter that the paper advanced, but waiting 20 or 30 minutes per page wasn't so exciting.

Depending on the size of the image, the space needed for the buffer can be up to 40 megs. I would advise you, if you don't already have it, to clear off enough space and avoid making the poor printer jump through hoops. However, I was very thankful that the print driver programmers had gone to the trouble to put in that alternative feature, since I wouldn't have seen any prints at all otherwise. I eventually connected one of my external drives (which are all full) and managed to make enough space to see how the printer is supposed to work. (One really neat feature is that the driver will check all the available drives to find one with enough space. I wonder if it is smart enough not to try and use a volume mounted over a network.)

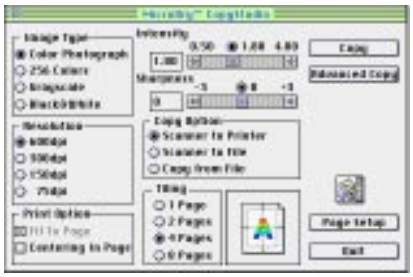

Figure 1. The CopyStudio Main screen offers many options for scanning and a few for printing.

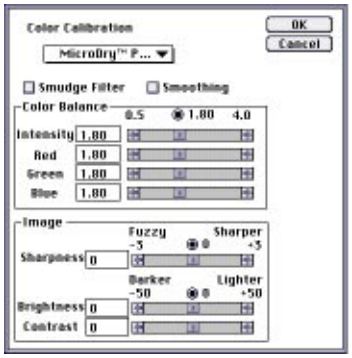

Figure 2. For those who can't leave well enough alone, the CopyStudio Image screen offers more options for adjusting a scan.

Print Time

My first print job after creating enough buffer room on the external drive was a rather large (2-meg) file, covering an entire page of paper, that I printed at 600 dpi. That time the four passes went very smoothly, taking only a few minutes to actually print the picture. Unfortunately, before the actual printing could start, I had to wait 30 minutes while it created the separations. Hmmm, not much improvement time-wise—but please be aware that I was printing from a IIci ('030 CPU at 25 MHz). I assume that the separation process would be faster on a faster machine.

Smaller files took less time, and printing a page of black text at 300 dpi took about 90 seconds.

Scanning

The MD-4000 includes a built-in scanner. (The MD-2010 is also available, and is the same as the MD-4000 minus the scanner.) Here again, the speed of the SCSI connection is very helpful, since scanners can produce a lot of data. Those of you who have been messing with Macs for a long time may remember that somebody once made a device that snapped onto an ImageWriter and turned it into a slow, low-resolution scanner. Well, the MD-4000 is sort of the same idea, but brought up to date. It looks identical to the MD-2010 but includes the full-color 600 dpi scanning head inside.

Using the MD-4000 "sheet-feed" scanner is quite different from using a typical flatbed scanner. To scan a document, you must first insert it into one of two included document holders. One holder is smaller and is used for snapshots and so on. The other can hold a full-size sheet of paper or large photographs. The sheet feeder on the printer, which normally sits at about a 45-degree angle, is dropped down to the horizontal by pressing a release on the side. The document holder is then inserted into the printer, just as if it were a piece of paper to be printed on. A utility called MD CopyStudio is used to make the scans, and it has three main functions, listed under "Copy Options" (Figure 1).

CopyStudio

The "Scanner to File" option does what it says, and the "Copy from File"

function is used to print a file that exists on your drive. The "Scanner to Printer" function makes the MD-4000 into a color copier, but keep in mind that you have to insert the original into the holder, drop the sheet feeder, insert the holder, wait for the scan, remove the holder, raise the feeder, insert a piece of paper, and (whew!) wait for the printing to finish. Obviously this isn't going to replace a copy machine in a busy office, and you must also remember that you cannot scan anything out of a book without first using a real copy machine to copy the page you want to scan.

The CopyStudio application is rather extensive, giving you a lot of control over your scans (Figure 2). The Color Calibration menu lets you select "MicroDry Printer" or "Screen." (The printer driver can use Apple's ColorSync system when you print.) As you can see in Figure 1, there is also a "Tiling" option, which blows the image up and prints it across two, four, or eight pages, for making posters. The "Advanced Copy" button opens up a scan control screen with a preview window, so you can make a quick preview scan of the entire original and then select a rectangular section out of it for your final scan.

After a scan is finished, you can save it as a PICT, BMP (Windows format), GIF, JPEG, or TIFF file, although some formats will not be available depending on the color depth. Once you save the scan, however, it is immediately erased from RAM, meaning that you cannot save it again in a different format. The preview scan is also erased, so you have to start over even if you want to scan the same area you selected again.

Paper

The MicroDry process prints on plain paper, but there may be slight dropouts due to the roughness of the paper surface. The result is a few very tiny white spots here and there. There is a special Printing Enhancement option in the print dialog box which causes the printer to print everything twice to fill in the spots, but it can only be used for grayscale or black-and-white printing.

A better option is to buy the special high-grade paper Alps sells. This is not coated paper like that sold for inkjets, and in fact you should never use coated paper in these Alps printers. Alps' high-grade paper is simply smoother than usual. When I showed some of my first creations to a friend who's a graphics designer, he wasn't particularly impressed with my artistic abilities, but he kept rubbing his fingers over the printout, saying "Wow, where did you get this paper?" It feels very nice, prints beautifully, and gives a very professional air to your work.

Other media that can be used include overhead projector transparencies, iron-on sheets, back-print film, and cardboard. Yes, the print dialog actually lets you select "Cardboard" as a type of media, although I wouldn't try to stuff pieces of an old refrigerator box through. Obviously, it should be fairly smooth, thin cardboard, and it's meant for things like greeting cards and calendars. The combination of the metallic ribbons and shiny black cardboard stock makes for some gorgeous cards that will make you the envy of your inkjet-setter friends. The back-print film can be used to create a shiny image on normal white paper. You print a mirror-image onto the film, then transfer it to a piece of paper using a normal iron. (The metallic colors cannot be used for the iron-on or back-print film.) All these special materials, including the cards and cardboard, should be available from your Alps dealer.

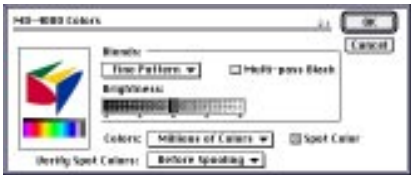

Figure 3. One level below the main print dialog is the Colors dialog, with settings I wish I could access in the main dialog box.

Ribbons

For normal color printing you load the printer with one each of the cyan, magenta, yellow, and black ribbons. The printer is very smart and always knows what ribbons are loaded and where, so you can install them in any order into the four holders. You can also install other combinations, such as two or more black ribbons for printing plain text, and the printer will automatically switch ribbons when one runs out.

One of the unique features of this printer is the optional metallic color ribbons, which come in gold, silver, cyan, and magenta. These can be used alone or mixed with the normal ribbons. Unlike the normal colors, the metallic colors cannot be used to print gradations, so you set certain spot colors in your image to be printed using the metallic ribbons. Since there are only four ribbon holders in the printer, you might think you cannot print an image in full color plus a metallic color, but there are actually two ways to achieve this. The multipage mode causes the printer to pull the paper back in after printing the metallic colors, allowing you to change the ribbons and then print a full-color image on the same page, sort of like a double-exposure in a camera. The simultaneous method uses a special multicolor ribbon, along with the black ribbon and one or two metallic ribbons. Because the metallic colors are opaque, they can be used on black or other dark paper or card stock.

Critique

As I write this in late 1996, both printers have been released in Japan and are about to be released in the United States. I tested almost-final versions of CopyStudio and the printer driver and made a few suggestions to the company for improvements. One thing I disliked about the printer driver was that it did not show the printing mode in the main dialog box. You have to push a button to get a second dialog (Figure 3) before you can select from "Millions of Colors," "Fixed Color," "Grayscale," and "Black & White." A second problem is that the setting reverts to "Millions of Colors" after every print, so you have to reset it over and over if you're printing anything else.

The Page Setup dialog has an Edit button that lets you define custom page sizes. This is a very nice feature. The Edit dialog also lets you select a default page size, but unfortunately it didn't seem to work—every new document defaulted to Letter even though my default setting was A4. Hopefully this will be fixed in the final release.

Another nice feature is the Print Preview, which lets you scroll through multiple pages and zoom in and out. For al-

most the first time in my life, I found the Balloon Help to be useful. Turning it on is a good way to understand the various options in the print dialog, and it lets you find out, for instance, that Medium is 300 dpi, Best is 600 dpi, and Super is 1,200 x 600, monochrome only.

The printer driver is from Palomar Software, and if you like eggs in your programs, you can Command-Option-Click on the version number in the print dialog box to see the programmer credits under an animated rainbow-colored logo. (The version I had was 2.1. The version you get may be different.)

If you've read this far, you should have some idea about whether this printer is for you. Although 300 dpi resolution is good enough for full-color pictures, the 600 dpi capability means that you can also print razor-sharp text and line drawings. Printing pictures is fun, but I particularly enjoyed turning out color screen shots, Web pages, and text with colored titles and accents. These type of things looked incredible, especially when they were reduced in size. And printing eight-, seven-, or even six-point text on the special paper in the Super 1,200-dpi mode resulted in a perfectly professional-looking document any company would be proud to hand to a customer. I still get a kick out of handing them to friends, because they look like something that you just could not have produced at home.

As I was writing this article I kept checking the prices of inkjets, and I was amazed to see that you can now buy a color printer for the same price I paid a few years ago for just my keyboard. While the Alps is not quite that low, I feel that it has enough advantages over inkjet output to warrant a higher price, especially if you want more permanent, better-looking prints.

The Next Step

In Japan, Alps is just about to release its next innovation, which is a version of the current printer that can also do dye-sublimation printing. You put in special ribbons, use coated paper, and get prints that look just like 8-by-10 glossy color photographs. I've seen some of these beautiful prints, and I'm told it is not only the first 600-dpi dye-sub printer, but it will sell for about one fifth the cost of competing units. The really good news is that it's supposed to be released in the United States in the first quarter of 1997, so you may be able to run out right now and check it out! This looks like a tremendous breakthrough for any graphics professional—the world's first personal dye-sub printer.

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List Prices
MD-2010 printer: $499.00
MD-4000 printer
with scanner: $699.00
High-grade paper (200 sheets): $14.99
Standard ribbons (C,M,Y,K): $6.60
Metallic ribbons: $8.99

A Note on Color Laser Printers

Or Toto, I Don't Think This is a Black-and-White Laser Printer!

by Lyle H. Nishida

This is intended more as a caution rather than a review.

If you are a Macintosh user like my self, then you have grown used to high quality black-and-white printing. In fact, I can hardly remember printing to a dot-matrix printer. The "crunchy" nine-pin output of a typical dot-matrix printer was banished forever with the arrival of an HP DeskWriter ink jet printer. It was followed by a long line of Apple LaserWriters, HP DeskWriters, and LaserJets on my desk.

With each generation, the printers became easier to purchase, set up, and use. For most of us, the output went from 300-dpi black-and-white to 600-dpi grayscale. I did take a stop off the black-and-white printer parade with a color DeskWriter. The output quality was fine, just slow.

Today you can purchase an Apple LaserWriter with 600-dpi grayscale output for less than one thousand dollars, set it up in less than 15 minutes, and not spend any time thinking out it until it runs out of toner. For a home user, the replacement of the toner cartridge may be something like an annual event.

I have installed and used a few other types of printers. As far as color printers go, this includes dye-sublimation, ink jet, and thermal-wax types. I had never even thought about a color laser printer until the prices went below ten grand. In this case, it wasn't for my personal use but rather as a tool to use at work. I work for a large company doing Macintosh and Windows support. In my current job I felt the need to step up to a higher quality color printer with faster output. My criteria was for an EtherTalk, PostScript Level 2 color laser printer. I came to this conclusion after looking at the various output options that our group needed. We are a mix of designers, writers, and marketing folks. I dismissed the other types of color printers as all being single-use types. Dye-sub and thermal-wax machines are great for photo work but do not produce as high quality text. Ink jets are slower and more expensive per page. We need to print everything from photos and graphics to email messages. From the specs, these units seemed like contenders: the Xerox 4920, the HP Color LaserJet 5M, and the Apple Color LaserWriter 12/600 PS.

The HP has the advantage of offering 11-by-17-inch black-and-white output. The other two offer a maximum size output of 8.5 inches by 14 inches.

Ease of setup

This is the area that could use the most improvement. Each of these units requires some painstaking setup.

The Xerox uses a drum that needs to be installed. In my case, the Xerox was set up for me. In fact, if you or your company is on a contract with Xerox, you get to miss out on the setup.

The biggest problem with the Xerox is that it uses a patched version of the LaserWriter driver, and to have access to the lower tray, you need to install this on every machine. Without the driver, the printer still prints, but without any of the advanced features you paid for. I have had some problems with this driver on various PowerMacs.

The HP uses bottles of toner, which I seem to be able to spill everywhere. This printer is the best reason to have a very high suction cleaner available. You will need it sooner rather than later. Be sure to load the toner correctly. I can only guess what the output would look like with the magenta toner in the yellow container, so buyer beware! This could be a serious problem.

The HP uses the LaserWriter 8.4.1 driver. It comes with files that allow you to use the custom features of the printer without using a "patched" driver like the Xerox.

The Apple uses a "revolver" style carriage to load the toner cartidges. You rotate each slot into place and then load the corresponding color-coded cartridge. The containers cannot be loaded into the wrong slots, and the carriages are sealed. Somebody was thinking here. Like the HP, the Apple printer uses the LaserWriter 8.4.1 driver and its own custom-printing files.

For ease of setup, my vote goes to the Apple.

Speed

Each of these units takes a long time to get out the first page. It doesn't seem to matter if the page is color or black and white. They all take longer than networked black-and-white laser printers.

I found the Xerox to be the slowest, HP slightly faster, and the Apple the fastest—not that the speed of the slowest to the fastest made a difference. I am talking about speed in the zero-to-60 sense: You could measure it, but it would not be a factor in the real world.

In each case, if you are printing out a multiple-page document, the speed does improve. In each case I turned off the "energy saver" mode or modes to see if

this helped. The energy saver mode puts the printer into a sleep mode when it is not processing a print job. I did not find a real-world difference in first-page print speed with the energy saver off or on.

Output

Okay, it really doesn't matter how easy a printer is to set up, or how fast it is. You're buying one of these units to print, and hopefully to print out great color.

The print quality from Quark XPress, Adobe Photoshop, and Adobe Illustrator files were different from each other, both on the same printer and from one printer to another. None looked like they did on the monitor, and they differed in surprising ways.

I found the Xerox to print dark and with a somewhat overall cyan/blue color. The prints from Photoshop files showed a lot of "banding."

The HP produced some of the same kinds of banding, although at a much lower level.

The Apple was better but still had banded output from my Photoshop files. In no case were any of the printers equal to a dye-sub printer for Photoshop files. I suppose that this a limitation of the technology at this point in time.

All of the printers produced better color results when printing CMYK format files rather than RGB files. This makes sense since the devices all use cyan, magenta, yellow, and black toner cartridges. The differences here are not subtle. Washed-out colors and more pronounced banding resulted from RGB output. CMYK formatting resulted in density, contrast range, and saturation more closely resembling the screen images.

In the case of proofs of GIFs destined for the Web, the files that had been converted to CMYK also printed more successfully. In these cases, you could convert the file, print it, and then undo the CMYK conversion. It's a pain, but the output is certainly better.

For more mundane tasks, the output seemed to be similar for each of the printers. Microsoft Excel, Microsoft Word, FileMaker Pro, Nisus Writer, Now Up-To-Date, and Now Contact files all printed out just fine—that is to say, with the same quality as you would expect from a high-end black-and-white laser printer.

Price

The Xerox printer retails for about 10 grand. The HP and Apple each cost just under $7,000—not cheap. The Xerox can turn out to be the least expensive, if you're on a contract with Xerox business systems. As usual, check with your reseller for exact pricing.

Strange conclusions

Is this enough? I kept asking myself just that question during my time with these printers. To be fair, I was able to spend just a couple of weeks with each printer—hardly enough time to come to a final conclusion. During that time with them, I was able to print a wide range of files with each printer. I think I have a better understanding of the limits of the technology than most users do.

To start with, you need to evaluate what your needs really are. As simple as that sounds, thinking this through will help a lot in the long run.

If the needs are for black-and-white output for a group, with occasional color photo prints, I suggest a high-end black-and-white laser printer and a dye-sub printer. The black-and-white will be faster, cheaper, and easier to set up than the color laser will be. The dye-sub will produce better quality photos than the color laser will.

If the needs are for black-and-white output for a group, with occasional color prints and overheads, I suggest a high-end black-and-white laser printer and a high-end color ink jet printer. This setup would be less expensive and more versatile than a color laser printer would be.

My next step will be to look at the high-end Epson and HP ink jets to see if that is where this road takes me. Another note is that Apple has improved on the Apple Color LaserWriter 12/600 PS; it can be upgraded to the new 12/660. The main difference is a printing speed up to 30 percent faster. The cost for the upgrade is less than $300 including labor.

Oh, yes—I was disappointed enough not to buy any of the color laser printers, but my department ended up "adopting" an Apple Color LaserWriter 12/600 PS. Next year, my employer will be buying an HP 5M color, so we'll have both as output options.

If I had to make a choice, I would pick the HP because of the 11-by-17-inch black-and-white output, making the letter-sized color printing sort of a "free" extra feature.

Two video cameras

by Don Modesto

Desktop video has progressed from exotic—if flaky, shaky, and *costly*—third-party add-on boards to a standard feature on some Mac models. This means the marriage of digital and video formats (if not yet the honeymoon as we still seem to be dragging around a bunch of shoes and cans behind us—can you say 'frame rate'? Can you say 'high speed disk array'?). We can plug our Sony into the Mac's S-video-in socket and bring stills and motion onto the screen and into QuickTime movies.

Below I look at two movie cameras. Neither has memory so they both are tied to your desktop. One is a surveillance camera and the other seems to be a surveillance camera adapted to the needs of computer imaging. Both are one-third inch CCD cameras.

Gazing out of the Fishbowl

Pros: Compact, clear images, useful mounting brackets.
Cons: Wide angle lens produces fish-eye pics; black and white, no sound.
Ideal Application: Surveillance.
Price: 49,800 yen at Tokyu Hands.
Contact: 0265-43-2691
(Japanese only)

Unless you want a window on your Mac offering you a very wide view of your surroundings, this is probably not a camera for your needs. First, it is a black and white, no sound, no frills affair. But more tellingly, the wide-angle lens which makes the Oxo ideal for showing who lurks outside your front door also shows everything from a fish-eye view (Figure 1).

I clipped a two page ad from a Mac rag onto a binder and held it up about a foot from the camera. The Oxo reversed the slightly concave bow of the surface into a strongly convex arch (Figure 2).

A moderately longer lens would get rid of the distortion. Unfortunately, the compact design of the unit is such as to

Figure 1

inhibit the addition of lenses. This is unfortunate because the Oxo does have some nice features. Pictures the one-third inch CCD took (using the video utility Apple bundles with its AV machines) were very handsome gray-scale images. The resolution is 250,000 pixels.

The Oxo comes with three brackets. The camera is screwed onto the first which allows for a horizontal pan of 45°. The second bracket allows the unit to move up and down about 20°. The third bracket is for mounting on the wall.

As befits a security camera, the cables are generous. You get 240 cm from the camera to the S-video socket on the interface and another 136 from the interface to the monitor. The interface itself is slightly bigger and lighter than a pack of cigarettes. It has outlets for TV and video, an on/off switch, and, of course, the AC cord.

A handsome, if innocuous camera, the Oxo would only take a small bit of adaptation to make it useful to the computer user, namely color capability and a threaded ring for changing the lens from the fish-eye you get at present to a device capable of delivering undistorted images to your screen. The price is more than twice that of the Connectix QuickCam which also does audio recording, but the QuickCam's motion video is choppy and

Figure 2

Connectix itself advises against using the QuickCam's sound capabilities.

Nippon Control TeleCam

Pros: Clear images, flexible video input, sound.
Cons: Expensive, needs AV machine.
Ideal Application: In-house video-conferencing.
Price: Lists at 66,000 yen (or 71,000 yen for unit with Tamron zoom lens), 9,000 for support arm; available only at T-Zone.
Contact: 0492-83-7111

Figure 3

Nippon Control's Telecam delivers clean color images to the desktop (Figure 3). Like the Oxo, it has no independent means of storage and must be connected to the AV port of your Mac. Unlike the Oxo, it has no separate interface box, no mounting brackets (it has a place to screw in a tripod), it offers sound, and the resolution is 410,000 pixels. The Telecam unit itself accepts input from S-video or RCA jacks.

Unlike the choppy movies you get from a Connectix' QuickCam, the Telecam's motion is smooth and seamless. None of the pictures I brought into my Mac suffered those stray artifacts you sometimes find with digitized pics. Such odd pixels are probably due more to the compression schemes of the software rather than cameras themselves, though. As the Telecam does no compression—indeed, comes with no software—it is not an issue.

There is an iris mechanism for adjusting brightness as well as external color controls. A small stand is included with the camera. It screws into the tripod mount and comes with velcro strips for securing the unit in place. The more expensive unit has a Tamron lens included with the Telecam. It features a brightness control and a 2.286X manual zoom. There is also an optional tubular 'L' mount (pictured) which allows you to move the camera forward and back, up and down, and at angles. The mount affixes to a flat surface with double sided tape. I worried at first that it wouldn't be strong enough to hold the weight of the camera out on the arm, but there was not even a hint of slippage. (It wouldn't be advisable to mount the tape horizontally on a vertical surface, though, as this would lessen the effective support from 25 cm of bond to two.)

For digitizing images, the Telecam is a handsome unit, if a little expensive. It does suffer the drawback of being tied to your Mac by a video cable. It is designed for tele-conferencing and as wide-band networks increase, Nippon Control expects Telecam sales to increase right along with them. If you need high quality images across Ethernet, the Telecam is a good choice. Right now the only place to see it is at T-Zone in Akihabara. If you have questions, call Mr. Nakamura in Japanese or English.

Don Modesto frequents the Planet via TCP from Global Online and United from Narita.

My Adventures in Recording CD-ROM

by Chi Tran

Three years ago, CD-Recordable writers were exotic, expensive items at $7,000 each. Now that they have dropped from $1,200 in 1995 to $600 in 1996, it is time to take another look at the CD-R products in actual operation. This article summarizes my personal experience working with a variety of CD-R products over the past four years, and some basic rules to successful CD-R operation.For background information, the reader should refer to Fred Swan's excellent article in the Fall 1995 BMUG Newsletter (p.163).

A long time ago, when CD-R products were the size of a VCR (Kodak PCD-200 and Phillips CDD-521) and 1-gigabyte hard drives were $1,200, I ventured into the world of CD-R (OK, Compact Disc Recordable). After ruining a couple of blank discs, I figured out that my 1-gig hard drive was interrupting the data stream for thermal recalibration. CD-Rs don't like that a bit. CD-Rs expect a steady stream of data, about 150 kilobytes per second for single speed, 300 kilobytes per second for double speed or 600 kilobytes per second for quad speed. My Quadra 660av (68040 processor at 25 MHz) was quite capable of handling the data, but the external hard disc wanted to pause every so often to thermally recalibrate (the magnetic platters expand as the drive warms up, and the heads recalibrate so that they track the data accurately, or something like that). I asked tech support whether I should place the hard disc in my refrigerator, but they didn't find that humorous. So I bought an AV drive, which worked just fine. The majority of drives currently made by IBM, Quantum, Conner, and Seagate have what are called "embedded servo," which automagically accomplish thermal recal, and therefore are not subject to drop data. Micropolis AV drives are also excellent. It is also useful to have a clean and simple SCSI chain, with good cables, and properly terminated

Due to superstition and sage advice, I disconnect scanners and network connections, turn off AppleTalk, turn off the fax/modem, alarm clock, and screen saver, and remove my coffee from the retractable cup holder in the front of my computer. My experience with a Kodak PCD-200+, which was discontinued a few years ago, taught me the importance of the buffer size. The CD-R buffer is a certain amount of cache memory (a minuscule 256K in the PCD 200) which holds the data in a ready state to write to the blank disc. Of the currently available CD-R units, Yamaha 100 and 102 both have 512K buffers; HP, Phillips, Ricoh, Pinnacle, Pioneer, and Sony have 1 meg or more. All will do just fine.

I can create a custom audio CD on a CD blank. It's like creating my own selection of music on cassette…

The premastering software that I have used includes QuickTOPIX from Optical Media International, and Toast from Astarte. QuickTOPIX sports the same user interface on its Windows and its Mac version. It can be a bit intimidating initially, but the manual is excellent, and provides the ability to set up templates for a variety of CDs to be recorded. Therefore, the next time a particular configuration of a CD needs to be written, the template can be loaded and the recording accomplished. Score for QuickTOPIX; very good for production, though intimidating to casual users and beginners. QuickTOPIX handles Audio CD, Mac, Unix, Win, DOS, hybrids etc.

Another very good product from Optical Media is Disc to Disk, which allows me to digitally transfer an audio track from a CD to an AIFF file on the hard disk. Using Disc to Disk, I can select my favorite songs/music from any audio CDs and save them as AIFF on the big hard drive. Then, I can create a custom audio CD on a CD blank. It's like creating my own selection of music on cassette, except that here, it ends up being on a CD—and since it is an all-digital transfer, there is no loss between the original and the copy. This process may be rather illegal if done for profit or with the intent to defraud the copyright owners. I suppose that it is okay for personal use, especially after having purchased the original music CD.

My favorite premastering software is Toast by Astarte (available from Catalogic in Mountain View; 1-800-255-4020). Toast has a very friendly Mac in-

terface, is very versatile, and supports drag-and-drop. Version 3 of Toast allows the Mac to use some of its RAM as a supplemental buffer to the CD-R.

Toast allows me to make duplicate or incremental backup of the data and programs on my hard drives, after which I can delete unused items and free up hard drive space. I can create audio CD, hybrid (Mac/Win/DOS/Unix) discs, etc. Toast 3 also analyzes and defragments hard-drive files in preparation for writing to CDs, and it can create a bootable CD for Macs. In my opinion, Toast is the friendliest, easiest premastering software for Macs. Serious producers of Music CD's may want to look at DigiDesign Masterlist, or better yet CD-DA by Astarte, also available from Catalogic. I don't work for them, but they are by far the nicest, most professional people that I know in the CD-R and commercial CD production business.

What is a minimum hardware configuration to write CD-R? First, a Mac with a 68040 or PowerPC processor (I know, some people can do it on a Mac IIci.). Next, a minimum 730-meg hard drive that doesn't pause for thermal recalibration, and any currently made CD-R writer (2X, 4X or 6X), with at least a 512K buffer. High-quality premastering software (I like Toast 3) is essential. I would recommend a lean and mean system folder with only the extensions that are needed to create the CD-R (do you want funky sounding alerts or reliable CD-R creation?). The coolest setup that I have seen is a PowerBook 540c with an external combination Jaz drive (1-gig removable cartridge) and 4X CD-R. This combo creates a CD in 18 minutes! It weighs in at 15 pounds (7 pounds for the PowerBook, 8 pounds for Jaz/CD-R) and is quite portable. Okay, luggable.

So if you already have a Mac, to start making your own CD, you'll need the external hard drive ($300 estimated), Toast, a CD-R writer (about $700 and dropping), and some blank CDs ($7 to $10). The first few times, you may want to "simulate" the writing session to gain an understanding of the process and the peculiarities of your system. Plan to ruin a handful of blanks and consider their loss a lesson on what not to do (Hey, every piece of paper from your laser printer is a work of art, right?).

I have set up and operated a dozen different CD-R systems on Macs, Unix, and Windows 95, and I can say that the most reliable, predictable, friendly, easy to use system for CD-R is a Mac with Toast. It's very satisfying when you can easily create your own selection of 74 minutes of stereo CD music, or 650 megabytes of data.

The coolest setup that I have seen is a PowerBook 540c with an external combination Jaz drive and 4X CD-R. This combo creates a CD in 18 minutes! It weighs in at 15 pounds and is quite portable. Okay, luggable.

Chi Tran is with the University of the Pacific, San Francisco campus

Toast
Minimum hardware: Mac with a 68040 or PowerPC processor, a 730-meg hard drive that doesn't pause for thermal recalibration, and any currently made CD-R writer (2X, 4X or 6X), with at least a 512K buffer.

Catalogic Corporation
2685 Marine Way, Suite 1220
Mountain View, CA 94043
Phone (415) 961-4649
Fax (415) 962-5333
Email: sales@catalogic.com
Price: About $199

Telecom

The Question of the Medium

Defining the Internet in Form and Function

by Andy Brooks

Introduction

The Internet has been hailed and hyped by many to be the future method of communication. It will take the place of television and radio, some say. It will take the place of newspapers and magazines, others shout. Some even dare to suggest that it will take the place of books and libraries. Whatever the Internet might take the place of, it is definitely something that has gone from a trend and a toy to a serious form of communication. But what sort of communication is it?

Unlike the telephone, the Internet allows the user to interact with more than one person at one time. Unlike television and radio, it allows for the integration of interactive text and illustration. Unlike newspapers and magazines, it allows for integrated video and sound. Unlike all of these, it allows for the interaction of multiple users at the same time. Behind all the hoopla and hype of the Internet, no one yet has really tried to define what the Internet *is* . This article is going to try and answer that nagging question.

Many believe that the Internet is a new form of mass electronic communication. It is very easy to believe that. After all, lots of people use it, and it's an electronic form of communication: "mass communication." But the definition goes far deeper than that. Since the introduction of the radio, the phenomenon of "mass *electronic* communication" has been studied in-depth, and researchers have developed a pretty solid method for defining what a mass electronic medium is and what it is not. By accepting these standards and definitions, we can apply them to the Internet and see whether or not this new form of communication is a mass form of communication.

The remainder of this article will cover three basic areas of mass communication. I will describe the Internet's audience: How does it fit with the standard model of a mass communication audience? I will briefly cover four models of mass communication: Does the Internet fit into one of them, or does it create its own unique model? I will also discuss the importance of audience feedback (or response to a message) and how important it is in these models. Finally, I will describe some functions of mass media in society: Does the Internet perform these functions as well, and does it create some new ones?

Is the Internet a new form of mass electronic communication? Does it follow the rules of a mass medium, or does it shatter them and create its own, redefining what a mass medium is?

Effective Audience

The audience of a mass medium is by nature heterogeneous, very large, and anonymous. Is the audience associated with the Internet all of these things? Because the Internet is inherently interactive, as opposed to traditional mass media where the audience is merely passive, this question is not easily answered.

A heterogeneous audience is one where any individual in the audience is substantially different from any other one individual in that same audience. Many studies on the audience of the Internet have shown that for the most part these "viewers" are in their 20's and 30's, are college educated, and are white males. This leads to the conclusion that the Internet audience is relatively homogenous in nature—people who are more socially, economically, and mentally identical. This homogeneity, however, is changing rapidly. Through the powerful use of television and radio, the Internet audience has swelled in ranks, bringing new identities that do not fall into the Internet's traditional homogenous norm.

Unlike conventional mass mediums where anonymity is acquired usually through geographic isolation, the Internet provides anonymity through being completely interactive, participatory, and malleable.

A very large audience is an audience whose participation is so vast that it is in all practical terms impossible to count. Charles Wright, a well known media theorist, offers the definition of a very large audience as one where "the communicator could not interact with its members on a face-to-face basis" (*The Nature and Function of Mass Communication*).

Statistical measurements such as the Nielsen Ratings are crude representations at best of our more traditional forms of mass communication, and we have seen on the Internet that it is equally difficult to gauge the size and shape of any one particular site's audience.

An anonymous audience is an audience whose participants are unknown to the communicator and unknown to each other. Even when brought together physically, mass media audiences tend to be largely anonymous. The Internet is the proving ground for the ultimate anonymous audience; not only is anonymity easy to acquire, it is also easy to counteract. Unlike conventional mass media where anonymity is acquired usually through geographic isolation, the Internet provides anonymity by being completely interactive, participatory, and malleable. This inherent malleability allows for the construction of a whole new world not possible with traditional mass communication (commonly referred to and coined by William Gibson as "cyberspace"). Unlike television and radio, the anonymous audience on the Internet is anonymous not only because it is very large and heterogeneous, but because it has chosen to be anonymous by creating individual aliases and character facades. It would be necessarily simple to send and receive candidly on the Internet, thus eliminating anonymity altogether, but through a driving need for privacy in an increasingly non-private world, participants of the Internet have demanded privacy rather than having it forced upon them.

Medium Characteristics

Mass communication consists of three basic characteristics. Inherently, mass communication is rapid, public, and transient. As the Internet evolves, we are finding that it is beginning to conform neatly into these three characteristics.

The Internet is rapid. A message sent from the communicator to the target receivers or audience is extremely fast. On the whole, it is one of the fastest forms of broadband communication we have. Dismissing technical limitations for the moment, we have never seen such a rapid transmission of information. Unlike television, which often promises news "as it happens," the Internet can provide the same news "as it happens," but more importantly, *in real time*. The Internet is not restricted to time slots or commercials or thirty second updates throughout a busy day. The Internet can provide information as it is transmitted from the source to the distributor, circumventing the delays that follow as the information is disseminated in the normal way. Real time transmission of news and information through the shortest possible conduit (thus avoiding relays and gatekeepers) is something that both television and radio are unable to provide.

Unlike television, which often promises news "as it happens," the Internet can provide the same news "as it happens," but more importantly, in real time. The Internet is not restricted to time slots or commercials or thirty-second updates throughout a busy day.

Technically, the Internet is public. Much of the infrastructure that the Internet is built upon was paid for by federal research dollars, and thus came out of the taxpayer's wallet. In essence, the Internet belongs to everyone. Realistically, the Internet is not public. "Public," by definition, states that it is available to every individual and can be used and shared equally among all. As any of us who have recently priced out the newest communications and computer hardware know, this is not the case. The Internet started out as a student research project, made its way to the Federal Government with its deep coffers, and is finally a plaything of corporations and academia. Internet service providers and online services have massively defrayed the tremendous cost of acquiring Internet access, but hardware and software requirements needed for Internet access are still prohibitive for many people. Even today, the average newspaper costs only a quarter, and broadcast television and radio can still be picked up by a few wires, a cathode ray tube and a bunch of transistors. Cost is the most prohibitive factor that makes the Internet a *non-public* environment.

Of all three characteristics defining what is a mass medium, transience is most certainly the Internet's bailiwick. Email is written, sent, and deleted as soon as it is read by the recipient. Binary files are stuffed, encoded, sent and taken off the network in moments. Usenet servers process millions of messages a day, making the attempts by some to archive and catalog these messages seem feeble and pathetic at best. Web sites, probably the most stable form of communication available on the Internet, change faster than you can access them. Like television, you can never be sure what you're going to run into next. Unlike television, the Internet does not have a TV Guide to help you sort through the mess. "Search Engines" on the World Wide Web make a valiant attempt at maximizing time spent hunting down a myriad of topics, but even these fall short in updating their own databases with the latest information. It is very likely that the Internet is the most transient form of communication humankind has ever invented.

Models of Mass Communication

The first model of mass communication, shown in Figure 1, represents the traditional form of electronic communication between sender and receiver. The sender is usually a person or a collection of persons whose number is much smaller than the intended audience. The message

(shown in dark arrows) is sent out through a single conduit (or medium) and disseminated among the audience. Feedback, represented by the large gray arrow, is not immediate and does not come from each individual member of the audience. Instead, the sender of the message receives feedback through slow, complex, and circuitous channels. This long process of feedback allows for noise—data that enters the feedback flow from an external source that can disrupt the information in such a way as to make it inaccurate or useless. This model shows a single sender to many receivers, through a single conduit.

A second, more modern form of electronic mass media is shown in Figure 2. This model argues that mass communication is not defined by the number of audience members and the number of senders, but instead argues that mass communication is determined by the *ratio* between these two extremities. Figure 1 shows a very large sender transmitting a message to many small audience members or receivers. Figure 2 shows a discrete number of senders transmitting to a very large proportional number of receivers. A very good example of this model of communication is Cable Access television stations (also known as Community Access). With this technology at hand, anyone in the community can learn how to use the equipment provided and be their own television station for a half-hour. This introduction of "internal broadcasting" has become a popular trend, and may lead to the ultimate demise of conventional broadcast networks. However, you'll notice that feedback, again shown as a large gray arrow, still must come through the same complex, slow, and circuitous routes that it went through in the traditional model.

Figure 3 depicts an even more streamlined form of mass media. This model disregards both the audience size and the sender size. Instead, it focuses on a very key part of any mass medium: the medium itself. All of the models discussed previously have shown the message being transmitted through a single large conduit with a slow and inaccurate feedback process "washing" behind it. This model suggests that the conduit itself handles both transmission and feedback at the same time. Although the feedback is not yet instantaneous, it is far

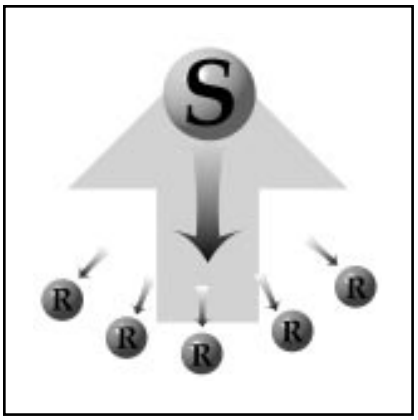

Figure 1.

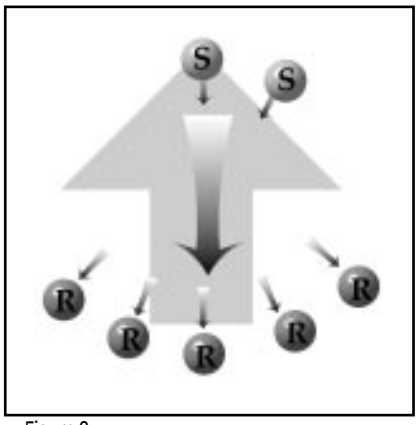

Figure 2.

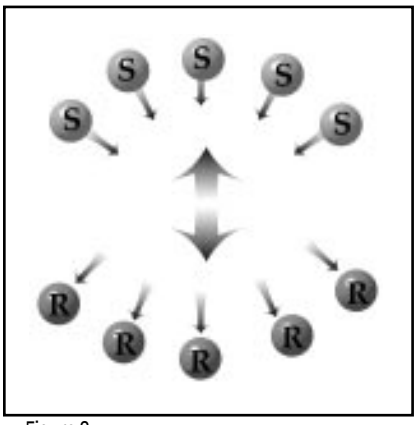

Figure 3.

quicker than the traditional means of obtaining feedback because the medium has now become two-way; feedback makes its way back to the sender as quickly as the message makes its way to the receiver. However, this is still not the most efficient form of communication. Because the sender and receiver are still separated by the conduit, feedback is not as instantaneous or immediate as the sender may desire. As with television and radio, change may happen very slowly, if at all, or the sender may get the wrong message, or an old message, from the receiver, and change the message in a completely unacceptable way.

Unlike television or radio, where you simply turn it on, tune it in, and absorb, the Internet encourages the user (for the most part) to get involved with the medium.

The fourth model of mass communication, pictured in Figure 4, is the most exciting form of mass communication. It is the "Holy Grail" of the electronic communication industry. This model shows a dynamic, wholly interactive communication. The sender has now become a receiver, and the receiver now has the ability to become a sender. Because of the interactivity of this model, feedback is instantaneous. When a receiver gets a message that he or she does not like from a sender, the sender hears about it immediately. What makes this model even more beautiful is that chances are the sender's friends, the receiver's friends, and anyone else who happens to be in that neck of the cyber-woods will also hear about it too. In this model, the Internet model of mass communication, feedback itself has become not only a tool in measuring the desires of the audience, but a medium within a medium. Feedback and transmission are now intermeshed; feedback is the transmission and the transmission is feedback. Feedback itself fosters new transmission, wholly disconnected from the initial response. But this model is not without fault, much as the Holy Grail was not without its curse. Feedback and audience size are difficult or impossible to measure. Transmission is impos-

sible to control or regulate, making feedback response difficult and unfocused.

Modes of Communication

It has been argued that all mass media have certain responsibilities, or modes, within society. According to many great media theorists, mass media is basically responsible for four things: surveillance, correlation, transmission and entertainment. Surveillance means that the medium is responsible for the collection and distribution of information within a society. Correlation refers to the medium's ability or inability to translate the information it is collecting and distributing into a form that everyone can understand. Transmission in this sense refers to the society's global value system; the medium must have the ability to transfer these values from one generation to the next in some form. Entertainment is... well, entertainment; the medium entertains the viewer as well as informs.

If the Internet holds the mode of surveillance, then it should reflect at least on the surface, the society in which it resides. Laying aside the fictional aspects within the Internet, it could be argued that the Internet plays a more important role in societal surveillance than television does because of the nature of the medium. Television today is a very distant object. Although we see results on the screen at home, the actual production is vastly removed from the viewer. Taking into consideration the complex paths mentioned earlier in this article, it is safe to say that the information we are receiving on television is circumspect at best. The Internet, on the other hand, offers a more direct approach. Because it is inherently interactive, the Internet is not confined to a long-distance relationship with the user. The user, indeed, must get up-close-and-personal with the Internet to get any useful information out of it at all. This close proximity limits the amount of complexity in the paths of information, and the information can very well be more accurate than can be found in any other medium. I understand that I have opened up a Pandora's box with this statement; the exact opposite can easily be argued. But as this is a newsletter article and not a thesis paper, I'll spare the reader the devil's advocate in this case.

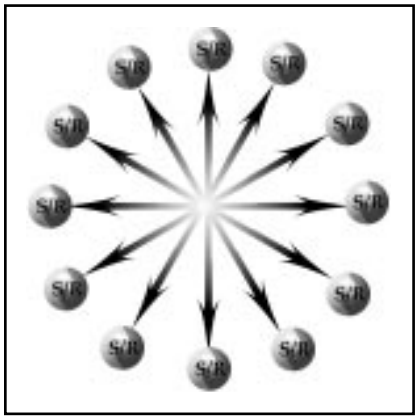

Figure 4.

The Internet has a more difficult time with correlation than it does with surveillance. Again, its greatest achievement is also its Achilles' heel. Because of the total lack of structure within the Internet, the user is left to his or her own devices to come up with an interpretation of the information he or she may be gathering. Many people have tried to correlate the data on the Internet into something easily understood by all, but the lack of structure prevents an easy method to do so. Television does a wonderful job of correlation because it is so organized. Whether you are seeing the truth or seeing something that someone else wants you to see is an irrelevant matter; the simple fact remains that just about everyone that watches television understands on a basic level what they are watching. Because there are so many "broadcasters" on the Internet, the same message can be correlated a thousand different ways, which far outweighs television's meager 10 or 12 different interpretations. With mainstream corporations and even broadcast networks hopping on the Internet, however, a saner, safer, more "televised" network is in the foreseeable future.

Unfortunately, the Internet is far too young a form of communication to accurately gauge whether it is good at transmitting social values from one generation to the next. Indeed, the generation that started the evolution of the Internet is still well entrenched in its rapidly growing infrastructure. It will be a while before we see whether the Internet, like television, has the ability to keep the social culture going through the generations. The massive transience of the Internet mentioned earlier may be the single deciding factor in the Internet's ability to transmit.

The one mode that the Internet seems to have a firm grasp on is the ability to entertain. In fact, when the World Wide Web was first introduced, many critics said that it was a great way for computer nerds to show other computer nerds their vacation photos. Of course, these same critics are now bonafide Webheads themselves, after seeing the entertainment potential of the World Wide Web blossom almost overnight into an entertainment/advertising juggernaut. The Internet introduces a new spin on mass media entertainment by giving the user total interactivity. Unlike television or radio, where you simply turn it on, tune it in, and absorb, the Internet encourages the user to (for the most part) get involved with the medium. Indeed, the Internet almost forces involvement down the user's throat..

Conclusion

The burning question at the end of this long article still remains: Is the Internet a new form of mass electronic communication? The answer, of course, is typical of the forthright obscurity that is the medium: What do you think? Although the Internet seems to pass muster on many of the definitions of a mass medium, it also seems to fall short on many of them, and seems to fall somewhere in between on the rest.

So perhaps the Internet is not a new form of mass communication. Perhaps it is after all just a passing fad, and eventually people will go back to writing letters by hand and watching television during prime time instead of visiting the PrimeTime Website. Or perhaps our definitions are no longer valid, and the Internet is an instrument in redefining not only what a mass medium is, but how humanity communicates with itself.

What do you think?

Andy Brooks does just about everything he can to keep his head above water and can be reached at andy_brooks@bmug.org for comment. For some unknown reason, he encourages the latter...

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Making Money on the Internet

by Dan Meriwether

How much money will our company make on the Internet?

This is a question I often hear from businesses.

The answer, the majority of the time is, "in the best case scenario; you'll break even."

When their color returns, I usually ask them this,

"How much money does a bank make off an ATM machine?"

Answer: The bank pays out thousands in installation, insurance, daily maintenance, rental, network linkage, upgrades, theft-prevention, etc. for each ATM. The bank does not make money from its ATMs, it pays money to provide them.

Next question: Would you bank at a place that did not have ATMs?

My answer: No. ATMs are a valued, often essential, service that we have come to expect. For example, I bank at a credit union whose nearest office is 300 miles away. I haven't seen a teller in over two years.

I'm not suggesting that your next modem should come with a cash dispenser. I am saying that the services provided by the Web are fast becoming essential and valued services that will help the customer define who they will look to for their needs. Much the same way as the explosive growth of ATMs in the 80s, I expect Web sites to continue to bloom in the near, medium, and far future.

Let's look at three areas where the Web will become a necessary center for commerce:

1. Technical and sales support.

Intelligent Web-mail processing programs, aka CGI's, can dissect questions for key words and phrases, assigning probability scores and grouping questions into defined categories. The batched results can be forwarded to the support or sales people best able to answer them or even directly responded to by the CGI. At the very least, the CGI can send a comforting acknowledgment to the querying user that the message was received and will be processed in a timely manner. All of these functions, not to mention the saving on tangible and intangible costs of keeping 800-number callers on hold for an hour, dramatically help ease the cost of providing support for the products or services sold. Providing these services, such as support, is not an area of income; the Web can help reduce, but not eliminate the cost.

The Web can help reduce, but not eliminate… cost.

2. Nexus for product information and technical specifications.

How much information can be given in a 30 second commercial? We've all heard contest rules or car dealership specifications mumbled incredibly quickly at the end or beginning of a radio commercial. The information given there is an extreme *précis*, just enough to satisfy the legal department. Now consider the ads for prescription drugs in magazines. What's that, around three pages of ultra-small type? The point here is that there are limits to the quantities of information capable of being transmitted over traditional media. On the Web, users can go as in-depth as they wish, without imposing this vast bulk of information on another, not-as-interested, user. It is an ideal place to present complete information about a product or service that cannot be summarized into a 30 second spot, and at a considerable savings.

3. Product purchasing, update, and upgrade distribution.

This is what most think of when asked about commerce on the Web. It has become so ridiculously expensive to distribute software through the traditional distribution channels, that for the international corporation and independent developer alike, the Web can be defined as a place to save a great deal of money. Software upgrades and updates cost a company tens of thousands of dollars to distribute through a traditional mechanism such as floppy disks and postal dis-

tribution. The one-time cost of setting up an easy to use Internet file transfer system that can serve thousands of users a day, is a small fraction of that of the mailings. This promotes more timely updates and incremental upgrades. The newest, coolest stuff gets out as it is developed, rather than being held up for a major overhaul that would justify the cost of the mailing.

"This is all fine and good for software, or even hardware companies, but what about my business?" You may ask. This is just one model of how the Web can save money. I have built subscription-based trade information centers, secure two-way database access points, internationally distributed scheduling systems, ordering systems that can assist the buyer in obtaining all the requisite parts of a multi-part purchase and many others. There are other examples and uses that stretch only as far as the imagination.

What about the Web advertising problem?

Ad-tiles, small graphic panels typically at the top of a Web page, enticing the surfer to visit a site, are reputed to have a click-through, successful enticements, of just 2%. Of those that click-through, maybe 2% go deeper into a site once they discover it is an advertising venue.

The best method for acquiring a large number of people on your site, and I'll really let the cat out of the bag here, is to have excellent content.

Advertisers are used to TV and Magazine figures. They want 150,000 people to hit the site per day, because that's how many the rating services tell them saw the 30 second spot last night. What they're not grasping is that viewers of their Web site are there because they want to be there.

This is because ad-tiles are, for the most part, a bad idea. They are obtrusive and ineffective and most are misleading. They are rapidly coming into disfavor with Web advertisers. When radio first came out, there was no model to use to determine the best method of advertising. Eventually, per-show sponsorship became the preferred method. When TV came out, the initial move was to apply the same per-show sponsorship to the television shows. This proved not to be the optimal solution. Another inappropriate advertisement method is the use of Meta-Ads, where, prior to being allowed to go to where user intended, the Web surfer is forced to an intermediary advertisement page. Web surfers have not been anesthetized to this type of annoyance and may react in unpleasant ways.

The best method for acquiring a large number of people on your site, and I'll really let the cat out of the bag here, is to have excellent content. This requires knowing who you are trying to reach (audience), using in-depth log analysis, and having quality people working with adequate resources.

Who's there:

So far, the Web audience is like none that advertisers have experienced before. You must know a lot more than how to read to own and use a computer, quite a bit more than that to be online. Web surfers are, if nothing else, more technically savvy than a TV viewer. They are on the Web to gain information. Never patronize, talk down to them or feed them unqualified assertions. Most importantly, to the best of your ability, understand what they want and give them the information they request.

Don't wait for the Nielsons:

Every commercial Web site has available to it a detailed log of its users, the likes of which TV advertisers would pay for in flesh. Yet hardly any sites make full use of it. Very specific, important information can be gathered from your logs, such as: what the users are interested in, what they are reading, what they are ignoring, where they came from, and how long they're there. Using this information to rewrite and revise a site is an invaluable tool. Most techies concentrate so much on gathering specific email addresses or on using only data and analysis tools that are absolutely factually substantiated, rather than on the potentially more valuable inferred information, that they miss the big demographic picture.

Web mastery:

All too often the budget for a Web site is a fraction of that for janitorial services. The Web is a remarkable medium capable of producing quality—and response—in nearly direct proportion to what is put into it. There are many out there who call themselves Webmasters

based on a little knowledge of the basics; much like someone who wrote an article for the high school newspaper calling themselves a journalist. The difference, though, is that the market is familiar with what it means to be a journalist. Web mastery is just that, a skill to be mastered. The qualifications and prerequisites to be a Webmaster include acute design sense, programming ability, managerial and interpersonal competence, and in-depth understanding of most areas technical. When a company does get their hands on a Webmaster, again, all too often, due to fear, past negative experiences and lack of understanding, the Webmaster's ability is stifled by a nearly unachievable budget.

The real problems, from a Web-centric perspective:

Problem 1. Unrealistic expectations.

Advertisers are used to TV and Magazine figures. They want 150,000 people to hit the site per day, because that's how many the rating services tell them saw the 30 second spot last night. What they're not grasping is that viewers of their Web site are there because they want to be there. They are looking for something at the site involving the product or service. They are not passive viewers suffering through another audio-visual assault, but inquisitive potential buyers or those who have already purchased and are looking for more information. Each Web site hit should count as at least 1000 TV commercial viewers in terms of potential.

Problem 2. Most commercial Web sites stink.

Just because the junior vice president of water cooler refilling is capable of building a Web site doesn't mean they should. Just as designers are brought in to create a TV spot, or creative teams to produce a radio spot, so goes the Web. It is as much the place for stylish and alluring imagery as for hard information. One problem, aside from chronic cobweb syndrome, is that they lack adequate quantity and quality content. Television and radio ad firms have not made the transition to Web design as successfully as they would have you believe. They often go for life-style look and feel imagery. They seem to want to reproduce a TV commercial on the Web, cinematographics and all, regardless of the capabilities or interests of their audience. This is the wrong approach. Yes, it is true that the average attention span of a Web surfer is considerably less than a minute. It is false, though, to have this figure drive the content. The main reason for the impatience is that the surfer is looking for something. If they do not find what they want on the page they're at, they choose the next most likely link until they do; or they give up on your site. This is not what you want.

If you provide a thorough but layered information structure: quantity, and ensure that the information provided is well-written/designed, appropriate and meaningful: quality, the site will be visited. Your customers already expect your business to maintain a Web site. Their expectations will only grow with time. Though a Web site may never net you a dime, it may help you save a few; and like ATMs are to banks, it will become mandatory to maintain one to stay competitive. It is wise to assume your competitors read this article too.

Dan Meriwether, DRM@Dis.org, is the author of "The Macintosh Web Browser Kit", John Wiley & Sons, NY, and a consultant whose clients include Canon, Wells Fargo Bank, Tsutomu Shimomura, and other national and international companies and organizations. Dan is also BMUG's Webmaster.

Without Content, You Don't Have a Site

An Opinion Formed while Researching and Writing Questions for an Internet Game

by Carolyn Hendricks

On September 17, 1996, I completed one of the most interesting tasks I have ever undertaken—writing questions for an Internet game called WWW Trivia Traveler. I don't know whether it will still be going on when you read this, but the URL is (http://lge.expo.or.kr/event/wwtrivia/index.html). Prizes are awarded.

The project was for Lucky Gold Star, the Korean electronics company. It was handled locally by One-O, Inc. in Mountain View.

An old acquaintance working for One-O wanted a friend of mine to write 900 multiple-choice questions for $500. He didn't have enough time and that wasn't enough money, so he passed the lead on to me. Originally, we thought the answers could come from reference books, but then it was decided (a wise decision, I think) that each question must have a URL where the player could go if wrong on the first try. So finally, we agreed on a payment of $2 per question, with 5 possible answers (one of which was usually "None of the above"), and the URL where the correct answer could be found.

Lucky Gold Star wanted the tour of the world to begin in Korea and end in China. I received a list of all the countries where they did business, and selected 18 others, so that the player would make a tour of the world. The final countries were Korea, Japan, the Philippines, Vietnam, Australia, the United States, Mexico, Chile, Brazil, the United Kingdom, France, Germany, Italy, Spain, Sweden, Russia, Egypt, South Africa, India, and China.

The original plan was 27 questions for each country: nine easy, nine intermediate, and nine difficult. My choice of countries was submitted to the client for approval, and one comment that came back was that there really should be something in the Middle East like Saudi Arabia or Iraq.

Groan. I couldn't imagine coming up with 27 questions on Saudi Arabia—at least not ones that anybody would be able to answer. And I didn't want to give up Egypt. So in my reply, I emphasized that Egypt was indeed in the Middle East and that it is more fun to play a question/answer game when the player knows something about the subject.

My original 540 questions relied heavily on the *1995 CIA World Factbook* (http://www.odci.gov/cia/publications/95fact/index.html). I saved the text and maps for the 20 countries, and printed it out. This way I could carry it around and think of questions without being planted in front of my computer. I could also note which facts had been used on the printout. At the very least, I got a money question and a flag question from this source.

Another good source, although unfortunately it didn't cover all my countries, was *Lonely Planet*, a publisher of travel guide books (http://www.lonelyplanet.com.au/contents.htm). This site was well above many travel sources on the Web, in depth of information. It seemed they were almost giving away the store on their site, but when I checked out their printed books, I found they still had much more to offer.

When there was a subject I really wanted to do a question on, I would search with *Yahoo* (http://www.yahoo.com/search.html) or *Infoseek* (http://www.infoseek.com/) and so on. But to get the questions done in a timely manner, it was quicker to find an information source and then think of the questions.

My computer is the original Mac LC (68020) with 10 megs of RAM. My modem is 14.4, and I have an ordinary telephone line. I started the project with Netscape Navigator 1.1 (Navigator) and later switched to 2.0. Once they had the game up for testing, I could see it was not designed for 1.1.

Usually I had Navigator and WriteNow 3.0 (which only uses 490K) open at the same time. I also added QuicKeys to facilitate saving. I saved a lot of text for later use—not only to print it out, but because it was faster to scroll through in WriteNow. Also, this was a safeguard in case the site went down when I was trying to meet a deadline. Using QuicKeys, my procedure was:

1. In Navigator, copy URL to clipboard.
2. In Navigator, Save As.
3. In WriteNow, open page just saved.
4. Paste URL at top of page.

Except for a couple of phone calls, all of my contacts with the client were by

email. As I finished each country, I sent it off by email.

Using WriteNow, I made templates for everything possible. Of course, the 27 questions—each with its five choices and URL line—were on a template which I could just open, save under a country name, and fill in the blanks. I had worksheet templates printed out where I wrote down the subjects of items completed. Since I didn't necessarily create the questions in numerical order, I used the Find command of WriteNow to get to the item I wanted to do next. I used a two-column horizontal template with small type to print out the CIA Factbook and the finished questions for proofreading. And finally I had an Olympic Results template in a monospaced font, so the columns would line up.

When I finished the 540 questions at the end of June, the game was in its beta test at a private URL. As far as I knew, my part of the project was finished.

Then, at the end of July, when I was asked to do 1000 more questions at $2 each, I was pleased. But what I (nor anyone) didn't realize was that the work I agreed to do for $2 a question was no longer the same job. The work was like mining for gold. The first phase had been like picking up nuggets lying around on the ground. I had used the obvious subject matter first. For many of the countries, I now had to really dig to come up with new questions.

The 1000 questions would be done in two phases: 25 each for 20 countries in three weeks, then 25 more for the same 20 countries in three weeks. It was still the same 20 countries we started with.

Also, during July, people had been playing the game and commenting on it. I was forwarded some complaints about URLs that didn't work anymore, and asked to fix them.

Whoa! I hadn't agreed to perpetual upkeep for the original $2 a question. We then agreed that I would be paid $2 to rewrite a question or find a new URL for it. And one of the URLs was working again when I checked it. URLs going down was a problem not anticipated when planning the game. Also, there was the problem of players who could not access the original URL, so they then did their own online research and found different correct answers from some source like the Encyclopedia Britannica Online.

One player commented that the game was too hard. This made me reconsider how I was classifying questions. I imagine that when a test like a scholastic aptitude test is constructed, a committee carefully considers each question, and tries it on trial testees to determine whether it is easy or difficult, fair or unfair. For $2 a question I was just writing them as fast as I could.

And especially, in these second and third rounds of questions, how could I possibly make easy questions about people from a country like Sweden when I had already used up all the people famous outside Sweden in the first round? One thing I hit on is that there are often processes or plants or diseases named after a person, so you may know the word even if you didn't know it stood for somebody. The following question is intended to be easy. What do you think?

Which of these Swedish inventors invented a temperature scale?

a. Anders Celsius

b. Nils Gustaf Dalen

c. John Ericsson

d. Gideon Sundback

e. None of the above

URL: http://www.tiac.net/users/parallax/eric/bioform.htm

(The URL for the above question is from the *Biographical Dictionary*—a very useful site. It lets you search not only by name, but by using keywords such as"Swedish inventors")

It took more thought to write easy questions than difficult ones. For the difficult ones, my guideline became that I'd never heard of it before, but there's a URL with the information.

After the summer Olympics ended, I became aware of the Encyclopedia Britannica Olympics site (http://sports.eb.com/). This handsome site is free to use, and is good publicity for their paid access to the entire encyclopedia. For each country, I tried to get an easy, an intermediate, and a difficult question out of it. In cases where the country didn't do very well in the 1996 Olympics, I was able to ask what sport they did the best in throughout all the summer Olympics. I gave the specific URL that would take the player closest to the actual search necessary.

[The Library of Congress] site developed problems, and I was reduced to writing questions based on the tables of contents which could be accessed even though the chapters couldn't.

Another reliable free site is maintained by Grolier. It is the history of World War II, from the Encyclopedia Americana (http://www.grolier.com/wwii/wwii_mainpage.html). For every country possible, I wanted to load up on questions from this site. However, some of the entries were very long, and I had to rein myself in and stick to information at the top of the page or in the shorter entries.

The *Internet Movie Database* (http://us.imdb.com/search.html) was a big help. Here I was able to supply URLs that take the player right to the information without a further search. Vietnam is one of the countries with a dearth of information on the Web. Using the Movie Database, I could search for movies made in Vietnam (not many), movies situated in Vietnam (often filmed in the Philippines), and so on.

So where did I get information for the more difficult countries?

One source was the *Army Area Handbooks*. I had thought these books were on how to survive when lost in the

jungle, but rather, they contain a great deal of historical information combined with a contemporary overview. They are at (gopher://gopher.umsl.edu:70/11/library/govdocs/armyahbs/) and are available for a limited number of countries.

The Library of Congress (http://lcweb2.loc.gov/frd/cs/cshome.html#toc) has Area Handbooks and many additional Country Studies. While I was working on the project, this site developed problems, and I was reduced to writing questions based on the tables of contents which could be accessed even though the chapters couldn't. Let's hope they have it working by the time this is published.

The *Internet Law Library* of the US House of Representatives (http://law.house.gov/52.htm) has treaties and UN documents. These were helpful for questions about when a treaty was signed or who witnessed the signing.

In desperation, I sometimes even based questions on the US State Department's *Consular Warnings to Travelers* (http://travel.state.gov/travel_warnings.html).

A couple of countries that presented special problems were Egypt and Chile. There are many, many sites that deal with Egypt—Ancient Egypt. It didn't seem right to load the Egypt section with questions about pyramids, pharaohs, and mummies. After mining the aforementioned US Government sources for more recent information on Egypt, I did come across an Arab-interest English language site (http://www.hiof.no/almashriq/general/000/070/079/al-jadid/) that had short essays on Egyptian movie stars and musicians (deceased, but not so long ago). These performers are not well known outside the Arab world, but I think I was able to craft questions that gave one a chance to guess right, and the subject matter added some variety.

In the case of Chile, I found there was more to the country than I had realized when I selected it. Easter Island is Chilean territory, and even though the population of the island is very small, this allowed a whole new range of questions about art, history, culture, and language.

Then I discovered that Charles Darwin had said quite a bit about his travels in Chile in *The Voyage Of The Beagle* (http://www.literature.org/Works/Charles-Darwin/voyage/). While the chapters are long, it is a journal, so I could include dates in the questions for those who have to look up the answers. I checked the book out of the library to plan questions. It was easier than scrolling though entire chapters on the monitor.

My original contact at One-O left for another job at the end of phase two, so for the final three weeks I was working via phone and email with another employee there. About a week before the deadline, I got a request that instead of sending the questions in the format I'd been using (shown above in the"Swedish inventors" example—but with an asterisk after the correct answer), I rearrange the parts and insert code to make it quicker for the person doing the HTML.

I'm sure my rearranging the parts and inserting code would have made the job quicker and easier for the person after me, and I didn't doubt my ability to do it if the deadline could have been extended. However, I wasn't offered any more money for the extra work. If they had wanted a different format at the start of the final phase, I would have set my templates up differently. Still, it would have merited additional pay, because in addition to proofreading for correct English, I would have been responsible for correct code. So, I finished the project as previously agreed and invoiced it at the $2 per question rate.

In the course of working on this project, I looked at hundreds of sites. Without content, a site isn't worth very much. Content may be photographs, art work or text, but graphic enhancements alone don't hold the attention very long.

While WWW Trivia Traveler has attractive graphics, I feel I was the one who really created the content. If somebody (and I'm not sure whose idea it was) thought that in addition to research and writing, I could do coding without additional pay, that person didn't realize the value that should be attached to content.

In conclusion, I'm glad I worked on WWW Trivia Traveler. First of all, the money filled a need. Then, it was fun and interesting to expand my knowledge of the world by reading and constructing questions. I hope some of that fun got through to people who played the game. Finally, I really improved my ability to get information from the Web. At first, when a site didn't work, I went on to another, but then I started sending email to web masters and sometimes got results.

The game is scheduled to be offered 10 times, for two week periods. Unless it is extended, it will be over on December 15, 1996. The five top scorers each two weeks win wrist watches, and the next ten win T-shirts.

I wrote my questions on the assumption that most players would be Americans, Australians, or other native English speakers. But in the fourth round, 95 of the 119 players were in Korea, and some of those elsewhere had Korean names. I'm impressed with their ability to persist with my English questions, and perhaps international participation will increase by the time the game ends.

Other Good Sites

(http://www.city.net/countries/) *City Net* is a site with links to many countries. During July, they radically changed their format for the worse. However, they are a starting point with links to countries.

(http://ipl.sils.umich.edu/index.text.html) *Internet Public Library*, at the University of Michigan Library School, is basic for finding information on all sorts of topics.

(http://sgwww.epfl.ch/BERGER/index.html) *World Art Treasures* an impressive art history site. I especially liked the sections on Italian Renaissance Gardens and on the painting of Sandro Botticelli.

(http://volcano.und.nodak.edu/vw.html) *Volcano World Home Page*.. In the first round of questions, this helped me come up with a volcano question for every country that had one.

Going Online: The Basic Tools for Exploring Cyberspace

by Karen Armstead and Jim Barclay

(Note: Please look up unfamiliar terms in the glossary at the back of this volume.)

You might be reading this because you just got your first computer and you want to find out what you need to know to explore the amazing kaleidoscope of words, images, and sound on the Internet and the World Wide Web. Or you may already subscribe to a commercial online service—say, America Online, but you would like to gain an overview of the specialized tools available for virtual voyaging in the '90's. If you want a more basic introduction to cyberspace than you found in G. D. Warner's piece, "Who's Afraid of the Big, Bad Net?," in the Fall 1996 BMUG Newsletter—this article is for you.

Besides a computer, a modem, and a telephone line, you need a *provider*, *email software*, and a *browser* to get full access to the Internet and the World Wide Web.

If you subscribe to a commercial online service, you may get all three tools bundled together, so that you don't have to think about their separate functions. Then again, the email software and browser you use with your provider may each have been designed by someone else. In any case, it's helpful to understand these basic units of telecommunication, and how they work together:

You've probably heard a provider described as a "gateway" to cyberspace. A provider is a particular network of roadways through the Internet and World Wide Web; it is also an electronic post office, where you send and receive email.

A provider can be your employer, your university, or an online service you subscribe to—to name a few possibilities. In any email address, the segment after the "@" gives the provider's name, followed by a period, and then the type of email account. "Frankincen@aol.com," for instance, is an America Online address. It has the suffix "com," because America Online is a commercial provider. "Evilpuss@ucb.edu" is the address for a school email account, in this case, UC Berkeley.

Email software allows you to retrieve your email from the provider. Think of email software as a hand reaching into the mailbox to get your daily mail. One popular variety of email software is Eudora, which comes in both free, and commercial varieties. America Online is an example of a provider that supplies its own email software.

A browser lets you explore the World Wide Web. If the provider consists of roadways through the Web, then the browser is the land rover that takes you over them. For detailed information about browsers, see Kevin M. Savetz's article, "The Browser Wars," in the Fall 1996 BMUG Newsletter.

So, you're ready to get going. You will need to get a provider in order to have an email account. You will also want to consider a few questions:

- What's your interest in cyberspace? Are you especially intrigued by the Web, or do you wish to explore everything at this point?
- How much time and money are you willing to spend to get set up?

Most commercial providers charge a one-time setup fee. If you subscribe to a provider only, you will probably be charged a flat monthly fee for unlimited time online.

A provider is a particular network of roadways through the Internet and World Wide Web; it is also an electronic post office, where you send and receive email.

All-in-one providers, like America Online, tend to charge a base rate, which includes a certain number of online hours per month. All-in-ones offer the advantage, for the novice, of being extremely simple to set up.

Karen Armstead has freelanced for the Montclarion, *the* West County Times, *and other publications. She joined BMUG in August 1995, and can be reached on the Planet.*

Jim Barclay is an artist, dreamer, and fearless Web explorer. HIs base camp is located in Berkeley. He can be reached on the Planet.

Providing Internet Services via the Mac OS

by Zach Teitler

"What? You don't have a Web page?" The faces jeer at you, laughing and pointing.

You wake up sweating and shivering. How are you going to put up a Web page when your boss is hounding after you to get the office mail server running? And you hate UNIX!

If this sounds familiar, there's good news: Carl Steadman and Jason Snell have teamed up to write *Providing Internet Services via the Mac OS*, a book which explains in clear terms how to use Macintosh software to provide most of the available Internet services. The book comes with a CD-ROM of server-related shareware and demos. Also, you can point your browser to <http://www.pism.com> to view the (nearly) full text of the book.

Can that old dust-magnet IIci be the Web server? Is it time to dump the trusty 2400? The book begins with a discussion of hardware (mostly anything goes) and Internet connections (in most cases you'll want a full-time line—ISDN, T1, etc.). Although the authors assume familiarity with the Internet, there's a brief explanation of what various services are—FTP, mailing lists, etc.

After that, each chapter describes one service: email; mailing lists and autoreplies; FTP; gopher; the Web; domain name services; and miscellaneous (finger, whois, talk, chat, etc.). The last chapter covers administration and maintenance tools. Each chapter has a pretty good description of how the service works. Not too technical, but still very interesting and useful. For example, the Web chapter explains HTTP, the hypertext transfer protocol. Following this is a detailed description of how to use Macintosh software to serve that protocol. I found the descriptions very clear and easy to follow. I had a mail server up in no time flat; same with the Web. I got a few mailing list servers to run, though I didn't test them. There were, however, a few caveats which are noted below.

I found the descriptions very clear and easy to follow. I had a mail server up in no time flat; same with the Web.

Most chapters are about serving, not creating, content. One exception is the Web chapter, which has an HTML primer and a CGI run-through. The HTML primer is 30 pages with HTML source on the left and its output on the right. Obviously a book about HTML would cover much more, but this primer is a fine start and seemed clear. It did not address stylistic issues. The CGI section, however, wasn't as good. The authors give examples in MacPerl (noting that other languages may be used) of a simple redirect, printing out global variables, delivering content based on browser type, and processing form data. There's an explanation of how CGI interacts with the Web and what you can use it for, but I wouldn't recommend learning CGI from this book unless you already know how to program to some degree. A few other chapters have tips and advice, but in general the authors assume that you know what you want to do, if not how to do it.

The glossary and index seemed fine. The appendices include information about URLs, HTML character entities, and the CD-ROM's software. There are a few interesting tables scattered throughout the book, such as country codes in domain names. For example, the "fi" in penet.fi is for Finland. And did you know that while a 14.4 modem can transfer .018 megs/sec, Ethernet can transfer 1.25 megs/sec and plain old SCSI can transfer 5 megs/sec?

As I mentioned above, the (nearly) full text of the book is available online. The site uses frames and has a few bugs and annoying things. More importantly, there's no site contact listed, the organization is not very good (books and sites are very different), and many things are mentioned without links. For example, I would appreciate a front page offering links to browse the book, to a page of software links for up-to-date versions of the CD-ROM's software, to the authors' home pages, etc. The site is a valuable and interesting resource, but it could be better.

The CD-ROM that comes with this book has major problems. Much of the included software is out-of-date. Case in point: Peter N. Lewis's FTPd 3.0 is included instead of the current NetPresenz 4.0.1 (available from Planet BMUG), even though on page 130 the authors mention NetPresenz! I suspect this casual mention was a last-second

[D]id you know that while a 14.4 modem can transfer .018 megs/sec, Ethernet can transfer 1.25 megs/sec and plain old SCSI can transfer 5 megs/sec?

addition after the CD-ROMs had been burned. Furthermore, the Apple Internet Mail Server (AIMS) is not included at all, nor do the authors say where to get it, even though it is necessary for two whole chapters of the book. If it was not included because of a licensing issue, I'd appreciate a note somewhere saying that AIMS was available at <http://cybertech.apple.com/AIMS.html>.

The CD-ROM is not entirely negative, though: it's a convenient collection of software which might take you a long time to track down on your own and it includes some nifty demos, such as Timbuktu Pro and WebSTAR. And given the quick pace of software development, the out-of-date software must be excused, even if it does hamstring the purpose of the CD-ROM.

In conclusion, I *don't* recommend giving this book to your granny who wants to "find out about that Interweb thing." Similarly, if you just got on the Net recently and aren't sure what it's all about or how it works, you'll want to wait before picking this one up. For experienced surfers, however, this book is a very helpful resource on providing content on the Internet. How much did I like the book? I plan to put up an email server and a Web server by the book's instructions. See you on the Web!.

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Site Mapping, Searching, and Indexing

by Raines Cohen

'Site Mapping, Searching, and Indexing' is an excerpt from a book-in-progress by Raines Cohen; © 1997 All rights reserved. Reproduced here by permission of the author. For more info about this book, see end of this excerpt.

This chapter introduces you to Mac Web server tools for:

- Web crawling to index other Web sites
- Indexing your own Web site
- Mapping out the content of your site
- Searching your site without indexing
- Searching your site with databases

Every Web site that you create needs to include a set of navigational aids: tools to help users find information on your site. You can think of them as road maps for your section of the Information Superhighway. Without them, users will get lost, make a wrong turn, and vow never to return to your neighborhood.

Most sites offer only bland, plain-vanilla static links, simple pointers from page to page. But if a user is seeking a particular piece of information, finding it could involve following dozens of links, diving through tables of contents and across pages. The way you organize the data might not bear much resemblance to what's going on inside the user's head, so be sure to structure your site to effectively help your users.

You can detour around these potential roadblocks with tools that automatically map out the content of your site, creating guides and searchable indexes that can point users directly to the information they seek. Every word on every page (or just the words and pages you choose) can be transformed into a neon sign beckoning users into your site, pointing them directly to the particular pieces they care about. Your site can become a hub of information for people interested in the topics you cover.

With site mapping tools like Apple's HotSauce technology, you can make your Web site's structures visible so that users can see the big picture and dive directly into a page buried several layers deep. They'll appreciate the convenience and spend more quality time with your site.

You don't have to stop there. With inter-site indexing tools such as Maxum's Phantom, your server can crawl the Web and index the contents of other sites as well. Your site can become known as "the" place to go for information and links related to the topics you cover (think of it as a mini-Yahoo). You don't have to manually revisit sites and recreate links - the Web crawler goes out to automatically detect and re-index changed pages around the clock. And you don't have to invest the extra effort to recreate other people's work; just point to their sites and index them.

All of these tools and techniques help you keep your site dynamic and ever-changing, without your lifting a finger. But there are a few things you should know about them in order to use them well.

Indexing and Searching Issues

When you place static links between pages on your site, you have a lot of guidance available as to what sort of links to make, how to make them, and what they should look like. All you have to do is look at the millions of pages out there for ample evidence of what works (and what doesn't). You have a wealth of experience available at your fingertips to draw on in designing your own implementation of these second-generation dynamic Web tools.

When you set up a search engine on your site, the range of examples you can draw on is somewhat narrower. Nonetheless, one of the first things you should do is to go out on the Net and visit sites with search engines to see what works and what doesn't. Along the way, you'll

You can think of [web sites] as road maps for your section of the Information Superhighway. Without them, users will get lost, make a wrong turn, and vow never to return to your neighborhood.

probably learn a bit about the issues relevant to these sorts of tools. Pay close attention to the pitfalls of poorly con-Figured search engines and indexes.

Some search engines cover too narrow a set of information for you to find what you seek, and some cover so many pages that the list of "hits" resulting from most searches reads more like a novel, where the sites you seek are deeply buried in the resulting list—or even worse, mislabeled so that you don't even know to click there.

You'll finally feel frustrated when you are misdirected to a potpourri of pages seemingly irrelevant to your search but featured by a so-called "search engine" because they include multiple sections with pieces in each matching portions of your query.

Notice the indexes that refer to outdated information no longer on pages, or, worse to pages that have moved with no forwarding address. It's really frustrating to look for a new page where it oughtta be (see Figure 1) and it ain't there!

Take your time to ponder how in the world these sites can thrive and proliferate when they seem to be in the business of sending people away.

And you'll start seething when you realize that you have to rethink your language to actually use effectively the "natural language" search engines that roam the Web.

Once you've absorbed all these lessons in the Web World (I know better than to call it the "real" world), you can start to think about how to address them with search tools on your own site.

Selecting the Proper Scope

One of the more-difficult intellectual tasks you face is to determine how far your search tools should range. Should you stick with a free tool that indexes just your site, or a particular portion of it? Should you venture out and index other sites? If so, which ones? What topics should you try to address in the sites you select, and in what depth?

To best answer these issues and questions, you need to take a brief look at tried and true techniques of information science. Any given query should have the dual goals of providing both relevance and precision. While this may sound like a statement of the obvious, let's examine

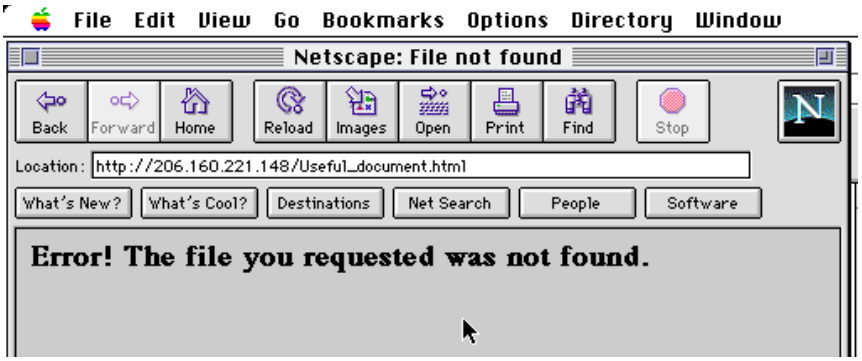

Figure 1: Moved, no forwarding address

what's actually involved in simultaneously satisfying both of these goals.

The relevance of a given piece of information can best be judged by the user seeking the information: Does it answer the question?

To include as many relevant documents as possible in the results for a given search, you want to cast your net as widely as possible, hitting thousands of sites, every one that might conceivably have something of interest. You want to delve down into the contents of documents, finding every one with words matching those in your query.

On the other hand, to make the most precise search, you want to throw away as many matches as you can, ruthlessly winnowing down the selection so that only a few choices are presented.

You can see how simultaneously seeking to achieve these two goals with every search can result in madness, if not compromises that reach neither goal.

There are a number of techniques that search engines employ to find a happy medium. The most visible of these is what's known as relevance ranking, listing first the pages bearing the most resemblance to the user's query. The engines ignore common "stop words" (sometimes called "noise words") like "the," "and," "web," and the like, so only the important words of the query are used. They move up in the list documents with both the fewest unrelated words and the most related ones. They factor in proximity (how close search words are to one another in documents) and all kinds of fancy logical and mathematical techniques to match the meaning of what's being sought with what's out there already.

For your own site, you can make your search engine seem smarter by educating the people who use it. Provide clear instructions as to what users can search for and how they can most effectively phrase their queries. Give the user a choice of subsets of the data to search (perhaps with a pop-up menu). Offer premade links that trigger optimized forms of the most frequently-asked queries. Seed the search engine with a well-thought-out list of "noise words" for it to screen out, based on your topic's vocabulary (and check whether your search engine screens out HTML tags and considers factors like proximity).

Above all else, give your users examples of the difference between well-constructed and poorly-thought-out searches. Computers may not be able to understand what's in all these documents we feed them, but the computer's rapid pattern-matching combined with a human's grasp of the underlying concepts at work can form a lasting partnership that delivers more than the sum of the parts.

On your own site, there's a lot you can do to enhance searches for your users. You can:

- Make sure that every page is named appropriately in the header.
- Include a robots.txt file defining what to search on your site
- Include "keywords" hidden in comment fields on every page.
- Use "Meta" tags to indicate the content of every page.
- Don't repeat keywords unnecessarily or add words like "sex" in a vain attempt to make your page appear higher in search lists and in more searches. Commercial search-engine sites have caught on to these tactics and automatically ignore words repeated too many times; irrelevant key-

The ROBOTS.TXT Exclusion Standard

You can protect your site from unwanted robots quite easily, simply by placing a file named "robots.txt" at the top level of your site with a few lines of information.

The authoritative reference on this, one recommended by Maxum's documentation for Phantom, is at:

http://info.webcrawler.com/mak/projects/robots/norobots.html

Basically, you just need to specify what parts of your site you don't want searched.

The following is a sample robots.txt file:

```
# robots.txt for http://www.yoursite.com/
User-agent: *
Disallow: /not/relevant/ # these files are not to be indexed
Disallow: /secret/ # neither are these
Disallow: /log # stop access to files or folders whose name
starts with "log"
```

Simply create a text file like this, with "disallow" lines for each path you want to exclude, and well-behaved robots will stay out.

If you actually create your own robot tool, be sure to test thoroughly its respect for these files and ability to detect them reliably.

At a more basic level, there are a few rules of network etiquette that robots should live by, as described in the book "Internet Agents: Spiders, Wanderers, Brokers and Bots" by Fah-Chun Cheong.

The Four Laws of Web Robotics are:

A Web Robot Must Show Identification
A Web Robot Must Obey the Exclusion Standard
A Web Robot Must Not Hog Resources
A Web Robot Must Report Errors

While if you're operating a Web crawler, additional guidelines can be found in the form of:

The Six Commandments for Robot Operators:

Thou Shalt Announce thy Robot (contact the Webmaster)
Thou Shalt Test, Test and Test thy Robot Locally
Thou Shalt Keep thy Robot Under Control
Thou Shalt Stay in Contact with the World
Thou Shalt Respect the Wishes of Webmasters
Thou Shalt Share Results with thy Neighbours

So if you use a Web crawler, or even a client-side tool that downloads the content of sites, make sure it properly follows the Robot Exclusion Protocol. This is especially important if you develop your own tools - you can be blacklisted and turned away at sites far and wide if you create a tool that blithely forges ahead and steps heavily on people's sites.

words simply make your document less likely to match queries actually looking for information it contains.

- Make sure that every page stands on its own, with links to pages around it and the top level of your site. Don't assume that someone will reach a page through your site's predetermined paths. Make it easier for your users to stick around and explore once they've dropped in on any particular page.
- Break up pages into smaller chunks to provide more points of entry. Make sure every page starts with interesting, relevant text so the excerpt shown by the search engine will be enticing.
- When you use forms to trigger database lookups, include links, optionally hidden, that display all the entries in the database. Search engines can't actually "read" your forms and won't understand what to type into forms to search, but they can blindly follow every link and index the content that they see.

If you implement all of the above-listed recommendations on your site, you'll get lots of hits from users of search engines.

Keeping Your Index Up to Date

If Web pages, once published, never changed, indexing your site would be simple. Once you indexed a site, you could cross it off your list, and simply add new ones as you discovered them.

However, the reality is that the Web is a very dynamic place, and some corners of cyberspace change quite often, while others seem to operate on more of a geologic time scale. You need to reindex the pages that change more frequently than the ones that don't. And you want to Figure out an appropriate trade-off so that your search engine doesn't spend so much time indexing that its searching performance suffers.

Within a year, I expect that standards will evolve for Web publishers to register and transmit notifications of changes on their sites, or to log information about how frequently pages change. In the meantime, however, you have to rely on manual notification and periodical resweeps with your indexer.

There is presently at least a rudimentary level of communication going on: Web servers do transmit "last-modified-date-and-time" information when they serve a page, and Web crawlers can check this information to decide whether to bother re-indexing a page. But the crawlers still have to follow all the links from a page, to see if any of the linked pages have been updated and need re-indexing. Some servers and authoring tools don't properly update the date when a file is changed, or they cache a previously-served version of the file with the old date. Some pages include dynamic elements like counters that create the illusion that the page is changing with every hit, so the Web crawlers re-index it unnecessarily. These are minor concerns, I'm sure, but every extra page you need to re-index can slow down your search engine.

Getting a License to Search

If you're going to operate a search engine, Web crawler, or any sort of tool that automatically pounds on other people's sites, it's time for a little lesson in Netiquette.

People usually publish Web sites for a particular purpose: to help other people. They typically spend money to do so, and don't receive income based on the number of pages served, but rather on the number of customers served. If a Web server spends all its time talking to indexers methodically asking for every single page on the sites it serves, it will be slower for the real people trying to use it; worse yet, it might turn users away if it becomes too busy.

In addition, people really do invest in the content of their Web sites. They hold the copyright on material they create. They have the right to choose who they give it to or not, and whether a program such as a Web crawler can effectively copy the information into someone else's site by indexing it.

In some cases, Web structures are circular, looping back on themselves, with different URLs serving up the same data. Or data changes so frequently that indexing pages would be pointless. Or personal data is on pages, designed for people on the site to see but not for other sites to index. A Webmaster wouldn't want to see webcrawlers visiting and indexing these pages.

To address these issues, Web folks have invented the Robot Exclusion Protocol (see text inset on previous page). All you really need to know about it is

that it specifies a particular file, robots.txt, that Web crawlers are supposed to look for on the top level of every server they visit. They're supposed to read the instructions contained there and obey them. The file tells them things like, "don't index this folder," or "do index these files, even though there's no explicit link to them."

Holding onto the User

When you incorporate a search engine into your site, you need to carefully consider and monitor its effect on users. After all, you're providing them with easy access to large numbers of links sending them away from your site. Will they ever come back?

Some Webmasters deal with this issue by holding the user hostage, so to speak. They go to the indexed sites within a frame, leaving the navigational elements visible in a persistent frame (see Figure 2). This makes it easy for the user to go back to your site, but it has a number of drawbacks. First of all, the frame from your site occupies valuable screen real estate, making it harder to see the destination site. Frames can confuse the Web browser's navigational tools and "recent pages" menu; clicking the "back" button no longer does what the user expects it to do. And if the user's browser isn't frames-aware, the entire effect is lost.

A better approach is to use the carrot rather than the stick. Simply make your site the best for the topic, include valuable, unique content that changes frequently, make your index the most comprehensive, and aggressively pursue cross-links with all the sites you index. You'll lose some users when they follow links away from your site, but the serious customers — the ones you really care about — will be back.

There's another useful trick at your disposal since you set up the index and presumably you know how it works. You should be able to conFigure your pages so that they always appear near the top of the hit-list resulting from any search on your server. In fact, you can set the search engine to index your pages more often, so that users craving the most recent information will tend to follow the links to pages on your site rather than looking further outwards.

So be aware that you have a lot of things to think about when setting up a Web crawler on your site. Now that you've become familiar with the issues, you're ready to take on the tools that can search your site (and others).

Webcrawling with Phantom

The preeminent Mac Web crawler is Phantom, from Maxum Development Corp., originally released as Duppies from Aktiv Software. It functions as a Web robot, indexing pages on servers you specify, and then providing info. about those pages to users searching from your site by using its own internal relational database.

Phantom is intentionally limited in scope. It confines its searches to servers that you select, rather than building its database by following every link ad infinitum until it has covered every site on the Web. This makes it ideal for serving your own topic-specific web-site content indexes, or even just for indexing your own site or sites.

You can set up any number of lists of sites to visit in Phantom (see Figure 3) and use the resulting indexes together or individually in searches. For example, you could include all your company's sites in one list, called a session, that it updates weekly; you could set for daily updates another session that includes rapidly-changing sites with event information. Each session can include its own list of words to search for, in order to pick up particular pages.

Figure 4) that it uses for searches. You can inspect this database from within Phantom, to make sure that the sites you index are still active and accessible.

Phantom can run either as a CGI that cooperates with an existing server, or as its own Web server. The former is a good choice if you have a fast Web server with CGI support and available capacity to handle the extra hits (or either a server that does special pre-processing or logging on every hit or a secure server). As its own Web server, Phantom can serve requests more

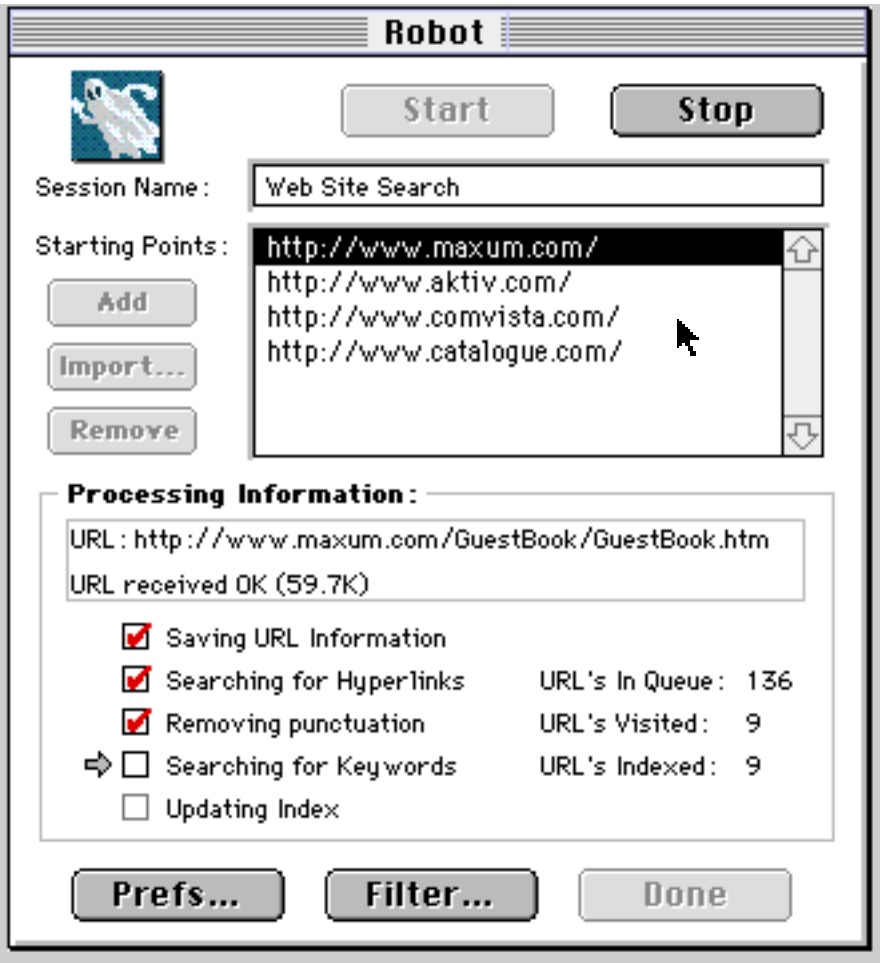

Figure 3: Phantom's configuration options

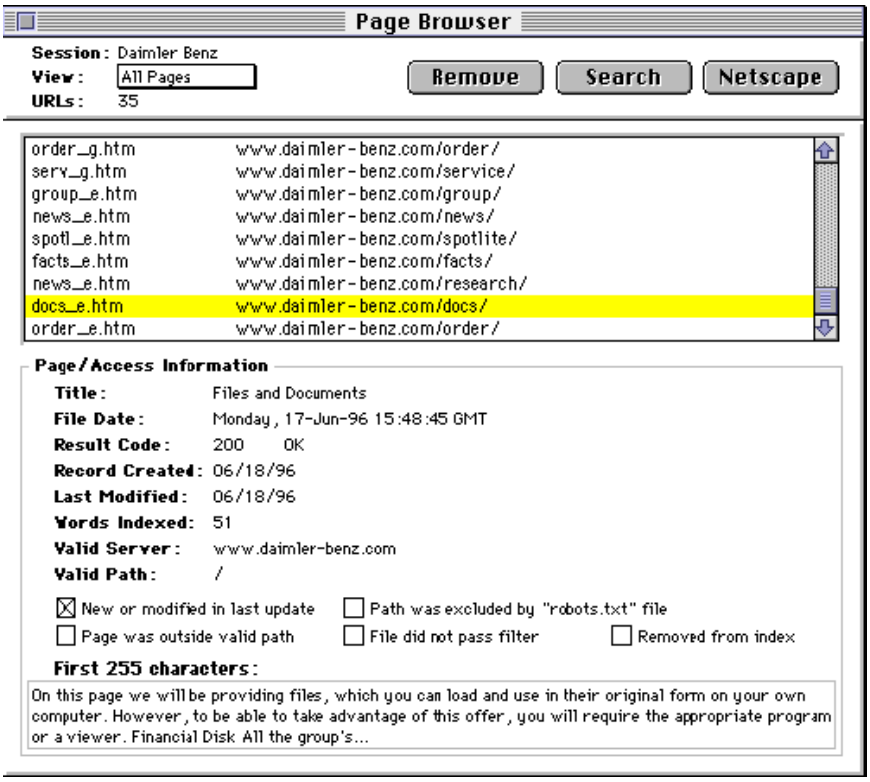

Figure 4: The Phantom database (server view)

efficiently and sometimes deliver better performance, especially if you run it on a separate machine than your primary Web server. If you choose the latter option and run it on the same machine as your primary server, you need to assign it a unique port number to avoid conflicts.

You control Phantom's Web user-interface by editing a few HTML files included with the system, and adding your own (see Figure 5). Phantom 2.0 adds a Web-based remote administration interface. You can set up individual searches customized to particular sessions, or allow users to select all or some sessions for each search. Search forms can limit the number of matches returned in the search, and users can optionally specify whether any or all of the words they specify must be present for a page to qualify as a match. Version 2.0 adds "starts with" and "updated since" searches, plus integrated support for random ad banners.

You can try Phantom for an evaluation period before you buy it, and it doesn't take much work to set up, so I recommend that you make a stab at adding site searching to see whether it helps keep users coming back to your site. Chapter 12 includes a tutorial based around Phantom, to give you some assistance in using it.

While search engines are great for helping users find specific information on or across sites, they really don't provide much assistance to somebody who doesn't know the terminology of a topic. They don't provide information about what's on a site, or a context on how pages fit together. That's where site-mapping tools can come in handy.

Site Mapping with HotSauce

Apple's HotSauce browser provides a unique way to map your site: it lets users fly through a virtual multidimensional map of your pages. It's quite easy to author for it, and lots of fun for users to explore. While it may sound like yet another trendy gimmick, there's actually a lot that HotSauce has to offer.

HotSauce (originally called "Project X" when Apple's Research Labs first showed it) uses a proposed standard format from Apple called Meta-Content Format, or MCF, to represent information. MCF includes information on "nodes" (pages on your site when it is showing a map of your site) and "links" (the pointers between them).

A user who views your site map with a HotSauce browser first sees a box representing your home page, known as the root node (see Figure 6). Zooming in reveals nodes for linked pages; navigating to one of those shows links from there (see

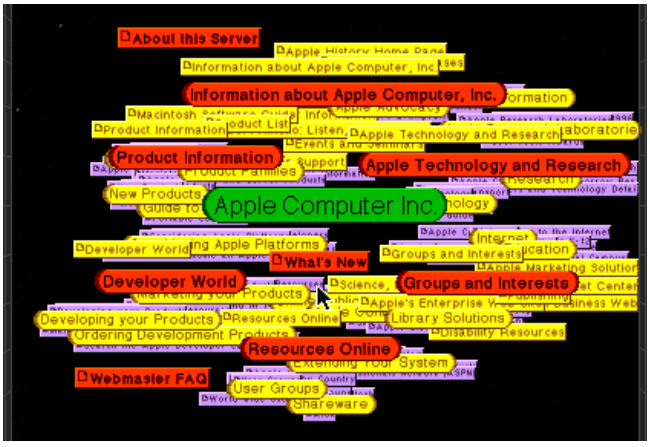

Figure 6. HotSauce showing a site

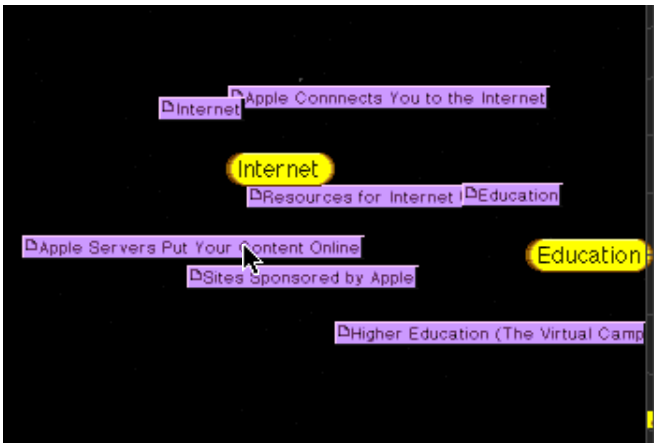

Figure 7. HotSauce zoomed in on a few nodes

Figure 7). Clicking on any node shows that page in the user's browser.

Navigation in HotSauce is easy because us humans have deep-rooted instincts for spatial memory: to survive, we need to be able to find our way back home using landmarks. It is often easier for a user to remember that a particular page is "up, and to the right," near a particularly memorable or notable page, rather than memorizing a particular long URL or obscure document title.

Another thing HotSauce gives the user is rapid insight into what's on the site, and the relationships between the pages. A few minutes spent exploring a site in HotSauce helps the person visiting it get a better understanding of the nature of information on the site, and where to find it.

The "fly-through" view isn't the only way to look at your data with HotSauce; the browser also offers an alternative outline-style view of the structure of your site (see Figure 8). Third-party developers are working on creating alternative viewers as HotSauce plug-ins.

To author a site map with HotSauce, you can simply select a starting page and follow the links, deleting nodes not central to your site's structure (like cross-links between sections and links to help pages and the like). HotSauce will help you map out the data.

When you're done with the file, you simply save the resulting MCF file and place it on your site with a .mcf extension, and tell your Web server about the MCF MIME type. Create a link to the document from your pages, and perhaps a link to the HotSauce browser tools that users will need to view the map, and you're set!

An alternative approach is to use a database tool that can serve MCF format directly, and use that to represent your site. Some second-generation Web site authoring tools, like NetObjects Fusion, can directly create MCF representations of your site when they publish pages.

The best way to see how you can most effectively "sauce your site" is to visit other sites using HotSauce technology - there are hundreds of links from Apple's HotSauce site.

Searching Your own Site

A somewhat more modest goal than mapping out your site or searching a corner of the ever-expanding galaxy we call the Web is to let users search content on your own site. Because you (hopefully) control your own server and the pages on it, you can select tools optimized for this task and tune them for the best possible performance.

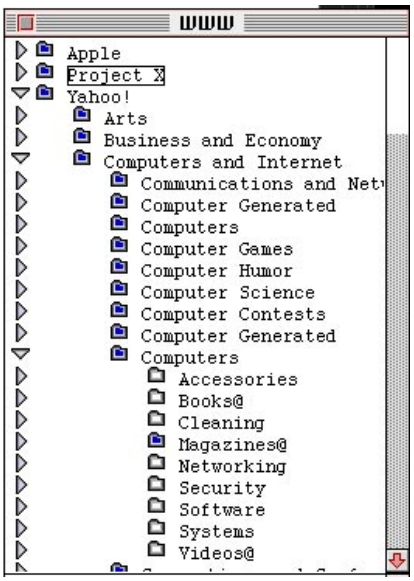

Figure 8. HotSauce's outline view

You can choose from a couple of different approaches for this task. Some tools, like Apple's e.g. (more on Apple e.g. later), read all the files on your site or a portion of it and create index files that provide rapid access. Others read all the content into a database and index it there. Other tools provide non-indexed searching, which has some advantages for some sites.

Index-based Site Searching Approaches

A book may only be as good as its index, and you could say the same for a Web site as well. When you equip your site with a search engine that creates an index of your content, you can provide rapid access to all your pages, and an alternative method of navigation.

The way index-based search engines work is actually fairly simple. First, they index your data, as follows:

- The search engine looks at every file in a folder you specify, usually your Web server's folder.
- If the type and extension match what it is looking for (usually text files or ".html" documents), the engine reads the full text of the file and makes a list of the words in it.
- It adds the list of words in each document into its master index that, for each word, lists the files it appears in.

You run the indexing component of the tool either continuously (some are part of a CGI) or at recurring intervals. Each time you activate it, it scans the folders for updated or new files, and regenerates the index.

When a user enters a search query on a form on one of your Web pages, that activates the CGI or plug-in component of the search engine. It takes apart (parses) the query and looks up each of the significant words in its index, making lists of matching files and ordering them by criteria such as how often the words occur in each file. Most give a list of document titles with excerpts from the text on each page, and links to the actual documents.

The tools vary in exactly how they construct their indexes, how large the index files are for a given set of data and how fast they perform indexing and searching.

Indexing with Apple e.g.

e.g. is a full-text retrieval CGI that indexes your site and makes it searchable via the Web. Its strengths are its powerful search engine, with its ability to let users "search by example," and its ease of installation. As of this writing, Apple is making it available for free as an unsupported "technology demonstration" rather than a commercial product, but as with most pre-release internet tools, support is available from other users via a mailing list.

The concept of searching by example, as supported by the V-Twin engine used in e.g., is a powerful one. After an initial search based on a few words entered by the user, e.g. presents a list of matching files. The user can see the contents of files and then select several and tell e.g., "Show me more documents like these." (see Figure 10) Effectively, you use entire documents to construct queries, and e.g. re-orders the list of matching documents, bringing the ones sharing the most words with your selected documents to the top of the list.

e.g. operates on a folder you, as server administrator, specify, so you can serve up non-HTML documents (text files only) and files not explicitly linked from

Figure 10: Searching in Apple e.g.

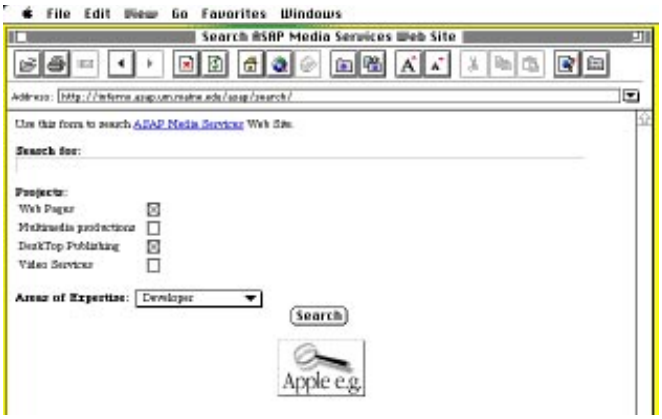

Figure 11: e.g. umbrella in action at the University of Maine

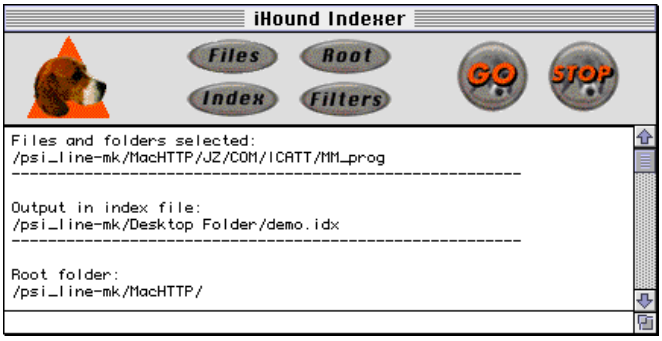

Figure 12: iHound's indexer

your site. You can point e.g. at your Web server's folder and index the actual HTML files on your site, or use it to provide access to a separate collection.

To serve up multiple independent indexes, you need to run multiple copies of e.g., and you may run into some tricky business with the preference files.

By default, e.g. indexes all the files in your WebStar folder and subfolders; you can select other locations to index.

You can also select when e.g. checks for new and updated files and recreates its indexes, so that the server isn't slowed when it is busiest. Unless you change it, the time is set to midnight every night.

You can edit an HTML template file to customize (to some extent) the look of e.g. indexes on your site.

e.g.'s indexing component goes through the folders you specify and looks for particular document extensions, like .html; you can specify which extensions to omit. For example, if you run NetCloak, you might want to exclude .nclk files, which, when served through e.g., would show cloaked portions (because they're not being filtered by NetCloak directly).

e.g. keeps a log of searches, so you can see what people are looking for and monitor the use of your index.

I generally recommend e.g. for people looking to provide searching of large sets of documents on their sites. The "search by example" function is quite powerful, and makes up to some extent for the tool's lack of advanced query support.

Shelter your searchers with e.g. Umbrella

Apple encourages developers to build on top of many of its products, and e.g. is no exception. ASAP Media Services created e.g. Umbrella to add simple customization to forms in e.g.

Where e.g. limits you to a single field, e.g. Umbrella supports multiple text entry areas, pull-down menus, check boxes and radio buttons (see Figure 11). This lets you provide your site's users with more "pre-made" query components, so they aren't just guessing at what words to search for.

e.g. Umbrella pre-processes the data before passing it on to e.g.

It is available in both CGI or WebStar plug-in form.

Indexing with iHound

This indexer and search engine works with a variety of Mac Web servers. It provides basic searching, with boolean logic ("and" and "or" operators between keywords). It supports multiple indexes, and it includes quite a few multilingual features (perhaps not surprising, given its origins in the Netherlands).

The program scans a Web server's file structure or portions of it word by word, creating indexes for fast searching.

You can customize the pages it returns, to a greater extent than e.g. allows. It is also more flexible in its support for extended characters, frames, remote indexing, and more-complex queries.

It is available in CGI and WebStar API plug-in form. A 30-day free trial is available.

Spinning a Web index with MacSpinner

Another quick way to set up site searching is to use MacSpinner.

This tool comes in two pieces: SpinIndex, which creates a folder-by-folder index, and SpinSearch, the CGI that does the searching.

It allows rather sophisticated controls over whether it shows only documents containing all the search words, and lets users doing searches indicate (with radio buttons) the relative priority of the frequency and grouping of the words.

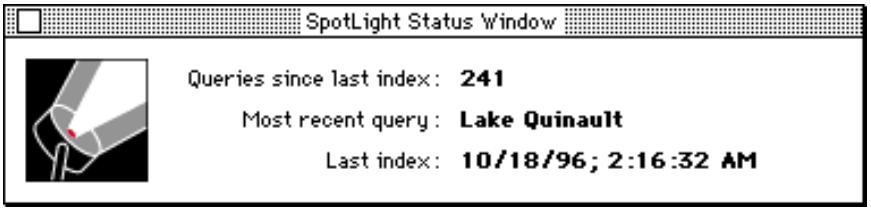

Figure 14: SpotLight's server-side status indicator interface

The final-release version is slated to be available as shareware for less than $30.

Using a database for site searching

Another approach to indexing your site is to use an add-on tool that works with an off-the-shelf database to index your pages. Two tools, curiously both from the Seattle area, work with FileMaker Pro as a search engine; both require the UserLand Frontier scripting system (but don't force you to do any actual scripting). Another is based on the Tango database-access tool from Everyware, and can work with a variety of database back-ends.

FileMaker/Frontier Approaches

MacSite Searcher from Blue World Communications offers a different sort of solution: a fast, fielded, site-specific search engine. It lets users search across your site for information interred on any particular page.

This power does not come without a price, however: the program requires that your server run both Claris FileMaker Pro and UserLand Frontier. To do the indexing, it actually slurps the content of your Web pages into a FileMaker database, effectively doubling the disk space required to host your site.

The net effect of this setup is that you can perform very rapid searches, with a minimum of fuss. MacSite Searcher sells for $295 and up; a 30-day demo is available at Blue World's site.

SpotLight, from World Wide Power and Light, uses a similar approach, with a lower price ($99) and a few more modern features than the current MacSite Searcher release as of this writing. It provides more selectivity of particular folders to search, additional performance in some circumstances (mainly through using a more recent version of Frontier), and a different user interface on the server (see Figure 14).

You can tell SpotLight to index or ignore HTML "meta-tags" as well as regular tags, and specify particular subdirectories for particular searches.

Searching with Mango and Tango

Mango from Metasys delivers some fairly impressive search features by using the Tango CGI from Everyware Development Corp. The Web interface for Mango is controlled through a Tango query document, so you can easily customize the hit lists to display information in all kinds of interesting forms.

Mango itself performs fast indexed searches with boolean searching, relevance sorting and match grouping.

Mango users can take advantage of Tango's access to system variables such as the user IP address and customize the pages it displays accordingly.

Non-indexed site search techniques

You can also allow searches of your site the old-fashioned way. Instead of pre-indexing data for speedy access, it is sometimes easier to use tools that simply go through every file in a folder when a user triggers a query. This technique is more common on Unix servers, which often use PERL scripts to search a set of files.

While not using an index means that searches run more slowly, this technique does have some advantages:

- You don't have to create index files, so you can save time and set up new

Figure 15: Mango allows lots of customization in search results pages

content to search more quickly with less advance preparation. This also saves disk space (indexes typically take up about as much space as the text they index), and means you don't have to have an indexing application running continuously or at scheduled intervals.

- Searches always refer to the current contents of your site at the time of the search - there's no lag in indexing.
- Many Web serving computers have CPU power to spare, so the search process doesn't take all that much longer than an indexed search would, especially for smaller sets of data.

A Mac tool that provides non-indexed searching is TR-WWW. This CGI, shareware from Australia, is recommended by the maker (Monash Medical Informatics) for sets of documents up to about 15 megs in size.

It can perform either relevance ranking or show documents in context.

One nice feature of TR-WWW is its support for record delimiters, so that it can search for individual pieces of a file rather than just for the entire document.

It includes some advanced boolean and proximity operators in its search queries.

The price ranges from $50 to $3,000, depending on where and how you use it.

Send a message to raines@ugconnection.com with the subject "send book info" to get info or visit http://www.macsupersite.com/netpro/

Raines Cohen, BMUG co-founder, is a "user group groupie" who finds himself unexpectedly pursuing a 17-year career in U.G. Management. He works as Online Communications Manager for User group Connection (http://www.ugconnection.com/), the Apple spinoff supporting user groups. He is currently helping launch NetPro, the magazine of Mac solutions for internet professionals (http://www.macsupersite.com/netpro/), and writing a book on Web DB publishing on the Mac.

Resource:

NetPro magazine
http://www.macsupersite.com/net-pro/

Maxum's Phantom
http://www.maxum.com/

Blue World's MacSite Searcher
http://www.blueworld.com/macsite/searcher/

A Standard for Robot Exclusion
http://info.webcrawler.com/mak/projects/robots/norobots.html

Apple's HotSauce Site
http://hotsauce.apple.com/

Apple e.g. (CyberTech)
http://www.cybertech.apple.com/apple_eg.html

e.g. Umbrella
http://inferno.asap.um.maine.edu/e.g.umbrella/

iHound
http://www.icatt.com/

MacSpinner
http://riker.ps.missouri.edu/RicksPage/MacSpinner/MacSpinner.html

WarpSearch
http://associate.com/innovative/glen_stewart/about_warpsearch.html

SpotLight
http://www.wrldpwr.com/Spotlight/

Mango (metaSys)
http://www.metasys.co.jp/metasys/mango.html

Everyware (Tango)
http://www.everyware.com/

UserLand Frontier
http://www.scripting.com/

Simple Telephone Solutions for the Online Junkie

How to spend as much time as you want online, without totally ignoring your friends and family.

by Tristan Li Tom

Do you spend hours upon hours online with the Internet? Do your friends, family and associates complain that your line is always busy? Do you feel guilty because every time you go online, it means that you will possibly miss an important phone call? If this description fits you, then please read on. After all, there's no reason you can't be online 24 hours a day if that's your desire, because there are a number of simple solutions that can make life with your computer modem a whole lot easier. One solution is to get a second phone line at a cost of several more dollars a month. Other solutions involve subscribing to a custom calling service through the local telephone company at a cost of only a few extra dollars per month.

Let's see how we can solve the problem of a tied-up phone line with some examples of a few of the most popular custom calling services available from most local telephone companies. I'm going to list several options—it will inevitably be up to you to decide which one is right for you.

First, a Second Phone Line

The first and most obvious recommendation I can make is to get a second phone line installed at your location. That way, you can keep your regular line free for important voice calls, and still go online all you want. Another benefit of having two lines is that you can still make and receive calls on the first line while you are on the modem on the second line. Don't get any special calling features for your second line, just get a regular no-frills telephone line. The trick here is to keep this second telephone line solely for your modem. Do not to give out the number—otherwise someone will surely try to call you while you are using the modem and they will just get a busy signal.

Adding a second phone line is a the best way to reap the full benefits of an unlimited no-time-limit Internet service provider—you can stay connected 24-hours a day and your friends and family will still be able to call you on your regular voice telephone line. You can also, for example, call out for pizza delivery without having to go off-line from the Net (although you can probably order pizza from somewhere on the Internet too, but that's another story altogether).

What if You only Have One Line?

A second phone line is an added extra cost and may be prohibitive for many. You may want to add a custom calling feature to your existing phone line instead. These are special options that can be easily added to your phone line at a fraction of the cost of adding and keeping a second telephone line. And the phone company can usually add or remove these custom calling services to your existing phone line within a few hours of your order. Before I go on, please remember to call your local telephone company to see if the custom service you want is available in your area, and for full, detailed instructions on how to use and set up these services. Availability, pricing and

Adding a second phone line is a the best way to reap the full benefits of an unlimited no-time-limit Internet service provider—you can stay connected 24-hours a day and your friends and family will still be able to call you on your regular voice telephone line.

usage vary from city to city. And there are plenty of other features which aren't mentioned in this article.

You may also wish to take a look at the front of your local city telephone book. Most phone companies print detailed information about custom calling services there. Most of the services only cost a few extra dollars per month, but if you have more than one custom service, some phone companies will give you a nifty package deal by charging less per service if you carry two or more of them at the same time. Some telephone companies will also waive the one-time installation fee (usually about $5.00) if you order your services via the automated voice order line. It pays to ask your telephone company for all of the juicy deals.

Call Waiting

Call waiting is a service through your local telephone company which allows you to receive calls even when you are on the line. Basically, if you are on the phone, and someone calls, you will hear a beep and can then click the flash button or hook switch on your phone to answer the other call. This is great because your phone will never be busy and you find out who is trying to get a hold of you immediately. But if you are using the computer modem online, and someone calls, your connection will be terminated. While being cut off in the middle of an important download or a hot online chat is certainly an inconvenience, at least you can still receive a voice call which may be an emergency.

In some areas, you can temporarily disable call waiting by entering in a per call code (like *70) before placing your call. You can program this code into your online dialing sequence so that every time you are online, instead of being cut off when someone calls, your line will just be busy. That way, if you don't want it to cut you off while using the modem or don't want to be disturbed on a voice call, you don't have to be. But if you do disable Call Waiting, your line will be busy when someone tries to call, which defeats the purpose of the feature altogether.

Call Forwarding

This is one of my favorite features. This service allows you to forward your line to another number. So when someone calls you, instead of the phone ringing at your phone like normal, it will ring at the number where you have your line forwarded to. Even if you are on the phone, with call forwarding active, your callers will be forwarded to the number of your choice. You can choose virtually any number (you will pay any toll charges if you forward your number to someplace that is a long distance call from your phone), and you can easily turn call forwarding on and off from your regular phone at any given moment in time. To turn it on, you enter in a short code (like 72#, for example) plus the phone number you want to forward your line to. To turn it off so that you can receive calls on your line again, simply pick up your phone and dial 73# (these codes will vary with different telephone companies, and remember, you have to have the service activated through your telephone company before they will work).

I have only one home telephone line and I use the Call Forwarding feature extensively. Here's what I do: when I leave the house, I forward my phone line to my cellular phone which has voice mail messaging on it. This way, I can answer the call on my portable phone from wherever I may happen to be at any given moment in time and space. If I want to avoid airtime charges or simply don't want to pick up the phone (my personal policy is to never answer my cell phone at the table in a restaurant for example), I can let the cellular phone ring or even turn it off and the voice mail will then pick up to take a message for me.

When I'm online on the Net, I also forward my calls to the same cellular number. That way, callers can leave a message for me even if my cellular phone is off (remember, I have voice mail messaging on my cell phone). If I'm expecting an important call, I certainly don't let it stop me from going online. I simply forward my phone to my cellular line, go online and do whatever I need to do on the Internet, and if the important call comes in, I can answer it on my cell phone. Call forwarding also works well if you have a pager and voice mail with the pager notification option. When you are online, you can forward your phone to your voice mail number and you will be beeped as soon as someone calls. If you are online, at least you'll know that someone is trying to get hold of you.

Busy Call Forwarding

Just like regular Call Forwarding, Busy Call Forwarding forwards your calls to another telephone number. The difference here is that it only does this when you are using the phone (either on the Net or on a voice call). This is handy because you don't have to dial in any special codes in order to forward your number-it's all automatic. Your number's busy, your calls get forwarded. The way it works is: you give the number you want your line to be forwarded to the telephone company and when your line is busy, your calls get routed to that other number. Unlike regular Call Forwarding, you can't change the forwarding number without calling the phone company. In addition, what if you leave the house? With Busy Call Forwarding, you can't simply forward your calls to your cellular phone, voice mail or any other number. The catch is that Busy Call Forwarding only works if your line is busy, so it's virtually useless when you leave the house.

Whether you are an online junkie or just a casual recreational user, you can certainly benefit from any one of these simple solutions to your telecommunications problems. So go ahead and go online—you've got the whole wide world in your hands.

For more information about any of the above services, please contact your local telephone company. You may also wish to consult the front of your city telephone book for a description of available custom calling services and instructions on how to use them.

*Even though he still hangs out online for fun, **Tristan Li Tom** has become disillusioned with the Internet and has turned elsewhere to look for the meaning of life. He is a self-proclaimed media hound, Mac consultant and creative writer who hopes to find the ultimate balance between all three. Mr. Tom grew up on video games and comic books, and when he's not collecting Twin Peaks or R.E.M. memorabilia, he's collecting his thoughts. Tristan Li Tom can be reached at TristTom@aol.com.*

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America Online goes International

How to spend three weeks trying to "Get Online Today!"

by David Scott

Let me start by telling you that I am a reasonably satisfied America On line (AOL) user, and I spend a bit of time helping friends to get signed up. I didn't write this to put down AOL in any way, but to let all you "homebodies" know a bit about what it's like using AOL from outside the Land of the Free.

Starting in Japan

This is a story about two women in Tokyo who wanted to get online. All their friends were using email, constantly extolling the virtues of low cost global communication, and the women were beginning to feel left out. They had both recently purchased brand new computers. Anita, from England, had bought a Performa, and Mayumi, from Japan, had bought an Epson Pentium notebook, with the usual "Intel Inside" warning label displayed prominently on the case.

Both Anita and Mayumi began their journeys down the information highway about the same time, and both were relying on helpful, techno-geek type friends to get them hooked up. It developed into a friendly race, to see who would get email first.

Mayumi signed up with a local Internet Service Provider (ISP), and had a shiny 28.8 PC card modem in the slot of her new PC, which runs the Japanese version of Windows 95. However, after installing the Internet software, something wasn't working, and the software couldn't seem to find the modem. So, she spent some time asking around for help.

A Great Buy

Anita didn't have a modem, but Ben, who had just returned from a safari to his home country of California, had an extra one. It seems that during his travels he had come across a fantastic software/hardware bundle for sale, and it included a Teleport Bronze 2400 baud modem. So, one Sunday afternoon we all gathered at Anita's place for a "Computer Party." Being Mac people, we assured her we would have her online in no time, and she would easily beat out Mayumi and her modem problems. I brought along my trusty list of AOL sign-up-a-friend passwords, which I carry with me at all times.

After installing both the AOL and the Teleport software, we tried to dial-out, using the local Tokyo access number. However, something wasn't working. The modem had trouble connecting. Being Mac people, we sat there in stunned silence, since these kinds of problems were never supposed to occur. Then we tried everything we could think of, messing with the AOL setup and the Teleport control panel, but it was no go. So, giving our apologies to Anita (laced with all the technobabble excuses we could think of) we parted company, with Ben taking the modem home to try out on his IIcx.

Trying Again

The following Sunday afternoon we gathered once more in front of Anita's Performa, armed with the knowledge that the modem had worked just fine on Ben's machine. Once again it had problems on

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Anita's Mac, until Ben lowered the baud rate setting to 2400 and tried dialing out. Magically, we connected! Now some of you might be saying "How obvious, it is a 2400 baud modem, isn't it?" However, those of you with higher speed modems know that we are specifically told to set the baud rate to at least double the speed of the modem, else how could we gain any advantage from the wonderful compression technology built into the thing? I believe the problem may be that most 2400 baud modems don't use hardware handshaking, and therefore cannot handle a computer-to-modem link that is faster than the modem-to-modem link. The setting you make in the software is for the computer-to-modem link, and with newer modems, does not have to match the modem's rated speed.

[W]e proceeded with the sign-up procedure, although I knew it wasn't going to work. You see, I had already been through this before.

Anita didn't really give a whit about hardware handshaking, she just wanted to Get Online Today (and beat Mayumi). So we proceeded with the sign-up procedure, although I knew it wasn't going to work. You see, I had already been through this before. AOL checks your credit card number as soon as you enter it, and, for instance, if the billing address you submit doesn't match the bank's records, you get electronically rejected. I had tried to sign up friends with non-US billing addresses, and it never worked. Besides this, the address form has a pop-up menu for "Country" which only lists the US and Canada. Anita's billing address is in England.

Calling America

Our next step was to call the 800 number that AOL gives you when you have trouble signing up. Of course, from Japan we have to pay the usual overseas phone rates to call any number in the US, even an 800 number, but Anita was game. So we called. The conversation went something like this:

> "Hello, America Online, how may I help you?"
>
> "Hi there. I'm calling from Japan, and I'm trying to help a friend sign up who's from England, see, and your online forms have no way to put in a foreign billing address. What should we do?"
>
> "Hu....just a moment. I'll talk to my supervisor."

[Mayumi had brought her notebook] so that Bryan, our local Windows guru, could try his hand at solving her modem troubles. He did his best, but those Japanese error messages don't make Windows any easier to debug.

When you're put on hold at a dollar per minute, your patience tends to run as thin as your wallet. After about 4 dollars, we hung up. Then we called right back, getting a different operator. The conversation went almost exactly the same as the first time, but this operator got back to us before we hung up, and said:

> "Thank you for waiting. You need some special software to sign up, so I will give you a number to call, and you can ask them to send it to you"
>
> "Okay, I'm ready"
>
> "The number is 0180…"

"0180? Er, excuse me, where is that number located?"

"It's in Germany."

We all had a great giggle over that, but Anita still seemed completely oblivious to the fact that all these calls were going on her phone bill, so we pressed on. The AOL office in Germany answered in German, of course, and I asked for someone who could speak English. They connected me with a tech support guy who was very nice, but explained that they could only handle sign-ups for German credit cards. Made sense to me. He then gave me the number of the AOL office in England, and we bid him a *güten tag*.

Homing in on London

Our call to England didn't go quite as smoothly, as it was also Sunday over there, and so they weren't open for business. There was an answering machine, and with a lot of yelling about "What should we say!?" much like a bunch of high school kids ordering a pizza, we advised Anita to ask for the software, and spell out her address in Japan.

Then Kent had an idea. We needed to test the Global Village fax software anyway, so why not follow up the phone message with a fax. This seemed especially wise, since the Japanese address might be difficult to understand on the recording. Luckily, the helpful German tech had also given us the fax number, so Kent gave Anita her first lesson in digital faxing. There was nothing else we could do then, but wait for the software to arrive.

Third Time's the Charm?

Two weeks later, on another Sunday afternoon, we were rather excited as we walked towards Anita's place, ready for the big day. She assured us the disk had arrived in the mail, and what could stop us now? Even Mayumi had come along. She had brought her notebook to church that day, so that Bryan, our local Windows guru, could try his hand at solving her modem troubles. He did his best, but those Japanese error messages don't make Windows any easier to debug.

When we reached Anita's apartment, she proudly handed the new disk to Ben, who looked at it for a moment, shook his head slowly, and handed it to me. There on the label, in clear bold type, it said: "For Windows."

It was our own fault. We checked the fax, and sure enough, we had neglected to mention the type of computer. But we weren't licked yet. We had Mayumi there, with her PC in hand! All we had to do was install the British software on her Japanese Windows system, and get it to work with a balky modem. What could be easier?

Success at Last

Amazingly, the British AOL client worked just like it's supposed to, without those annoying problems that Internet Protocol (IP) software is so well known for. From Mayumi's Epson, we called the London AOL access number, and signed Anita up using her British credit card. Then, from the fresh, unassigned American AOL software on her Performa, we called our local access number and put in her new ID and password (this only works if the software has not yet been used to sign anybody up). Once we did that, her ID was tucked neatly away wherever they hide it amongst all the AOL files, and she was now in Cyberspace.

Actually, we called London several times, as I wanted to see if we could use one of my sign-up-a-friend passwords. Nope. The client changes the Country popup back to US/Canada if you use a US-issued password. Likewise, the British password wouldn't work correctly in the US client software. We had to use the British password that came with the British disk, in the British client software, and call London (a British city).

The client changes the Country popup back to US/Canada if you use a US-issued password. Likewise, the British password wouldn't work correctly in the US client software. …

So, we managed to sign up a British citizen, living in Japan, to an American BBS. It only took three weeks, seven or eight international phone calls to three different countries, and one borrowed PC. Technically, Anita had beaten Mayumi in the race, but they decided to call it a draw, since Anita needed Mayumi's computer to sign up. Mayumi was so impressed that she signed up for AOL the next day (she happens to have a US credit card).

And I don't get my 15 bonus hours :(

David Scott works as a Mac consultant, and finds it interesting trying to make ends meet in the world's most expensive city. He's anxiously awaiting the opening of the AOL office in Tokyo, since those bonus hours make up a substantial part of his income. David can be reached at Tokyodave@aol.com

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YUCK! I've been SPAMMED!

A Quick Guide to What to Do When You get sent Annoying and Unsolicited Pieces of Junk Email

by Peter Linde

In the Beginning…

Do you remember it? How excited you were that day? Your very first online account. Maybe it was America Online. Maybe it was a real dial-up Internet account. With eyes brimming with excitement and heart filled with expectations of all that was about to become yours, you logged on.

A new world to explore. Information, entertainment, shopping, free software, new friends from around the world. It all seemed too good to be true.

But then it started. Slowly at first. So slowly that you may not even have taken note the first time. But soon it became a trickle. The trickle, a stream. The stream a raging torrent. Ever increasing. Relentless.

You started receiving junk email.

Suddenly, the joy of logging in was being replaced by the frustration of having to empty your mail box of junk mail you never asked for. If you pay by the minute for your connection, this frustration can be coupled with the joy of knowing that you are actually *paying* to receive someone's advertisement.

It's Called Spam…

You've been spammed. Spamming is the odious practice of sending a piece of email to hundreds or even thousands of hapless Internet users who never asked to receive it.

Suddenly, the joy of logging in was being replaced by the frustration of having to empty your mail box of junk mail you never asked for. If you pay by the minute for your connection, this frustration can be coupled with the joy of knowing that you are actually paying to receive someone's advertisement.

Nobody likes to be spammed. So why do businesses spam? The real answer is shrouded in mystery. It must be one of only a few possibilities. One possibility is that people and businesses who spam meet with some measure of success. Obviously, it costs next to nothing to spam, so if even one person bites and buys the product or service, the spamming has paid off. This theory would imply that the more people you spam, the more of a positive response you'll get.

When compared to the cost of direct mail, spamming looks like a direct marketer's dream come true except for one small thing: the culture of the Internet makes it at least impolite and at most downright rude to send anything that has not been requested to anyone on the net.

So, spamming ends up alienating possible customers and clients. This leads to the second possible reason that people still spam: they don't know any better.

To the Rescue…

One of the great things about the Internet is that both justice and education can be swift and sure. This article is intended to give you a quick guide on how to both educate and exact revenge upon spammers.

It is actually pretty easy to deal with spammers, but it takes a little effort and a little smarts.

Most spammers know that people hate being spammed. Because of this, they try to make it difficult for you to find them. Before they send you their junk email, they alter the return address. This is known as "cooking" a return address.

If you reply to a return address that has been cooked, your email comes back to you, undelivered. You get the frustration—they go off on their merry way to spam again.

However, with just a little effort, you can usually find out who the spammers are (or at least from what system the mail actually originated). With the right information, you can sometimes reply directly to the spammer or even get them kicked off of their system by their Internet service provider.

Most providers, like AOL, Netcom, Best, and Interramp, just to name a few, have strict policies against spamming. They don't like spamming any more than you do, because both spamming and the angry replies to spamming eat up the resource that ISPs (Internet Service Providers) are actually providing: bandwidth. The more traffic that goes through their system, the more it costs them. If one person sends mail to a million people, and those people reply that they are not interested, it eats up CPU time on the ISP's server and slows down the whole system for everyone. Not good.

Consequently, ISPs are only too happy to help rid the world of spammers.

Anti-Spammer's Toolkit

In order to defeat spammers, you will need the following:

1. An Internet account (yes, I know that you probably have one or you wouldn't have read this far).
2. If you are on the net, you must have some type of mail program (again, kind of an obvious one–I'm just trying to be complete). The two most common email programs are Claris Emailer and Eudora.
3. NCSA Telnet. This is a program that allows you to make a shell connection to a UNIX server on the Internet (don't be scared—it's really easy).
4. Netscape. This is not a necessity, but, in conjunction with Telnet, it can be useful.

That's it.

Quit Yapping and Tell Me What to Do…

So, you get your email and you find some annoying spam garbage. We'll use an actual spam that I received this morning. Just to be on the safe side, the names, offer, and email addresses have been changed. I will divide this typical piece of junk email into sections in order to point out the interesting and useful points [my comments will appear in brackets]:

Part I Subject/To/From/Date Area

```
Subject:  FREE - MING DYNASTY
VASE!!!

Sent: 10/1/96 12:53 AM

Received: 10/1/96 9:17 AM

From: nobrain@spamworld.com

To: nobrain@spamworld.com
```

[Notice the cooked "From:" No doubt, spamworld.com doesn't exist—or if it does, the username, "nobrain" isn't on it. But we'll still get 'em. Also note the time this mail was picked up. This will become interesting later.]

Part II The Message Body

```
THIS IS THE NEW MING DYNASTY VASE
THAT EVERYONE HAS BEEN WAITING FOR.
```

[Notice the spammers' use of uppercase letters. On the net, uppercase letters are used to indicate that one is shouting. Why must spammers always shout?]

```
It's for the couch potatoes amongst
us who want a vase, but not neces-
sarily an expensive one. Well, this
is the $499 solution to a $3,000
problem. You merely place this on
top of your TV Set and as soon as
you turn it on, you're LOOKING at a
VASE!!!! The BEST PART IS we're
looking for distributors. You can
make $300 to $400 on each $499 VASE
that you sell. And it's not really
selling, just demonstrating it.
Everyone wants it - BADLY. I'm
making $10,000 per week and I just
stared [sic] one week ago. So, if
you want more information on this
FANTASTIC NEW OPPORTUNITY ... You
need to access my FAX ON DEMAND
800-555-5555
Dial the number above with your
phone, Listen for the Prompts. Key
in the Phone Number of your Fax
Machine, then HANG UP AND WAIT A
MINUTE.
The docs will be faxed to you IN
ABOUT TWO MINUTES!
```

[For the most part, the Body can be ignored. Don't even waste time reading it. It's just a slimy sales pitch and possibly a scam at that. Remember—if it looks to good to be true, it probably is.]

Part III The Header Information

[Here's where the fun begins! Note that the first line of the Header (below) contains a "From" address that is different from the one that you saw at the top of the post. The address in the Header reads, "nobrain@ix9.ix.netcom.com". I have bolded the interesting parts of this header.]

```
————————————Headers ————————————
From nobrain@ix9.ix.netcom.com
Tue Oct  1 04:52:42 1996
Return-Path:
nobrain@ix9.ix.netcom.com
Received: from dfw-ix6.ix.netcom.com
(dfw-ix6.ix.netcom.com
[206.214.98.6]) by
emin01.mail.aol.com (8.6.12/8.6.12)
with ESMTP id EAA27038; Tue, 1 Oct
1996 04:52:36 -0400
Received: from leviathan (scz-ca7-
06.ix.netcom.com [204.31.227.38]) by
dfw-ix6.ix.netcom.com (8.6.13/
8.6.12) with SMTP id BAA17444; Tue,
1 Oct 1996 01:43:27 -0700
Message-Id:
<19961001444.BAA17444@dfw-
ix6.ix.netcom.com>
Comments: Authenticated sender is
<nobrain@popd.ix.netcom.com>
From: nobrain@spamworld.com
To: nobrain@spamworld.com
Date: Tue, 1 Oct 1996 00:22:56 +0000
MIME-Version: 1.0
Content-type: text/plain;
charset=US-ASCII
Content-transfer-encoding: 7BIT
Subject: FREE - MING DYNASTY VASE !
Reply-to: nobrain@spamworld.com
Priority: normal
X-mailer: Pegasus Mail for Win32
(v2.42)
```

[You may never have looked at Header information before, but take a minute, go back and read the whole thing. You will note that the entire path that this piece of email took to go from their machine to mine is recorded in the Header. This means that by looking at the first machine, I can tell where the post came from.]

Yes, it is the header that tells all. What we have learned is that "spamworld.com", if it exists at all, is actually just a vanity domain name that sits on a machine at Netcom (a national ISP).

At this point, it is easy to not only reply directly to the spammer (at the address that shows up in the Header), but also to complain to their ISP. Keep reading to see the note that I did send to Netcom, and the reply I received.

He Must be Made of Stronger Stuff…

But not all Headers are this easy to read. Sometimes, a UNIX-savvy spammer can even cook an entire header although

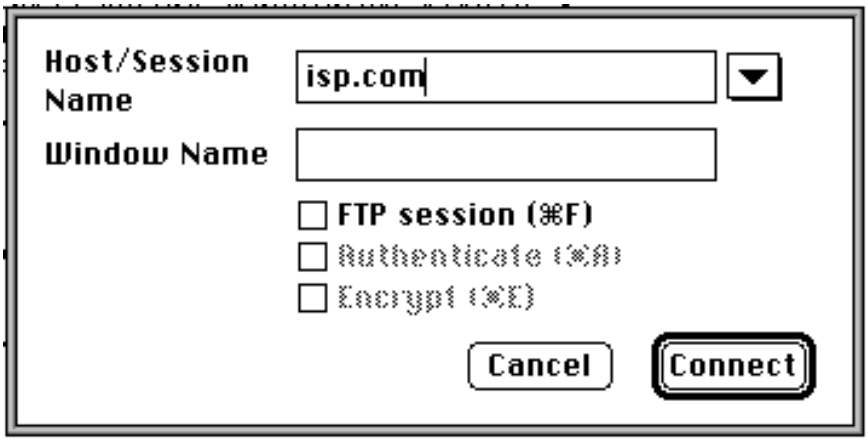


Figure 1.

most do not seem to do this. Sometimes, only the vanity domain name (such as "spamworld.com") will show up in the header, thus obscuring the real ISP to whom you must complain.

What does one do then? Ah, one calls in the Big Guns: NCSA Telnet.

For those of you who have not used it, Telnet is a terminal emulation program. That's computer-ese for "a program that makes your computer act like a dumb terminal instead of like a smart Mac." Telnet allows you to make a direct connection to a UNIX server. (I promise you will only need to learn one UNIX command so stay with me here.)

You can use Telnet in two ways. You can either log into your ISP by making a PPP connection (the same way you would if you were going to use Netscape) or you can use Netscape and have it use Telnet as a helper application. I will give step by step instructions for both methods:

Method 1: Using Telnet

1. Make your PPP or SLIP connection the way you normally would. (Sorry to those of you who use only AOL—you can't use Telnet.)
2. Start the Telnet program.
3. From the File pulldown menu, select, "Open Connection…"
4. In the resulting dialog box (Figure 1), type the machine name of your ISP where it says to enter the "Host/Session Name". (E.g., if you have an account on Best, type, "best.com"; if you are on slip.net, type, "slip.net".)
5. Hit "return." A window will appear as soon as the connection is made. You will be asked for your name and password. These are the username and password for your Internet account. If you entered these in your PPP setup ages ago and can no longer remember them, use Method 2 below.
6. Once you are logged in and at the prompt, you can type in the following command (without the quotes): "whois isp.com", where "isp.com" is the vanity domain name that you got from the Header.

Method 2: Using Telnet through Netscape

Use this method if you have forgotten your log-in information:

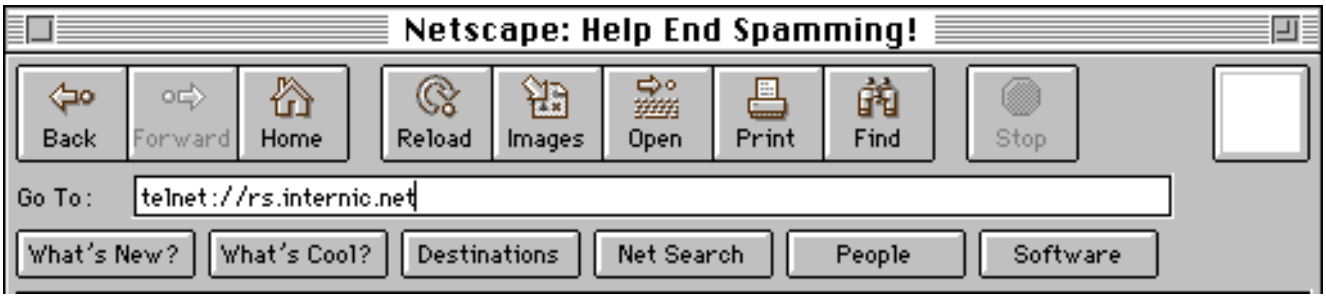
1. Make your PPP or SLIP connection the way you normally would. (Sorry to those of you who use only AOL—you need to be able to connect directly to a UNIX host machine.)
2. Start Netscape.
3. Enter the following URL (Figure 2):
`telnet://rs.internic.net`
4. This will automatically open the Telnet application and connect you to Internic (the company that registers domain names). You will not be required to input a login nor a password.
5. In the resulting window, at the prompt, type the following command (without the quotes): "whois isp.com", where "isp.com" is the vanity domain name that you got from the Header.

Usually, you will end up with a screen that looks something like this (This is the actual entry for the domain name of my business):

```
-> whois lindegroup.com
The Linde Group (LINDEGROUP-DOM)
     806 Hearst Avenue
     Berkeley, California 94710
     US

     Domain Name: LINDEGROUP.COM

Linde, Peter  (PL182)
websmith@WEBFOUNDRY.COM

Technical Contact, Zone Contact:
Woodcock, Bill  (BW1324)
woody@ZOCALO.NET

     Record last updated on 30-Jul-
96.
     Record created on 30-Jul-96.

     Domain servers in listed order:

     NS.ZOCALO.NET        157.22.1.1
     NS.NETUSER.COM       198.49.1.2
```

The important information here is the last information: the domain servers. Domain servers are the computers

Figure 2.



on the net that translate the words that humans use (lindegroup.com) into the numbers that computers use (157.33.11.244) which are called IP addresses.

Note that my domain name is listed with two domain name servers. This is standard practice on the Internet. The idea is that if one of the machines goes down, the other will be able to route my mail to me properly. Now, if both go down … I don't even want to think about it!

So, we can see above that zocalo.net and netuser.com are supplying me with domain name service. The chances are very high that one of these is my ISP. In this case, it is the first one, Zocalo. You may even note that Bill Woodcock is listed as the Technical Contact and that he has an address at zocalo.net as well. These are all good clues.

Calling All Cars…

So, we have gathered our evidence. What do we do now? Well, it just so happens that most ISPs have reserved the username "abuse" for people to report these kinds of things. In other words, once you determine from which system the message originated, you can simply forward the message (in its entirety—especially the Header part) to "abuse@isp.com" (exchanging "isp.com" with the ISP that you found in the Header, of course).

So in this case, because the ISP is Netcom, I forwarded my complaint to, "abuse@ix.netcom.com". Here is my actual letter:

```
Subject: Fwd: FREE - MING DYNASTY
VASE!
Sent: 10/1/96 9:25 AM
To: abuse@ix.netcom.com

These losers spammed me. I would
appreciate it if you kicked them off
this system. Thank you.
peter linde
peter@lindegroup.com
==========
Subject: FREE - MING DYNASTY VASE!!!
```

[I have omitted their original note here, but make sure you forward it to the abuse address.]

Look what I got back from Netcom (and note the time!):

```
Subject: Re: Fwd: FREE - MING
DYNASTY VASE!
Sent: 10/1/96 10:57 AM
Received: 10/1/96 12:01 PM
From: NETCOM Technical Support,
abuse@netcom.com
To: peter linde,
peter@lindegroup.com

Thank you for your report. This
user's account has been terminated
for violations of Netcom's Terms and
Conditions.
Brian
Abuse Investigator
_____________________________________
NETCOM On-line Communication
Services
Abuse Issues
24-hour Support Line: 408-983-5970
abuse@netcom.com
```

That's right, less than two hours after my complaint was made another spammer has bitten the dust. Oh sure, I have no illusions; it is likely that they will simply get a new account somewhere else and start all over again. But if enough people report spammers to their ISPs, I believe some percentage of them will get the message and stop spamming.

Peter Linde, in addition to ridding the world of Spam, is serving his fourth year on BMUG's Board of Directors. He is also the President of The Linde Group, Inc., a full-service Mac and PC support company based in the San Francisco Bay Area. He can be reached at peter@lindegroup.com.

A Network Manager's Top 10 Tips

by Nicole E. Martin, et al.

I. Learn about Your Network

First and foremost, every network manager should become well acquainted with the network environment they will, without fail, be troubleshooting. Familiarize yourself with the nodes on your network, how much traffic they send and receive, the types of traffic en route and how much bandwidth they consume, peaks, off-hour and segment loads, etc. The more you know, the easier it will be to identify potential trouble spots and the better prepared you will be to debug impending network problems.

II. Document Your Network

A most preemptive and crucial task, documenting the network will save a network manager from much pain and anguish the next time one hundred angry users call the Helpline. Keep up-to-date information on:

- Network topology (backbone, servers, bridges, routers, workstations)
- Most/least active nodes and protocols
- Bandwidth usage by node/protocol
- Utilization levels, peak traffic times and off hours
- Network IDs and Names (names and locations of cryptic Ethernet and IP addresses)
- Frequently communicating partners

III. Monitor Your Network's Health and Performance

Once a network manager is familiar with how the network functions "normally," it's easy to watch for fluctuations from that norm, which may indicate trouble. Be on the alert for excessive error rates, unusually high or low levels of activity, slow network response times, etc. Traffic to and from crucial servers and routers can be monitored for irregularities.

IV. Pinpoint Potential Problems

Overloaded segments, bandwidth hogs, bogged-down servers—who needs that? Track down those users who are constantly downloading graphic intensive files from the Net, or identify heavily used network servers and segments. Defining problem areas helps to narrow down where your attention is needed the most. You can then re-configure network segments, remove applications such as games which cause unnecessary traffic, etc.

V. Tranquilize Trouble Makers

Address problems *before* they blow up! Being proactive is a network manager's best defense. Don't ignore devices or applications with *warning* written all over them. If you notice a node is "talkative," a protocol is "chatty," or your network is incredibly slow at random times, perhaps it's time to upgrade some network hardware or software.

VI. Diagnose and Debug Networking Problems

Tackle the culprits! Dig down deep to trace malformed packets and their source. Investigate error packets; find out why a node can transmit but not receive;

Overloaded segments, bandwidth hogs, bogged-down servers—who needs that? Track down those users who are constantly downloading graphic intensive files from the Net, or identify heavily used network servers and segments.

tackle broadcast storms; identify misconfigured routers; and track down device failures, bad Ethernet interfaces, and more. As a network manager, "Inspector" is your middle name.

Investigate error packets; find out why a node can transmit but not receive; tackle broadcast storms; identify misconfigured routers; and track down device failures, bad Ethernet interfaces, and more. As a network manager, "Inspector" is your middle name.

VII. Keep Your Network Secure

A network manager should always be on the alert for network security violations. Watch critical servers for repeated failed log-in attempts. Monitor your network for signs of illicit activities such as unauthorized nodes, protocols, ftp downloads or Web accesses.

VIII. Maximize Your Network

Extra bandwidth may be hiding behind configuration changes or software and hardware upgrades! Moving a printer to the other side of the router or upgrading workgroup software could make a world of difference in network integrity. The last thing you need is for your network problems to grow along with the network.

IX. Get the Right Network Management Tools

Every network manager's tool box should include the following essential tools of the trade:

- Network protocol analyzer to troubleshoot and debug at the packet-level.
- Network traffic monitor to diagnose traffic patterns, utilization levels, etc.
- Network alert system to keep tabs on crucial devices and services.
- Network diagramming and documenting program for an up-to-date perspective.
- Echo/ping/send packet utility to check machine status or network response time.
- Name-to-address mapping utility to keep the network familiar.
- Remote management utility in order not to be tied down to a console.

X. Upgrade Your Network Knowledge

Whether you are new to network management or a seasoned expert, many sources exist for learning more about network management. Listed below are some Internet resources for finding answers to your questions and sharing your experiences with other network managers.

Mac-Mgrs Home Page and Mailing List
http://www.mrmac.com/macmgrs.html

ANMA Apple Network Manager's Association
anma-info@anma.org
http://www.anma.org

Net_Troubleshooting Listserver
listserv@aggroup.com

UseNet Newsgroups
comp.sys.mac.comm
comp.dcom.net-management
comp.dcom.servers
comp.dcom.cabling
comp.dcom.lans.*
comp.protocols.appletalk
comp.protocols.tcp-ip
comp.networks.noctools.*
comp.software.config-mgmt
comp.security.*

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Special Edition Using ISDN

by Tom Vernon

ISDN first cropped up in the late 1980s as the next logical step in telephone evolution. Following its debut, it quickly slipped into obscurity, leaving pundits to declare that the initials stood for I Still Don't Network. In the past two years there has been a renewed interest in the Integrated Services Digital Network, an infrastructure for delivering digital signals over existing twisted pair telephone cable. This renaissance is due in part to the passing of the Telecommunications Act of 1996. Although there is still some confusion and kinks in the standards, ISDN is quickly becoming a viable medium for both business and private use. If you lost interest in ISDN a while back, it's time to start paying attention again.

Author James Bryce has written a comprehensive introduction and reference to the topic entitled *Special Edition Using ISDN,* published by Que and retailing for $39.99. The fact that the second edition has come out a little over a year after the first is ample testimony to how rapidly this technology is evolving.

Using ISDN spans 600 pages, divided into five parts that include 20 chapters. Each chapter concludes with a list of related topics and where to find them. Thus, you can read this book in any order and not miss the material you're after. Part I explores the history of ISDN, and explains the fusion of the computer and telephone technology that is driving it. Standards and regulations are also discussed. In particular, the impact of the Telecommunications Act of 1996 is described.

Part II delves into the theory and terminology of ISDN. It explains bandwidth, the distinction between analog and digital communications, defines the Basic Rate Interface (BRI), and explains some of the protocols used by ISDN as the signal travels from your computer to the telephone company (telco) central office (CO).

If you lost interest in ISDN a while back, it's time to start paying attention again.

One of the most confusing aspects of ISDN is the dizzying array of options that are available. Bearer services, supplemental services, and teleservices are all explained. Once you know what resources are available, you'll be able to talk intelligently to telco salespeople, which is the topic of a later section.

Signaling used to mean that your phone rang when someone was calling you. With ISDN, it's a bit more sophisticated. Signaling intelligence, which once resided in the CO, is now distributed throughout the network. You'll learn about DSS1 and SS7, and how they relay your instructions to the final destination.

Application Program Interfaces (APIs) provide the connection between your application and other hardware and software. You'll learn about WinISDN, which provides a means of controlling ISDN for Windows. TAPI provides the same function for Windows 95. CAPI allows ISDN to be controlled by MS-DOS, Windows, OS/2, UNIX, and NetWare environments.

Part III of *Using ISDN* tells about the choices you must make when you set up a system; starting with ordering services from the phone company and continuing with the devices which connect to your computer. There's information on the nuts and bolts, literally, of getting connected. The demarcation point is defined as that place where the telco's responsibility for wiring ends, and yours begins. One chapter tells how to continue beyond it with wiring and jacks to your equipment. Bus and star wiring topologies are described, along with that black box known as NT1.

Having come this far, the next step is to select an external terminal adapter to connect the ISDN line to your computer. These devices are sometimes known as ISDN modems, although that is a misnomer, since the signal coming from your phone line is already digital. Three terminal adapters are compared in terms of installation, configuration, and use. Sort of a mini Consumer Reports, if you will. The next chapter of this book does the same thing for internal terminal adapters.

Some of the most exciting changes in this technology have been in the area of ISDN routers. Just a short while ago, these boxes cost around $1,000 and took a team of dedicated computer science-types to configure. Today routers cost $500 or less, and are set up via a graphical user interface. This trend of falling prices and simplified setup is expected to continue in the future.

Part IV of *Using ISDN* continues with a discussion of some of the issues surrounding Windows 95 and Windows NT use with ISDN. These operating systems arrive ISDN-friendly, suggesting that Microsoft is throwing its not-inconsiderable weight behind this technology.

The next chapter: "Tying it Together: Two B or Not Two B" describes how two or more B channels (the main information carriers in ISDN) can be combined to increase data rates. The topics of BONDING, multilink PPP, and compression are discussed. Much of the turmoil in each of these areas has subsided in recent months.

By this point in the book you've been thoroughly dazzled by the technologies that work together to make ISDN a reality. Author Bryce anticipates that you might also be saying something like: "All well and good, but what can you actually *do* with ISDN besides get really fast computer connections?" The higher data rates, more flexible control, and rapid setup/teardown times open up a world of possibilities, which the next three chapters are devoted to explaining.

One of the most exciting applications for ISDN is video conferencing. The author describes the T.120 General Multimedia Conferencing Standard and the H.320 General Video Conferencing Standard. How these standards play out in the real world is shown by a description of some of the systems now in use. The Vtel system is explored, as well as Intel's ProShare, which operates with its own de facto standard, as well as H.320. Picture Tel is one of the most expensive and elaborate systems available, while CU-SeeMe is available as Freeware from Cornell University.

After reading about things like fast computer connections and video conferencing, it's easy to forget that ISDN started out as a way to improve basic telephone service. It still is! Depending on your needs, you may opt to use your POTS (Plain Old Telephone Service) system with an ISDN line, via an NT1 with an R interface; or you may opt to go ISDN end to end. These options are especially exciting for those working in the SOHO (Small Office/Home Office) world.

From being a tool you use at work, ISDN will probably expand and have more impact on your leisure time activities as well. Some possibilities include: banking and financial market monitoring, low-cost voice communication with children at college and people throughout the world, or video calls to friends and family.

Some of the most exciting changes in this technology have been in the area of ISDN routers. Just a short while ago, these boxes cost around $1,000 and took a team of dedicated computer science-types to configure. Today routers cost $500 or less…

Telecommuting is the rave in today's corporate world. ISDN can have an impact here, but for different reasons than you might think. Recent studies show some personality types perform poorly in the home work environment, namely, the extrovert and sensory types. The enhanced capability of audio and video that are possible with ISDN may bring the telecommuting outcasts into the fold.

The final section of *Using ISDN* gazes into the future. We anticipate broadband ISDN, the successor to today's narrowband implementation. Along the way, you'll learn what's behind terms like SMDS (Switched Multimegabit Data Service), frame relay, and SONET (Synchronous Optical Network).

Many of the changes that ISDN will bring about are due to a shift in the locus of control. With POTS, all control was in the central office. ISDN brings control to the end user, with dramatic implications. The telecommunications revolution presages new ways of governing, doing business, and interacting globally.

Of course, ISDN isn't the only kid on the block. The best known competition is the cable modem, which connects your computer to the outside world via the cable TV infrastructure. It can push data into your home at blazingly fast speeds. Getting data back through the system is another story.

Not to be left out of the speed race, the phone company designed the xDSC technologies to compete with cable modems. Wireless options for high speed data transmission include wireless cable, RBDS (Radio Broadcast Data Service) and satellite.

Three appendices and an annotated bibliography round out this book. The first lists World Wide Web references for standards and organizations, the second provides a list of companies offering ISDN services or products, while the last points out Internet lists of service providers. Among the listings in the bibliography are the usual books and periodicals, but also trade shows, as these are one of the best sources for current information.

ISDN is a technology whose time has come. How it will intermingle with other emerging technologies is anyone's guess. To make informed decisions though, you need a working knowledge of ISDN. James Bryce's book is one of the most comprehensive one-stop references available.

Special Edition Using ISDN
Que
627 pages
$39.99

Tom Vernon is completing his Ph.D. in education at UPenn in Philadelphia. In his nonexistant spare time, he reviews computer programs, CD-ROMs, and books for various publications.

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Atlas to the World Wide Web

A World Wide Web Directory

by Don J. Modesto and Jeff Matsushita

The Internet's World Wide Web offers text, graphics, sound, and video in a format accessible from different platforms. Web pages run the gamut of interests: software updates, screenplays, games, museums, music, and more. Due to its ease of use for both users and publishers, Web growth has been explosive. And HTML, one of the Web languages, is relatively simple. Started in 1990, the Web had grown to 500 sites by 1993; today, there are more than 50,000.

The first time on, you understand the Web's attraction. Mosaic (on the CD) and Netscape—enjoying about an 80-percent market share—are the standard Web navigators. Type or paste in a Uniform Resource Locator, or URL—a sort of Web address—and soon the page appears: photos, text, buttons, and other links. Clicking one of these hypertext links may start a movie, download a file, or take you to another page at the site or another country.

Editor's Note: As of this printing, Mosaic has lost its popularity to upstarts such as Microsoft Explorer. Netscape remains a standard.

Hypertext organizes information in a nonlinear way. A reference to Philip K. Dick leads to *Blade Runner*, which leads to Ridley Scott, which leads to the 1984 Macintosh Commercial, which leads to Macintosh computers, which leads to Steve Jobs. Hypertext provides links—usually highlighted text—that take you to the information. You do not have to close one document and open another as we do with a book.

Atlas

Atlas is a book/CD combo indexing Web sites. The whole book is on the CD: the intros, text, and graphics, plus live URLs. This lets you move through the material using hypertext links on the CD rather than plodding through the book's index for items. The CD itself uses Web software which will familiarize novices with the online experience. The CD archives screen dumps (i.e., snapshots of the pictures on a monitor) of sites so you can see Web pages offline.

At first, *Atlas* Web pages confuse, because screen dumps and actual hypertext links are not distinguished. Some highlighted URLs link; others don't. Not a big problem—an info bar clues you as to live links when dragging the mouse over URLs—but simple boxes would have prevented ambiguity.

Atlas' purpose—cataloging Web sites—will age it quickly. Several URLs are already defunct. Web publishing protocol, however, is such that out-of-service notices can offer forwarding URLs.

Online Web indexes offer more info and are more current than the *Atlas'*. *Atlas* provides a catalog of sites for someone without a clue about the Web, though, and hard copy is easier to skim, too. The book/CD also introduces HTML for those wishing to author pages. Moreover, examples of HTML in use abound as access to the pages' HTML is possible with a word processor.

Atlas to the World Wide Web
by Bob Powell and Karen Wickre
Ziff-Davis Press, 1995
220 pages (paperback) and CD
Price: US $29.95

Pros:
Clear explanation of concepts; introduces HTML; good range of interest areas; CD's hypertext reduces need to use index/table of contents; CD formatted in Web software.

Cons:
Book will age quickly; interface unnecessarily confusing at first; CD doesn't mount smoothly.

Ideal Audience:
Unsupported Web novices.

Don Modesto can be reached at modesto@gol.com or modesto%ringo@fca.cyber.ad.jp. He lives in Tokyo teaching English as a foreign language at secondary and university levels.

Jeff Matsushita lives in Tokyo with his wife, his PowerBook 180, and his LC 475 (not necessarily in that order). His hobbies include trying to convince his wife to let him upgrade to PowerPC and planning a retirement in Bali. He can be reached at toki@io.com.

Atlas' purpose—cataloging Web sites—will age it quickly. Several URLs are already defunct. Web publishing protocol, however, is such that out-of-service notices can offer forwarding URLs.

Que's Mega Web Directory

A World Wide Web Directory

by Don J. Modesto

Reading from phosphorous is a poor substitute for reading from paper in my book … er, so to speak. Thus I have no trouble with the contradiction of using a paper index for digital info: I like being able to browse a book at leisure and mark it up with colors and comments and dog-ears. And that's why I like the *Mega Web Directory*.

Reading from phosphorous is a poor substitute for reading from paper … Thus I have no trouble with the contradiction of using a paper index for digital info: I like being able to browse a book at leisure and mark it up with colors and comments and dog-ears.

To be sure, Yahoo or one of the other Web searchers will give me more up-to-date info, but then I have to play around with key words and sort through the resulting detritus, i.e., I have to wait for the windows to appear and scroll through them. Yuck.

With the *Web Directory*, I just flip a few pages. If I have a CD-ROM player, I can drag the URL to Netscape and be on my way. (I don't, by the way, have a CD player, so the CD will get something of a short shrift here.) The database can be updated. (But why would you do it—the chief benefit of the *Directory* to me is having it on paper. But for those who want it, it's there.)

Though it has a phone book look and feel, the *Mega Web Directory* has 18,000 listed sites. (It would be more accurately called the *Kilo Web Directory*.) Beginning with Adult and ending with Zoology, the table of contents lists almost 90 sections. Government is further broken down into Agencies, Citizenship, Commercial Businesses, Conferences, etc.

The index sprawls 161 pages. Though serviceable, it is marred by numerous errors. Look for Jody Foster, for example, after Washington University Student Union (she went to Princeton). That Boxing would follow SportsLine USA may seem understandable, but why does the Internet Humor Collection follow SPS Beer Stuff, Homebrew Supplies by Mail?

Browsing it, I found a good handful of sites to visit and bookmark. Searching, I came up sort of wanting. MacWorld was there but not MacWEEK, MacUser, MacSense, or MacWay (should I have looked under "poodles"?). It had 34 magazine listings; for mainstream mags, it had *Asiaweek* and *Fortune,* a disappointing selection. Here, Yahoo, et al., definitely have the edge. I've been able to find *National Review, The Economist, New Scientist, U.S. News, Atlantic, Discovery, George, New Republic*, and others that I visit regularly.

But still, what I did discover browsing the *Directory,* I'm glad to have found. Moreover, the nature of the Web is such that the places I do find will have links to others of interest—in which case one could think of the *Directory* as much as a brainstorming tool as directory, per se. If you need a definitive source, this isn't it. You are stuck with the various search engines. But if you want a good foot in the door of the Web and a lot of URLs to explore, *The Mega Web Directory* is a good place to start.

Que's Mega Web Directory
by Dean J. Rositan, et al.
1048 pages (paperback) and CD
Price: U.S. $39.99

Pros:
Concise descriptions of 18,000 sites; CD contains book's contents; can be updated.

Cons:
This book will age quickly, too; CD isn't formatted in browser format; phone book-heft of volume.

Ideal Audience:
Folks who don't like reading online; users more comfortable with TOC's and indices than Yahoo.

Don Modesto can be reached at modesto@gol.com or modesto%ringo@fca.cyber.ad.jp. He lives in Tokyo teaching English as a foreign language at secondary and university levels.

Web Arranger 2.0

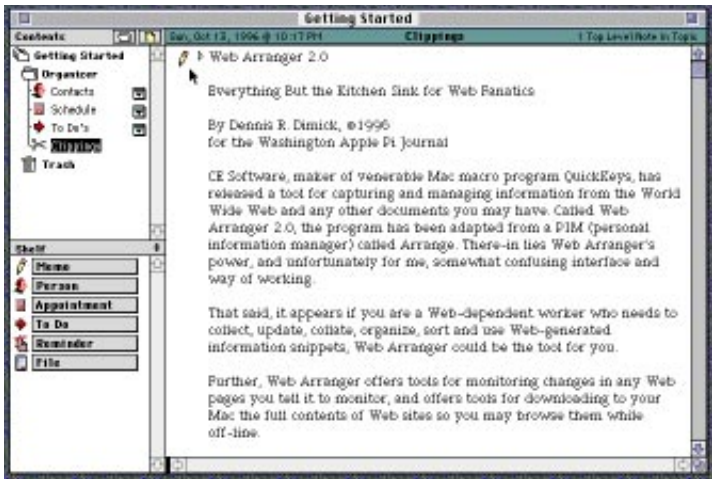
Everything But the Kitchen Sink for Web Fanatics

By Dennis R. Dimick

CE Software, maker of venerable Mac macro program QuickKeys, has released a tool for capturing and managing information from the World Wide Web and any other documents you may have. Called Web Arranger 2.0, the program has been adapted from a PIM (personal information manager) called Arrange. Therein lies the source of Web Arranger's power, and, unfortunately for me, the somewhat confusing interface and confusing way of working.

That said, if you are a Web-dependent worker who needs to collect, update, collate, organize, sort, and use Web-generated information snippets; Web Arranger could be the tool for you.

Further: Web Arranger offers tools for monitoring changes in any Web pages you tell it to monitor, and offers tools for downloading to your Mac the full contents of Web sites so you may browse them while off-line.



The Windows of Web Arranger: Web Arranger presents three windows. Contents at top left provides global organization, the Shelf at lower left offers file type options, and the main window at right is where you process incoming information clippings.

In the Beginning

Web Arranger descends from Arrange, a PIM originally from Attain Software. Arrange, in its original form, attempted to give you complete computer-control over nearly any aspect of a scheduled or "filofaxed" life. Arrange was a personal contacts database, and an appointment and calendar program. All these talents have been brought to Web Arranger with some Web-specific tools tacked on to make this a formidable toolset to learn and use.

Web Arranger arrives on three floppy disks accompanied by two small manuals. CE Software advises a trip to their website (www.cesoft.com) to get the in-depth documentation on Web Arranger. There, in electronic form, is a 1.7 meg downloadable manual in HTML format. You can't read it in Web Arranger, though, you'll need a separate Web Browser to do that.

The Web Arranger package includes Internet Config, a shareware utility for configuring helper applications. This is so your Mac will launch an appropriate web browser and go to the desired site when you click on a URL in your Web Arranger database, for example. This also applies for ftp and mail functions you activate through Web Arranger via Internet Config.

Contents, Shelf and Page Windows

Web Arranger presents a working area on screen with three separate windows. They include Contents, Shelf, and Page. The three-window Web Arranger environment completely takes over your Mac's monitor, and takes some getting used to since it has a somewhat different look and feel from other Mac programs.

The Contents area looks like a Mac Finder window in "View by Name" with all folders open and showing their contents. Web Arranger's Contents window helps you keep track of activities, including personal data and information from and about the Internet. Everything in the Contents window comes as a folder or an item, and there is even a trash can for tossing items you don't want.

The Shelf window defines what types of information items you can work with. These include URLs, Headings, To-Do, Memo, People, Pictures, and Files. Once you create new folders and topics in the Contents window, you use the Shelf window to define what kind of item you want under each topic.

The largest window on screen is the Page. This is where all new items in the program show up, and it's the Page window where you begin organizing new information. You can drag and drop information within Web Arranger between the Page, Contents and Shelf windows. Please note, you can't drag and drop information into and out of Web Arranger in the manner the Mac OS allows. This is said to be coming in the next version of Web Arranger.

Grab What You Can

Two intriguing components of Web Arranger are the Grabber and Web Whacker. Integral to Web Arranger, the

Online Manual: If you want to get the detailed scoop on Web Arranger, go to CE Software's Web site, www.cesoft.com, to download the full user manual. You will need a separate browser program to read Arranger's manual.

Download Now, Read Later: Web Whacker, from the ForeFront Group, is an accessory program to Web Arranger. It allows you to download to your Mac the contents of any Web site you choose for off-line viewing.

Grabber allows you to save selected text and graphics to a "clippings" file while browsing the web. All you have to do is select the text or graphics to be grabbed and the Grabber will do just that, even if Web Arranger is not running. (That is, once you can figure out the needed key sequence to activate Grabber. Buried deep, somewhere, I found "Cmd-Cntrl-Opt-Shift-G.")

The idea is great but Grabber only allows one clippings file, at least from what I could discern. I must admit documentation for Web Arranger is so sparse it took me nearly an hour of searching to determine if it's possible to create separate clippings files for discrete projects. Apparently not.

You must throw all Web clippings into one pile then go back and separate them out to different projects. I'd rather be able to create separate clippings files in the beginning so grabbing and sorting can be a one-step process. But that's just the way I'd like to work and may not apply to how you might do it.

Mowing the Web

Web Whacker, created by the ForeFront Group, is an accessory program to Web Arranger. It allows you to capture the contents of a web site to your hard drive and later view them off-line. You can determine in advance how many layers deep you want to go. Just give it a URL to go after and Whacker will harvest the site automatically.

I tried Web Whacker on the www.adobemag.com site, going four levels deep. The resulting folder had 70 megs of data in it, and took about half an hour on a T1 connection. I must admit a bit of unease using Web Whacker. I can just imagine widespread Web gridlock as surfers start using these high-speed robot data-parasites all at the same time. Programs like Web Whacker are becoming quite the rage in off-line Web browsing. Designed to avoid Web gridlock, these automatic Web harvesters may be partially responsible for the network slowdowns they are designed to surmount.

Like the Web, a Work in Progress

Web Arranger feels like a work under construction. Admirable in scope and prowess, yes, but it's an array of loosely aligned tools that don't yet necessarily add up to more than the sum of its parts. Web Arranger needs Mac OS drag and drop. Despite its focus on the Web, Web Arranger can't open HTML files. An integrated browser would help Web Arranger provide a one-stop Web management solution. Web Arranger imports Netscape bookmark lists, but cannot monitor the state of changes in your Netscape bookmark file.

The calendar and contact management tools are overkill if you already have other software on your Mac for doing this and don't need notification when to visit a site again. Web Arranger's tools for monitoring changes in Web sites are fine, but I can't imagine using this on anything less than an always open TCP/IP link, not a dial-up Web connection.

Web Arranger is not a snap to grasp or master, and you need to spend time with what little documentation it has. I'm of the school that the best Mac programs are the ones you just start using, and along the way, you get the drift of what needs to be done. I can't say that Web Arranger falls into this category.

I don't depend mainly on the Web for business, yet. Perhaps we all will sooner than we think. If you already monitor and use the Web as an integral part of your business or research life, take a serious look at Web Arranger. It offers several useful tools for making the most of Web-based information.

Web Arranger 2.0
Minimum System Requirements
Macintosh computer with a Web Browser, 4 megs of free disk space and 12 megs of RAM installed.

CE Software Inc.
1801 Industrial Circle
West Des Moines, IA 50265
http://www.cesoft.com

BMUG member Dennis Dimick of Arlington, VA can be reached via Internet email: ddimick@aol.com.

©1996 by Dennis R. Dimick.This article previously appeared in the Nov.-Dec. 1996 Journal of the Washington Apple Pi, a non-profit Apple and Macintosh user group with offices in Bethesda, MD.

Getting Online with BMUG Boston

A Guide to Connecting to BMUG's Boston BBS, via the Internet

by Roz Ault, BMUG Boston co-administrator

To connect to BMUG Boston via the Internet, you need two pieces of software:

1. **FirstClass Client** (version 2.7 is recommended; nothing earlier than 2.6 will work).
2. The **BMUG Boston settings** file. Make sure you have the file whose splash screen shows Botticelli's Venus with the tag line "a virtual harbor in cyberspace." (You can copy and modify another settings file, but it will be easier to start with the correct one.)

Double-click on the settings file to open it, and follow these steps:

1. **Login screen**. Don't type anything on this screen. Click on the **Setup** button (Figure 1).
2. **Setup screen**: Select **TCP-IP.FCP** from the "Connect via" popup list. (Note: If you are dialing in directly, you would select Modem.FCP here. You can switch back and forth between modem and TCP settings if you wish, simply by changing this popup selection.)

Type your User ID and password (you make these up yourself, but please remember exactly how you type them) in the appropriate boxes.

Make sure the IP number is entered as shown. Or, in place of the number, you could enter the server name: **bmugbos.org**

Click the **Save** button. Then, click on the **Setup** button at the top of the screen (Figure 2).

3. **TCP-IP.FCP setup**: Click on **Advanced Settings**, and be sure the TCP Port is set to **3004**. Then click the **Save** button (see Figure 3).

THIS IS VERY IMPORTANT: If you do not save port **3004** in your settings, the BBS server will not allow you to connect!

4. Initiate your local Internet connection (e.g., connect via PPP).
5. Once connected to the Internet, press the **Login** button on the FirstClass **Login** screen (Figure 1). You will be connected to BMUG Boston, if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection, and network traffic conditions.
6. If you are a new user on BMUG Boston, you must fill out the registration screen with your complete name and address as they appear in the BMUG records.
7. Once at the FirstClass Desktop, you must open the NewUser folder and

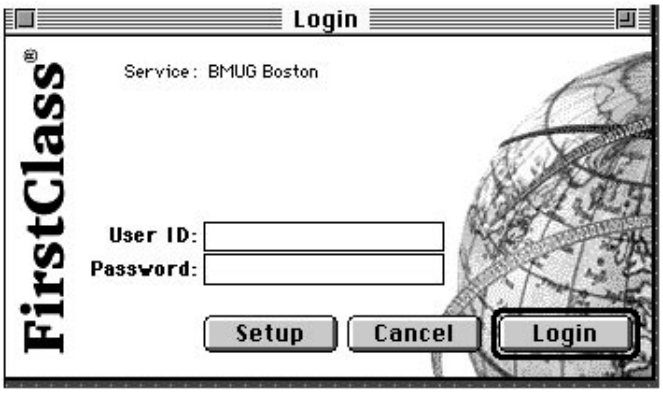


Figure 1. BMUG Boston login screen.

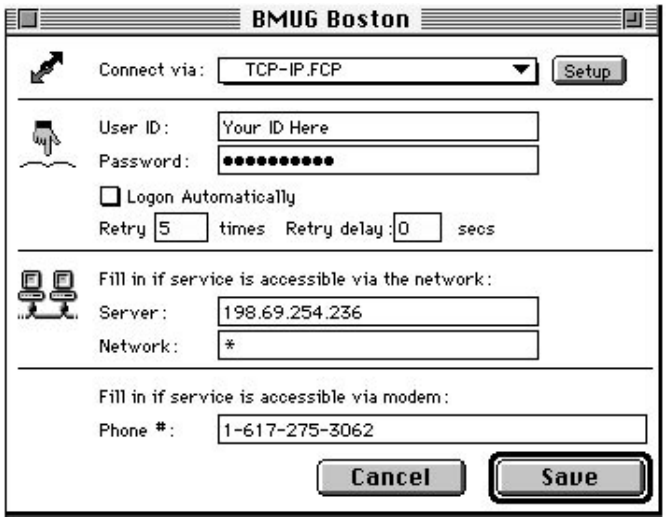


Figure 2. Connection setup screen.

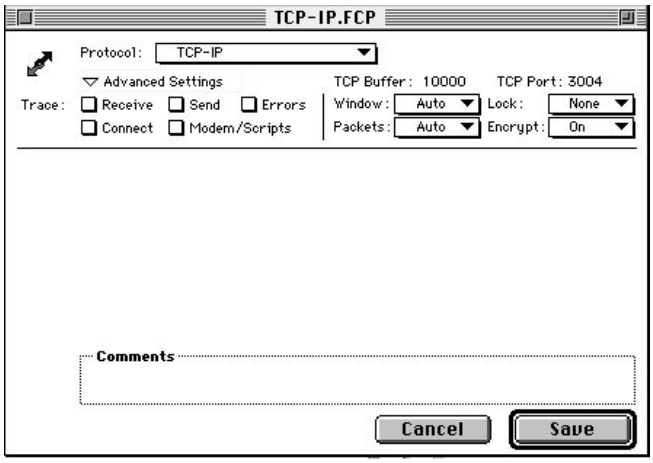


Figure 3. Advanced Settings screen.

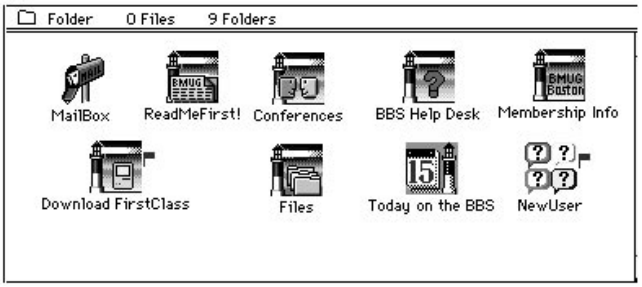


Figure 4. New User desktop on BMUG Boston.

respond to the message: "New Callers: Read and Reply." If you do not respond to this message, you will not be validated, even if you are a BMUG member in good standing. Note, too, that your BMUG membership entitles you to a membership on one BMUG BBS. If you already have a membership on Planet BMUG, you may sign up for a BBS-only membership on Boston if you wish to maintain accounts on both systems.

Connection Notes:

You must have a PPP, SLIP, or better connection to the Internet. "Internet access" offered by online services such as America Online will not work.

BMUG Boston has six direct dial-up lines, accessible via modem. We hope to have all our modems running at 28.8 kbps by the time you read this. As of Fall 1995, the configuration is as follows:

(617) 275-3062, 3063, 3064 - 14.4 kbps

(617) 275-3065, 3066, 3067 - 28.8 kbps

BMUG members in New England who do not yet have direct Internet access may want to look into the BMUG discount offered by The Internet Access Company (TIAC) of Bedford, Mass. (where the BMUG Boston server is currently located). TIAC maintains local numbers throughout New England, and in New York City. More information is available on the BMUG Boston BBS.

The BMUG Boston conference moderators are:

- Brad Ball—Internet Q/A
- Howard Berman—Communications files
- Beth Carroll—Books conference
- Karl Eklund—Beliefs conference
- Dee Forsythe—Sports conference
- Stu Fried—Pets, Software-General, Misc Computers, Sci-Fi & Fantasy
- Bill Gerber—Genealogy files
- Noel Gouveia—Fonts files
- Duane Harris—Multimedia files
- John Hayes—Internet Q/A, Vintage Macs
- Ilene Hoffman—Meetings
- Robert Huntington—Medical & Transportation conferences; BMUG Booster Extraordinaire
- Steven Klinke—Information files
- Vance Koven—National Politics
- Simen Lange—Games
- Kevin Lesniewicz—Demo, Graphics, System Enhancements files; New Uploads File Manager
- Neil Maller—Moderator at large
- Kadari Mayson—Filmmaking conference
- Jeff Mayes—Theatre conference; Software Updaters
- Lee McCanne—Music/MIDI files
- Tom McGee—Internet mailman; Radio, Weather
- Jim McKee—Business files; Buy/Sell/Swap
- Pam Niedermayer—Newton conference and files
- Bob Ostwald—PowerBook & Compression files; Music
- Perry Paolantonio—Filmmaking
- Gordon Perry—Astronomy conference
- Dennis Piechota—Art Talk
- Deborah Pulliam—Fiber Arts
- Nicholas Riley—Modems
- Glenn Rosen—Programming files and conference; Travel
- Cathy F. Rudolph—Membership & Validations
- Chuck Scheffreen—Utilities, System Enhancements files
- Ira Seskin—Education, Misc Computer, Bay State Chat, Outrageous Stuff, Games, FirstClass files
- Steve Semple—Desktop Publishing, National Politics
- Jack Sheehan—Beginners & System Software conference
- Becki Sherman—File manager; Donations coordinator
- John Smith—AccessABLE files
- Rodney Smith—Iguana Keeper and Sysop of All Trades
- Daniel J. Wallace—Jobs, National Politics, Civic Archives, Sports, HyperCard files, Outrageous Stuff
- David Walsh—Hardware, Sci-Fi & Fantasy conference
- Susan Williams—Movies, Television, and Good Eats conferences
- Vedder Wright—Internet Q/A

BMUG Boston BBS

Frequently Asked Questions (FAQs)

by Roz Ault, BMUG Boston co-administrator

1. Is BMUG Boston's BBS an exact mirror of Planet BMUG in Berkeley?

No. We share many (but not all) conferences, and the file areas are completely different. Of course, we have many of the same files online, but all the Boston files are uploaded locally.

2. If I have an account on Planet BMUG, can I get one on BMUG Boston too?

The only way to have an account on both BMUG systems is to buy an extra BMUG membership. BMUG has to pay SoftArc a license fee for every BBS account, so only one account comes with each membership. Please don't create an account on BMUG Boston if you already have a Planet account, unless you want to cancel your Planet account (or buy a second membership).

You can log on to Boston just to look around, but your account won't have email and download privileges, and will be deleted at the end of the day.

3. Why is it sometimes hard to get on to BMUG Boston?

If it's Sunday morning, you often won't get a connection, because the system may be off-line for backup. It's almost always up again by mid-afternoon.

Other times, if you're dialing in and get a busy signal, it probably just means all the lines are busy. Keep trying, or call back later.

If you're having problems getting in via the Internet, the bottleneck is most likely with your Internet service provider, or somewhere along the net route. You can try dialing in via modem to make sure the BBS is up and running.

BMUG Boston phone numbers in hunting order are:

617-275-3062
617-275-3063
617-275-3064
617-275-3065
617-275-3066
617-275-3067

The first 3 numbers as of fall 1996 are 14.4 kbps; the last 3 are 28.8 kbps. All 6 numbers should be 28.8 before the end of the year.

Incidentally, if Boston-area folks want to call the modem lines (rather than accessing the BBS via the Internet), you should check with Nynex / Bell Atlantic to make sure that the number is in your free calling area, and/or to find out about different levels of telephone service. The BMUG Boston BBS is located in suburban Boston on the Bedford/Lexington exchange.

4. When I tried to connect to BMUG Boston over the Internet, I was told that I didn't have permission to connect via TCP and that I must use a modem. Why?

You need to adjust your port setting. Open up your BMUG settings file and, from the Login window, click on the Setup button. In the Service Setup window that appears, next to where it says **Connect via TCP-IP.FCP**, click on the Setup button. In the next window, click on a little triangle next to **Advanced settings**. There, set the TCP Port (which is in the right upper corner) to **3004**. (See Figure 1.) Sorry, this is the SoftArc way of doing it; we don't like it any better than you do!

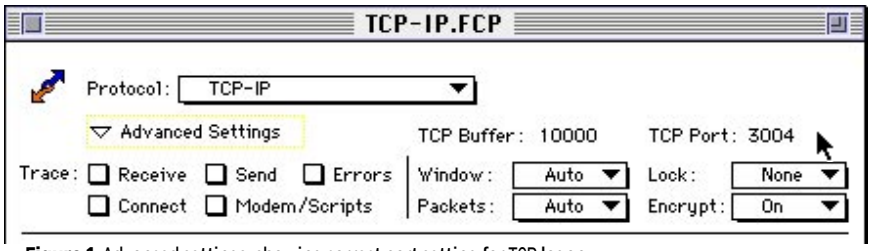


Figure 1. Advanced settings, showing correct port setting for TCP logon.

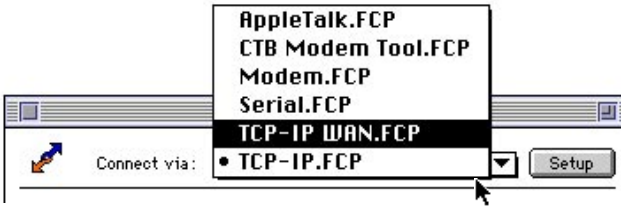


Figure 2. Selecting TCP-IP WAN.FCP from the Connect via ... window.

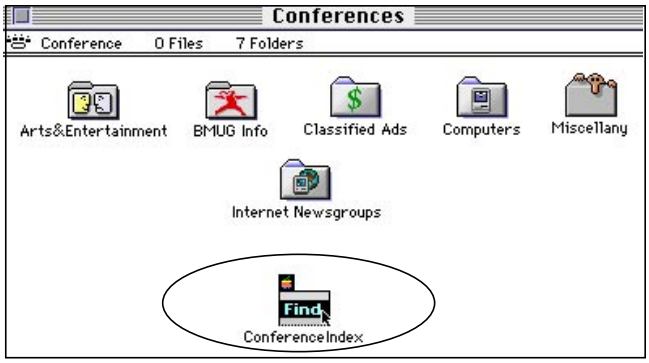


Figure 3. Conferences folder window, showing the location of the Conference Index.

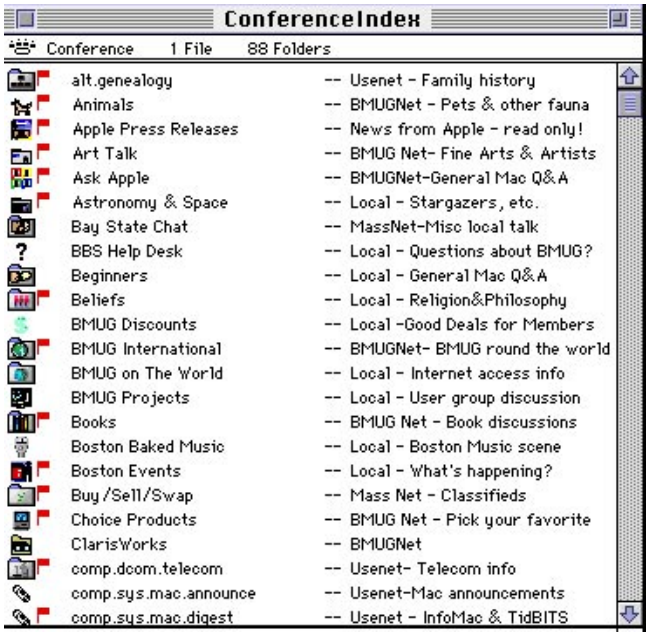


Figure 4. What you see when you open the Conference Index folder – an alphabetical listing of all the major messaging areas on BMUG Boston.

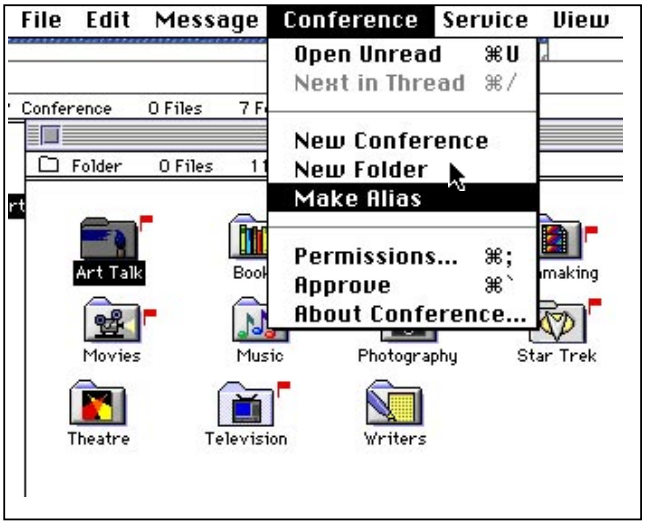


Figure 5. Making an alias of a highlighted folder, so that it will appear on your desktop. (You may want to alias the Conference Index folder for easy access.)

An easier way of doing this is to pick the TCP-IP WAN.FCP choice from the popup **Connect via:** menu on the first Setup screen, if it appears in your version of the Client software (Figure 2). This should automatically set the port to 3004.

For general instructions about signing on via the Internet, see the News folder on your Desktop.

5. There are so many conferences here, I get lost trying to find my way around.

Use the Conference Index (Figure 3), which is just inside the Conferences folder. The index contains an alphabetical list of all the conferences on the system that are devoted to messages. This will give you a good overview of the topics available (see Figure 4 for a sampling).

Once you decide what conferences you are most interested in reading, you can make aliases of those conferences on your desktop, so they're right out at the top level when you log on. To do this, highlight the conference and select **Make Alias** from the Conference menu (Figure 5). You can also create one or more folders on your desktop or inside your mailbox to store these conferences, and keep your desktop neat.

File areas are not listed in the Conference Index but are easily accessible from inside the **Files** area, which includes its own index folder. You may also alias individual file areas to your desktop.

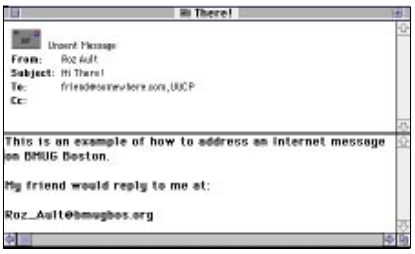


Figure 6. Sample message addressed to someone on the Internet.

We suggest that all members read the messages in the **News** folder and **Today on the BBS** in order to keep up with topics of general interest.

6. How do I send a message to an Internet address from BMUG Boston?

Enter the Internet address in the To: field of a message. Then add a comma and the word UUCP after the address.

For example, if your friend tells you his email address is *friend@somewhere.com*, you would address his mail like this (see Figure 6):

To: friend@somewhere.com,UUCP

> Note that BMUG Boston uses a different form of address from Planet BMUG, where the suffix is Internet, not UUCP.

Someone who wants to send you mail from the Internet should address it to your_name@bmugbos.org. For example, if your name is Thomas Jefferson:

Thomas_Jefferson@bmugbos.org

Usually, it's okay to omit the middle initial when addressing mail (unless, for example, we had a Thomas A. Jefferson and a Thomas X. Jefferson on the BBS).

7. How often does Internet mail get delivered?

Private mail (both inbound and outbound) is transferred through the gateway to our Internet mail server 3 times an hour, around the clock. The mail server then routes the messages on to their final destination. This trip can take anywhere from a few minutes to several hours, depending on the routing traffic, status of interim servers, etc. If there is any change in this schedule, it will be announced in the News folder.

Note that we have no control over the Internet mail once it leaves our system. You can check the history of a message to see if it has been routed, but you can't find out whether the person on the other end has actually received it. Usually if the address is not deliverable, you will get a notice back in your mailbox.

The Internet newsgroup messages are transferred mostly at night or early morning to save money.

8. Am I allowed to use file transfers or mailing lists over the Internet?

No. BMUG's Internet gateway is for person-to-person correspondence only. File transfers are not supported, and subscribing to mailing lists is prohibited.

The reason for this is that the FirstClass architecture bogs down under the volume of messages received from most mailing lists. BMUG does subscribe to some mailing lists that are of general interest to many of our members, and posts them in a public area for everyone to read.

As for file transfers, FirstClass doesn't handle them well, and attached files often crash the Internet gateway, meaning that no mail can get in or out. If you try to send a message with a file attachment, it will never leave BMUG Boston. You can paste up to 32K of text into any message.

9. How do I send mail to a member of Planet BMUG?

Enter the person's name in the To field and add a comma and the words Planet BMUG afterwards. For example, to send mail to Ada Lovelace on Planet BMUG, address the message to:

Ada Lovelace, Planet BMUG

If you use a name that is not in the directory at Planet BMUG, you will get a message telling you that the mail was not deliverable.

Note that we don't normally allow file attachments on messages going to Planet. If you need to send a file to someone on Planet, please send a message to Administrator first.

10. How can someone who is not a BMUG member and doesn't have a copy of FirstClass get on to BMUG Boston to see if they want to join?

If you have an Internet account, you can connect to the BMUG World Wide Web sites to download the software and instructions:

for Planet BMUG: http://www.bmug.org

for BMUG Boston: http://www.xensei.com/users/bmugbos/

Or you can call the BMUG BBS with any telecommunications software (such as the Shareware program ZTerm). If you use ZTerm, be sure to turn OFF autolinefeed.

Once you have connected and filled out your registration, select the option for "Download FirstClass," then select the option for FirstClass graphic software. We recommend that you use Zmodem protocol for downloading, since it will let you resume a download if it gets interrupted.

If you are not a BMUG member, you should select the New User option, fill out a membership form, and post it to Boston Orders. It may be easier to call back with the FirstClass graphic software to submit your membership order.

11. Is there someone I can call in Boston if I have questions about my membership?

No, BMUG does not have an office or a voice number in Boston. All our activities in Boston are run by volunteers, and we don't have the facilities to take phone calls. You can call the office in Berkeley (510-549-2684) and leave a message to have someone call you back.

12. How long does BMUG Boston keep messages on the system?

Most private messages are automatically deleted from BMUG Boston after 21 days. Public messages in conferences are kept for different amounts of time; the average is between 14 and 30 days. (Note that BMUG Boston can keep messages for a longer period of time than Planet BMUG because we have a smaller number of users, so the total number of messages on the system is not so large.)

13. How come the flag was up on my mailbox, but no messages were inside?

If you don't log on for more than three weeks, you may see a red flag on an empty mailbox. That means you did have messages, but they were removed by the automatic "trash collector."

You can help us keep the system running smoothly by regularly deleting from your mailbox messages you have finished reading, as well as the copies of messages

[S]ubscribing to mailing lists is prohibited. The reason for this is that the FirstClass architecture bogs down under the volume of messages received from most mailing lists. BMUG does subscribe to some mailing lists that are of general interest to many of our members, and posts them in a public area for everyone to read.

Figure 7. The Save command on the Message menu. Please delete your Mailbox messages from the BBS after you save them to your hard drive.

Figure 8. The Preferences window. Do not check "Show only unread" when looking for old mail.

Figure 10. Searching the New Uploads file area.

Figure 11. Two folders you should read regularly!

you sent. This is important because FirstClass does not use disk space efficiently, and too many old messages can overload the server and eventually cause crashes.

You can save any messages you want to keep on your own hard drive; just open the message and Save from the File menu (Figure 7).

To delete old messages, you'll need to be sure that Show only Unread is not checked under Edit ... Preferences (Figure 8).

14. I can't use mail forwarding, and I'm not able to set my preferences to automatically forward or respond to my mail. Why?

We have turned off mail forwarding and auto-reply because they eat up lots of disk space and are potentially hazardous to the health of a server with our volume of mail. If you want to send a copy of a message to someone else, you can copy and paste the text into a new message.

15. I signed up for membership, but I never got any acknowledgment, or a membership number.

BMUG doesn't currently use membership numbers; we track members only by their name, address, and expiration date. In order to keep our membership fees low, we don't do many mailings. You will know that you've been validated as a BBS member when the New User folder disappears from your desktop, and you can send mail and download files.

16. Why did the BBS treat me as a new user, when I already have an account?

Probably you haven't used your account for a long time, and it expired. You have to log on at least every 120 days, or the system will delete your account. Possibly you entered the wrong user ID or password. Be sure you write down your user ID and password in a safe place, so you don't have problems logging on if your settings file is lost or corrupted.

17. If I'm looking for a specific file, how do I find it? Searching doesn't seem to work.

Unfortunately, we had to disable searching through the File area as a whole, since it slows down the system so much for everyone else online. You can search within individual folders. If it's a new file, search the New Uploads folder (see Figure 10). Otherwise, try to figure out which subject area it would be in, and search in there.

If you still can't find what you're looking for, post a message in the File Talk/Requests folder and ask for help.

For more information, please check the **News** folder, and the **BBS Help Desk** (Figure 11) on your FirstClass Desktop. You can post questions about using the BBS in the Help Desk folder. For general help with problems about software, hardware, or modem connections, please use one of the Computer conferences (from your FirstClass Desktop, select Conferences, then Computers).

18. Does BMUG Boston have classes and meetings?

BMUG in Boston is an all-volunteer effort, so the answer is: BMUG will have meetings and classes if volunteers want them enough to make them happen. Any Boston members who are interested in organizing projects such as meetings or classes should get in touch with the BMUG Executive Director in Berkeley. There is a folder inside the Membership Info conference on the BMUG Boston desktop, where you can leave messages for the BMUG ED.

General Code of Conduct

Everyone *Must* Read This!

Welcome to Planet BMUG!

Planet BMUG is a private bulletin board supported by BMUG and run by staff and volunteers (moderaotrs & filesysops). It is not open to the general public, but all basic services are offered to current BMUG members by courtesy. Each member's account must be used only by the member himself/herself. Aliases and handles are not allowed.

Planet BMUG is operated for educational purposes, and offers many discussion areas, libraries of publicly distributable files, and personal mail facilities between online users. In addition to information on BMUG-sponsored events and activities, it is a place to exchange the latest information and opinions in diverse areas, in particular the computer and technology world. It is also a great place where members can find help from each other with technical and nontechnical questions.

This BBS is accessed by users of all ages with diverse backgrounds and interests. Please keep all discussions civil and courteous, and "G"rated. For some conferences (message areas) we have moderators who help maintain the discussions pertinent and enjoyable. Please do not hesitate to ask for help, and follow the moderators' guidance.

The Planet BMUG administrator cannot and do not monitor the contents of all messages, chats and files on Planet BMUG, but the administrator reserves the right to take any necessary measures including deleting the account of any user who subjects others to harassment, engages in illegal activities, or other activities online that can be harmful to the smooth operation of Planet BMUG. Illegal activities include, but are not restricted to, the exchange of software that is not publicly distributable, and the unauthorized use of another person's Planet BMUG account.

All of us administrators, moderators and other volunteers try our best to keep Planet BMUG an enjoyable place and a useful source of information. However, we can't be responsible for what you do with the information or files you may obtain here.

There are online manual files for the Macintosh FirstClass Client software inside Planet BBS Q/A. Please refer to them first whenever you have questions about using your client software. Other questions related to using Planet BMUG BBS can be posted inside Planet BBS Q/A directly.

Important news and announcements regarding BMUG or Planet BMUG are posted in various conferences online from time to time. Especially, you must always read at least the messages in BMUG Central & System Bulletins for latest news on changes in the BBS and its operation, and follow the instructions there.

Please bear in mind that Planet BMUG is run on a very tight budget, and depends on the contributions from users and volunteers. We cannot provide all the services we would like, but we welcome any ideas for improvements.

We hope your visits to the Planet will be a pleasant experience.

100 Days Policy

If you do not login to Planet BMUG at least once every 100 days your account is automatically deleted by the server and you'll have to send a messages to the "Request Validation" conference and have your account re-validated.

Internet Email Usage Policy

We apologize that we must inform our members that Planet BMUG's Internet connection is offered only for personal communication. We realize that this is a new policy, but it must be put in place because listservs (which also includes weekly digests of listservs), the transfer of a large number of messages or files requires large amounts of hard disk space and extends the connect time of our internet gateway which can cause the internet server to crash as well as slowing down Planet BMUG.

Planet BMUG is *not* for transferring/forwarding files, sending/receiving large amounts of messages, or listserv (which also includes weekly digests of listservs) messages. Communicating with any kind of machine accounts (such as listserv) is *not* allowed as it requires large amounts of hard disk space and extends the connect time of our internet gateway. This will *not* change now that members can connect to Planet BMUG via TCP/IP unless otherwise notified here in System Bulletins. Once again we'd like to offer our sincere apologies for this limitation.

In the meantime, we ask you please do not subscribe to any listservs, and try to limit the number of personal email messages sent per day. We'd like to express our gratitude to the membership for your cooperation, understanding and assistance in this matter. Violators of this policy will receive one warning from the Administrator and will have one month to unsubscribe from the listserv before any additional action will be taken. If after a month has passed the member in violation of BMUG's Internet Email Usage Policy is still receiving messages from the listserv they'll receive a phone call from the Administrator to discuss the situation. Failure to unsubscribe from listservs after receiving a warning and a phone call from the Administrator may result in the deletion of your Planet BMUG account.

NO Psuedonyms Policy

One of BMUG's few guidelines for online etiquette (following closely on the heels of 'be nice' and 'it's a pg-rated experience') is 'no pseudonyms.' This means that everybody on Planet BMUG uses their real name... no initials, no nicknames, no handles, no 'but that's what i use on aol', etc.

There are exceptions, but they are resolved on a case-by-case basis by the Planet Administrator and BMUG's Executive Director... we made an exception for someone who was being stalked, for example, and rejected several requests for online gender concealment.

Message Expiration Policy = 9 Days

All messages created from now on will expire in 9 days whether they are in your mailbox or in a conference. (Some conferences are set to a longer expiration as exceptions.)

Please delete all mail messages in your mailbox as soon as you finish reading them, without waiting for them to expire automatically after 9 days. If you have "Show only unread items in conferences and mailbox" item checked in the Preferences… setting (under the Edit menu), please turn it off temporarily and delete all read messages from the mailbox. You may be surprised how many old files you are keeping around!

Clean Mailbox Policy

All of us at Planet BMUG are very proud of the enthusiastic responses that our users have shown since we went online. Many thanks to all the members that made this BBS such an active and lively one.

A consequence of such an overwhelming amount of BBS activities is that the system is growing very fast, and it is quickly approaching certain limits inherent in the Mac operating system and FirstClass. To prevent disastrous crashes, we ask all users to keep the amount of mail in the private mailboxes at the minimum. Once you send a message, please delete the copy that remains in your own mailbox immediately. Once you read the mail you received, please delete it immediately without waiting for it to expire automatically in 9 days.

It is very important to the system's health that each of the 3,600+ users on our system do this every time they log on.

We hope that everyone will understand the situation and cooperate in keeping the Planet a lasting enjoyment. Thanks.

Multiple Accounts Policy

If you have a *validated* account on Planet BMUG and you see the auto-registration screen when you login, Please do *not* fill it out again! Every time you fill out the auto-registration screen you create another account on Planet BMUG, having multiple accounts effects on your email. If you have multiple accounts and someone sends you email from AOL, CompuServ, CCNet ect... the server will *not* know which account to send the message to, as a result the server will return the message to the sender. If someone on Planet BMUG sends a message addressed to you and you have multiple accounts the directory window will pop up, your name will be listed twice (or more) the sender forced to choose one of the names has no way of knowing which account has been validated.

To look yourself up in the Planet directory type command-l (L) to see if you have inadvertently created multiple accounts. If you have create a second account please send a message to Administrator stating you have an extra account and it'll be delete ASAP!

Online Etiquette Policy

One of the primary purposes of Planet BMUG is to encourage the exchange of information and viewpoints. To help ensure your peaceful co-existence with the thousands of other BMUGers who are also online, BMUG has established the following Rules of Online Etiquette for users of BMUG's BBS's (Planet BMUG, BMUG Boston and BMUG Japan). Please read and follow them.

Guideline #1

Planet BMUG is a family-oriented Bulletin Board Service (BBS). Please do not post words or images commonly considered obscene.

Guideline #2

Personal attacks of any kind are expressly prohibited on Planet BMUG. Do *not* engage in personal attacks or cast aspersions, either publicly or privately directed at an individual or group. Hostile or aggressive posts will put your Planet BMUG account and BMUG membership at risk.

Remember, you are responsible for the words you type. If you want to retract something, you can always delete your own messages from any conference.

BMUG's administrator, global approvers, moderators and filesysops help enforce these rules, so please contact them with any questions or comments.

The Planet conference moderators are:

- Art Talk—Sam Penrose
- Bay Area Weirdness—Andy Brooks
- Bay Mac Women— Karin Hart and Hoai-An Truong
- Bay Community Events— BMUG Staff
- BMUG International—Michael J. Angell
- Books —Global Approver
- Buy/Sell (Hardware)—Kevin Fox
- Buy/Sell (Non Comp)—Kevin Fox
- Buy/Sell (Software)—Kevin Fox
- CAD—Steve Lukrofka
- Calendar MailBox—BMUG Staff and Ed Mechem
- Choice Products—Bob Thyken
- Claris SIG—Thomas Benner
- Computer Consultants—Peter Linde and David Schwartz
- Computers&Musicians—Bruce Linde
- Databases—Glenn A. Bookout and Michael T. Sayn
- Desktop Publishing—Global Approver
- Developers SIG—Gregory H. Dow
- Education SIG—Thomas M. J. Benner
- File Library Q/A—James Conklin
- File Library Requests—James Conklin
- Français—Global Approver
- Freedom Privacy&Tech—Gilles L. Poitras
- Games—Global Approver
- Good Eats—Scott Alcalay
- How Do I Do This?—Global Approver
- Humor—Global Approver
- Hypercard, HyperCard SIG—Global Approver
- Intermediate Mac SIG—Doug W. Bourquin & Kessel Parker
- International News—Global Approver
- Japan World—Global Approver
- Jobs—Kevin Fox
- LesBiGay—Dale Davis and Bob Thyken
- Local Politics—Global Approver
- MacADAM—Global Approver
- MacEssentials-Doug W. Bourquin
- MacWeek Q&A—Stephen Howard
- Miscellaneous—Dave Greene
- Modems—Global Approver
- Movies—Michael P. Ellard
- Music—Alisa Schulman
- National Politics—Tracy W. Woodard
- Network SIG—Global Approver
- Newton—Kevin Fox and Judith Meskill
- New Uploads—Team Filesysop
- NL Articles—Emeline Mann Sanchez
- PowerBook—Tim Holmes
- PowerPC—Ian Crew
- Programming—Gregory H. Dow
- Scripting—Derrick F. Schneider
- Sports—Fred Swan
- Star Trek—Global Approver
- Television—Andy Brooks
- Utilities Conf—Judith Meskill

How to Get Online with BMUG

An Updated Guide to Connecting to BMUG's BBSes via Modem

by chris r. harris, et al.

FirstClass Software Unveiled

FirstClass Client is graphical user interface (GUI) software that is required to connect to any Bulletin Board System running the FirstClass host software.

When you first joined BMUG, you received a disk labeled FirstClass Client (or the CD-ROM disc that came with your Newsletter). This disk/CD-ROM contains FirstClass Client, the software you need to log on to our BBSes. If you did not receive this disk/CD-ROM, call BMUG and request one.

We couldn't fit everything we needed on a single disk without compressing the data, so we've provided it as a self-extracting archive (.sea). Double-click the icon named "FirstClass.sea", and a dialog box will appear that will let you choose where on your hard disk the file will be decompressed. When finished with this operation you'll have a folder similar to Figure 1.

The Settings folder is where you should store settings files. New settings files must be configured for each FirstClass BBS that you call. Downloads will automatically be placed in the Download folder, unless you specify another location when saving them.

Each settings file contains information tailored for specific BBSes, such as special icons created for Planet BMUG, BMUG Japan, and BMUG Boston, sounds, etc. They also store the BBS phone number, your password, UserID, modem settings, and so on.

These settings will need to be configured before connecting the first time.

What's Different about Each BMUG BBS?

Planet BMUG is located in Berkeley, California, BMUG Boston in Bedford,

For Those Who Don't Read Manuals

Here are the abbreviated instructions for connecting to Planet BMUG or the BMUG Boston BBS for the first time. Don't forget you can read the rest of this article for more details.

0. Turn on your Mac and modem.

1. Launch the FirstClass Client application. When it asks you to choose a settings file, select a BMUG Boston or Planet BMUG BBS file. (If you're not sure which one to use, see *What's the Difference?* on the left side of this page).

2. Customize your settings.

• Adjust for your brand/make of modem (see *Configuring Your Settings*).

• Enter your User ID and password (see *User IDs & Passwords*).

• If you are logging in via modem, make sure the phone number is correct and that you have included the area code (and a 1 for long distance) only if required. If you are logging in via TCP/IP, make sure the server name is correct—bmug.org or bmugbos.org —and the port is set to 3004.

• Save your changes.

3. Connect by pressing the Login button.

4. Fill out the Auto-Registration form that greets all new users (see *Connecting for the First Time*).

5. Request validation (this is an important step, please see *Validation* in the main article below). The validation process involves having a Validation Volunteer check your request against BMUG's membership database. Please allow approximately one week for this procedure.

6. Please be patient—BMUG BBSes can be very busy.

Please note:

BMUG's No Pseudonyms Policy

One of BMUG's few guidelines for etiquette (following closely on the heels of "be nice" and "it's a PG-rated experience") is no pseudonyms. This means that everybody on the Planet uses his/her real name—no initials, no nicknames, no handles, no "but that's what I use on AOL," etc.

There are exceptions, but they are resolved on a case-by-case basis by the Planet Administrator and BMUG's Executive Director. We made an exception for someone who was being stalked, for example, but rejected several requests for online gender concealment.

In the meantime, be nice, keep it relatively PG, and help us keep the Planet one of the coolest online resources there is!

Oh, and have fun!

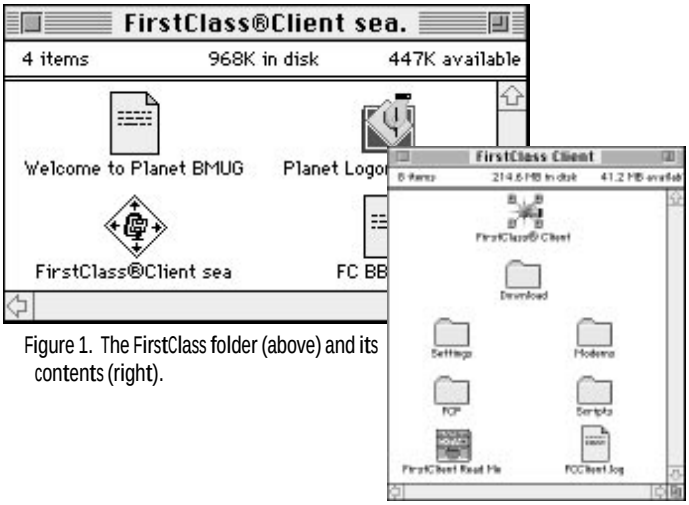


Figure 1. The FirstClass folder (above) and its contents (right).

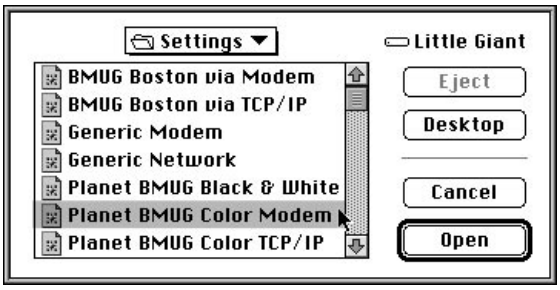


Figure 2. The Settings open dialog box. This is where you choose whether to connect to Planet BMUG or BMUG Boston, in color or black & white.

Figure 3. The Splash Screens.

Massachusetts, and BMUG Japan is in Tokyo, Japan. BMUG Boston, with 11 phone lines and about 1,800 registered users, has a smaller population than Planet BMUG's 15 phone lines and about 4,000 registered users. BMUG Japan is still in development. More information about their BBS is in the article, 'BMUG Japan BBS,' in the Japan News section of this newsletter.

Most of the conferences on the BMUG BBSes are gatewayed, or mirrored, to both sites, so each member should choose which BBS to use based on which will cost less to call on a regular basis.

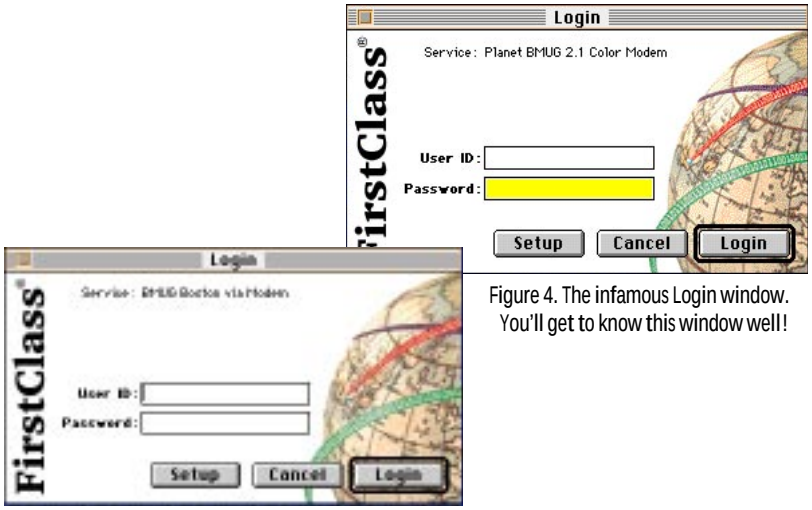


Figure 4. The infamous Login window. You'll get to know this window well!

Configuring Your Settings File and Connecting for the First Time

Step I. Starting FirstClass

Launch the FirstClass Client application by double-clicking on its icon. When you see the Open Settings dialog box (Figure 2), choose the BBS you want to connect to (Planet BMUG or BMUG Boston). You might want to use the black and white BBS settings file if you have a Macintosh that can't display color.

Step II. Splash Screens and the Login Window

The Splash Screen (Figure 3) and the Login window (Figure 4) welcome you to BMUG's BBSes and let you know which BBS you will connect to. We'll set your UserID and password in a later screen. For now, click on the Setup button.

Step III. The Connection Setup Window

After you click the Setup button you'll get to the "second page" (Figure 5) of the settings file. BMUG does not supply you with a UserID and password; you choose these when you first connect to Planet BMUG or BMUG Boston.

UserIDs and Passwords

Unlike some BBSes where users have "handles," users on Planet BMUG and BMUG Boston use their real names—which you'll enter while filling out the Auto-Registration window (Figure 8) when you log in. The UserIDs and passwords are not seen by others and are only used to identify you to the server. BMUG does not supply you with a UserID and password; you may choose any UserID and password you wish, with the following restrictions:

- Once you connect and actually create your account, you are stuck with that UserID. You can, however, change your password whenever you like (and you should, about once a month, for security purposes).

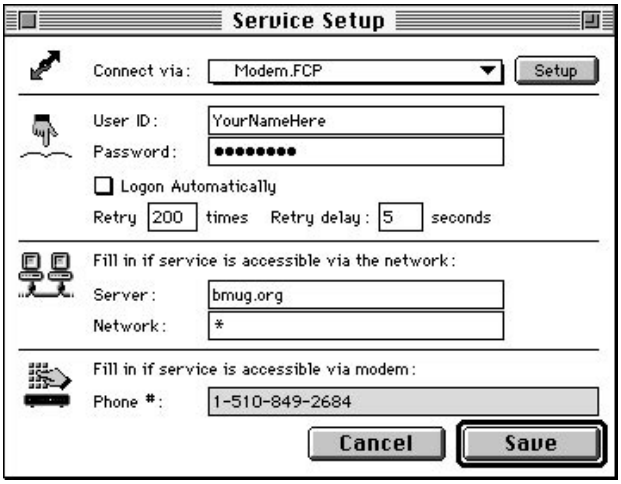


Figure 5: Configuring your settings file.

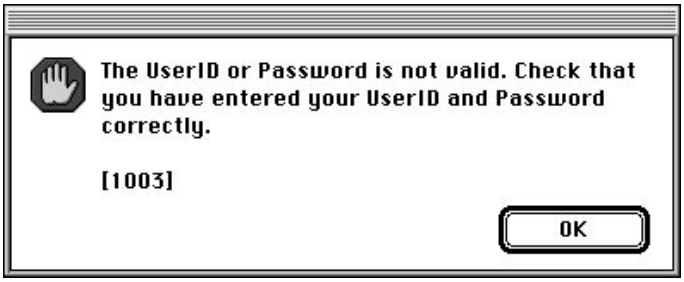


Figure 5A: If you see this message, make sure you are using the right UserID and Password. If your are connecting for the first time it means you need to choose a different UserID.

- UserIDs must be 15 characters or less.
- UserIDs cannot include special characters (i.e. *, &, %, :, etc.); you must use standard numbers and letters only.
- UserIDs must be unique; only one person can use a specific UserID. If you connect with a UserID that has already been taken you will see a message indicating either the UserID or Password are not valid (Figure 5A).

Password Security

BMUG's BBSes are reasonably secure, but here are some ways to make your password harder to guess and your account more secure:

- Choose a password of at least 6 characters.
- Choose a password that can't be found in a dictionary; no real words; mix numbers and letters.
- Choose a password that someone cannot guess. Don't use names, initials, dates, or phone numbers.
- Be sure to memorize your password and keep it secret. Write your password and UserID on a piece of paper and store it in a secure location, not with your computer.

If you type and save the UserID and password in the "second page" (Figure 5) of the settings file, FirstClass Client will store this information after you click Save and close the window. Keep a backup copy of the Planet BMUG or BMUG Boston settings file on a floppy disk (in a secure location) in case you lose the data on your hard drive.

Phone Numbers

Enter the phone number of the BBS you wish to connect to in the Phone number field.

Inserting a comma in the Phone number field will make your modem pause briefly before dialing the rest of a phone number.

BBS Phone Numbers

- If your phone number is inside the (510) area code: 849-2684
- If your phone number is outside the (510) area code: 1 (510) 849-2684
- To turn off Call Waiting for the duration of the call: *70, 1 (510) 849-2684
- If you need to dial a number (represented by # here) for an outside line: dial-out #, 1 (510) 849-2684
- BMUG Boston: 1 (617) 275-3062

Because the BMUG BBSes are so busy you may wish to set your modem to retry 100 times before it gives up. This, hopefully, will enable your modem to connect with a phone line as soon as one becomes free.

Step IV. Service Setup Window

Click the Setup button (Figure 5) to configure the settings to address your modem (Figure 6).

Make sure protocol is set to Serial, the port is set to whichever port your modem is connected to (if you have an internal modem it is connected to the Modem port), and set dialing to whatever your phone company supports; most modern systems use Tone dialing.

Set the baud rate to the highest rate your modem supports (the maximum speed of the BMUG BBSes is 28.8 kbps as of this writing), and turn H/W Handshake on if you have a 9600 baud or faster modem.

The Pop-up Modem Selection Menu

If your modem is not listed in the pop-up Modem selection menu (Figure 7) pick a generic modem such as Basic AT.mdm or Standard 2400. These generic settings may work to get you connected, at which point you can ask for help from BMUG members online. Press the Save button when finished or your changes will not be saved.

Step V. Saving Your Changes

Press the Save button to return to the "second page" (Figure 5) of your settings

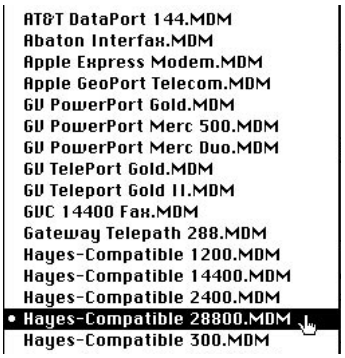


Figure 7: Modem selection menu.

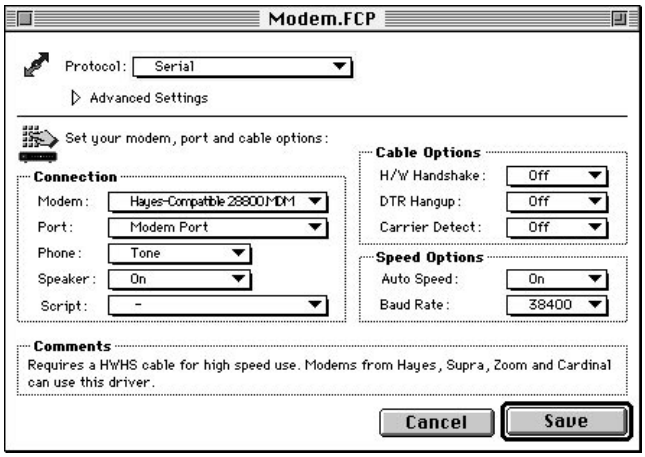


Figure 6: Make sure to select the correct modem, turn H/W Handshaking on if appropriate, and select Tone dialing if you have that service.

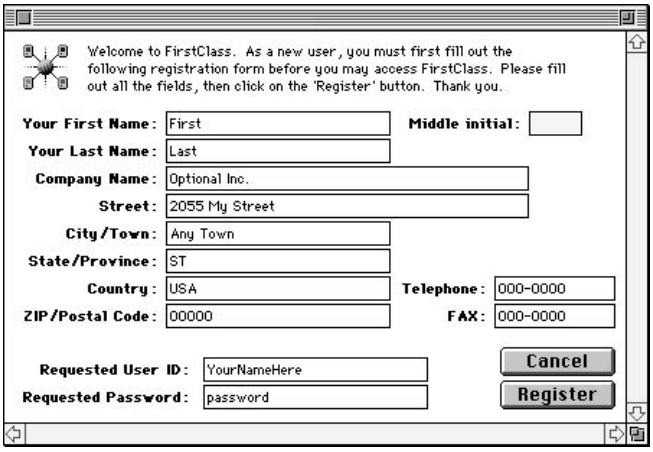


Figure 8: The Auto-Registration window. Take a few minutes to look it over, as there isn't much time to fill it in once you are online.

Figure 9: You made it!

Figure 10: The FirstClass "DeskTop." This is where you find yourself when you connect to the Berkeley-based Planet BMUG. As long as the New User Info folder appears in the upper right corner, you are not yet validated.

file. Click Save and you'll be returned to the Splash Screen (Figure 3). You should now be looking at the Login window (Figure 4). If changes have been saved you will see your UserID and Password; for security purposes you'll see a bullet for each character of your password. Make sure your modem is turned on, and click the Login button. Your settings file will now initialize your modem and attempt to connect with a BMUG BBS. Be prepared to wait while it tries to connect many times, redialing each time it hears a busy signal, until it finally connects.

Connecting for the First Time

Auto-Registration

Look over the Auto-Registration form shown in Figure 8 carefully. FirstClass allows only a few minutes to fill out this information, so be prepared when connecting for the first time. The name you enter here will be the name other users will see on the BBS, and is not associated with your UserID. BMUG does not allow the use of "handles" or pseudonyms, so be sure you enter your real first and last name.

You may wish to omit your middle initial, as it can make things less convenient. For instance, with it your Internet address on the BMUG BBSes would be: firstname_middleinitial._lastname@bmug.org. for Planet BMUG and for BMUG Boston: firstname_middleinitial._lastname@bmugbos.org. This makes it a bit of a pain for others to address Internet mail being sent to you, and seems overly formal on the BMUG BBSes.

You may also want to use your common name, in place of your legal first name. For example, some prefer to be called Bob, rather than Robert. If you want to use your common name online, you must make a note in your Validation Request message.

Once you've filled out the Auto-Registration screen, click the Register button. You'll get a "Registration Confirmed" message (Figure 9). If not, retry the steps. If it still won't work for you, you may want to call the BMUG Helpline at (510) 540-1742.

Once you get online (Figure 10) go to the Request Validation folder located in the upper right hand corner of your Planet BMUG desktop and read "How to Get Validated - Step by Step Instructions (Figure 11). You must read and follow the instructions in How to Get Validated - Step by Step Instructions"; as a new user on Planet BMUG you're only allowed to send messages from within the Request Validation folder (Figure 12)!

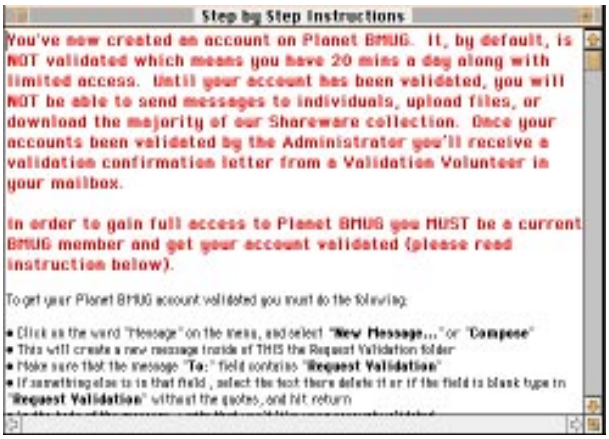


Figure 11: Please read this!

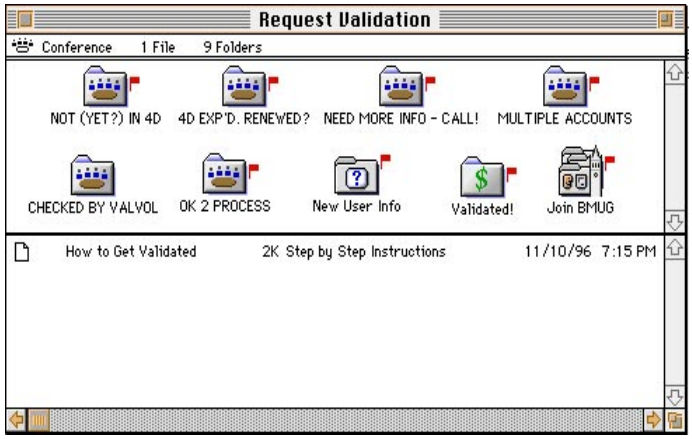


Figure 12: Validation must be requested from within the Request Validation folder only.

Figure 13: You can select New Message… from the Message menus. Choose Send to get your message to where it's going. With version 2.5 you can even unsend a message!

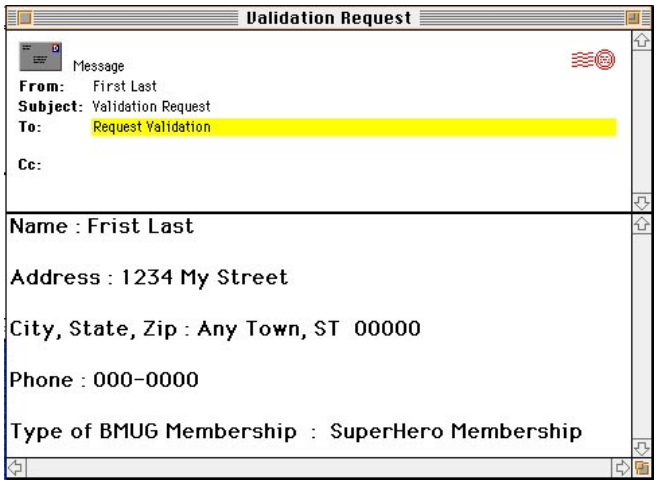


Figure 14: Requesting validation is this easy! 'VV' refers to our fantastic Validation Volunteers; they work many hours to keep up with the hundreds of validations requested each week.

To Request Validation

On Planet BMUG, open the Request Validation folder located on your Planet BMUG desktop and read "How to Get Validated - Step by Step Instructions". Create a new message by typing Command-N, or by choosing New Message from the Message menu (Figure 13).

Type "Requesting Validation" in the subject field. In the body of the message (below the heavy black bar, Figure 14), please type your name, the primary name of the membership (for family or business memberships) your membership expiration date, daytime phone number(s), membership type (e.g., family, hero, business), and "Please validate me" in the body of the message (Figure 14). Send the message by typing Command-E, or by selecting Send from the Message menu.

On BMUG Boston, open the New User folder, read the document named To New Callers, and follow the instructions therein.

Please allow at least 5–7 working days for the Validation Volunteers to process your validation request. (We always encourage members to volunteer at the office and help move things along!)

Until your account has been validated, you will not be able to send messages to individuals, upload files, or download the majority of our Shareware collection.

Once your account's been validated by the Administrator you'll receive a validation confirmation letter from a Validation Volunteer in your mailbox.

Trouble Connecting? Busy Signals?

Planet BMUG currently has about 4,000 validated users, and BMUG Boston another 1,800. Everybody shares the same 15 and 11 phone lines 24 hours a day, so busy signals are commonplace.

On Planet BMUG the estimated average delay between first connect attempt and actually achieving the connection is five minutes during non-peak hours, and as much as an hour during heavy traffic.

The busiest hours are from 5 pm until midnight Pacific time, with morning (7 am–10 am Pacific), and lunch hours (11 am–1 pm Pacific) being almost as busy. Creative patience is recommended.

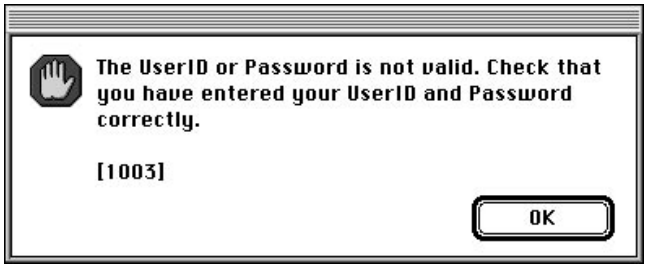


Figure 15: If you see this message, make sure you are using the right UserID and Password. If you are connecting for the first time it means you need to choose a different UserID.

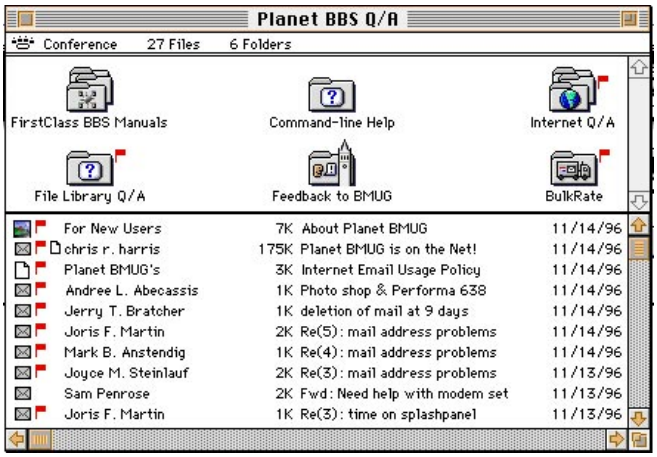


Figure 17: The Planet BBS Q/A conference.

No Such Registered User?

If you have picked a UserID already chosen by another member a dialog box will appear alerting you to this fact (Figure 15). In this case go back and choose a new UserID and connect again. If you are quick enough, you may remain connected during this time and will not have to re-dial.

When It Just Rings

If the line just rings over a weekend, then it is likely that the BBS is simply down for maintenance. At other times it may be that the BBS has crashed. Call back in a few hours if you would like, though you may wish to simply call back the next day.

Downtime Hours

All our BBSes are down for maintenance for approximately eight to twelve hours each weekend (usually Saturday, sometimes Sunday). They are also unavailable from 3:00am–4:00am (Pacific time for Planet BMUG, Eastern time for BMUG Boston) for Trash Collections. Messages or files sent during Trash Collection (between 3:00am–4:00am) will not appear in Conferences or New Uploads until the Trash Collection is complete (around 4:00am).

Common Problems and Solutions

Can't Connect via TCP/IP?

A1: Open up your Planet settings file and click on the settings button. In the window that appears, next to where it says Connect via TCP-IP.FCP, click on the setup button. Click on a little triangle next to Advanced settings, set the TCPPort (which is in right upper corner) to 3004 (please turn to "How to Get Online with BMUG via TCP/IP" article in this newsletter, see Figure 6).

A2 : If you're trying to login on Saturday or Sunday, the Planet might be down for maintenance.

A3 : It's possible BMUG's router or ISDN line might be down.

How Do I Find Out My UserID And Password?

You chose your own UserID and password when you create your BBS account, and it's up to you to remember them. The UserID may still be stored in the "second page" (Figure 5) of FirstClass Service Setup window. Please write down your UserID and password and keep them in a safe place. If you can't find it, contact the Helpline at (510) 540-1742 and let us know. It may take a few days to remedy the situation, so please be patient.

I've Entered My UserID and Password, But I Must Re-enter It Each Time I Connect.

Make sure you've entered your UserID and password in the second window (Figure 5) of the Planet BMUG (or BMUG Boston) settings file Service Setup window (Figure 5), and then press Save. If your UserID and password are entered in the opening Login window (Figure 4) they will not be saved in the settings file when you quit FirstClass.

My Modem Is Not in the Pop-up List. What Should I Do?

Select Basic AT.mdm (Figure 7) and select the correct baud rate (Figure 6) . This should work for all modems. When you become validated, send a message to the Planet BBS Q/A conference or the Modems conference asking for help (Figure 17).

My Modem Isn't Dialing. What Did I Do Wrong?

First, make sure that your modem is connected, by turning the modem's power off and then back on. If nothing happens when you click the Login button, double-check to see if you have plugged your modem into the modem port on your Mac, and that the modem is securely connected to a phone line, and the phone line is plugged in to a wall jack.

Make sure your modem settings are correct, paying particular attention to which port you have chosen. Make sure to set dial to Pulse if you do not have Tone service on your phone from your local phone service provider.

If you have tried all of the above and are still floundering you may want to call the BMUG Helpline.

I Get Cut Off When I Try to Fill Out The Registration Form.

FirstClass allows only two minutes to fill out the Auto-Registration form. If you ran out of time, call again and try to fill out the form within that time limit.

I Connected Successfully But Can't Tell If I'm Validated.

Once your account's been validated by the Administrator you'll receive a validation confirmation letter from a Validation Volunteer in your mailbox.

Until your account has been validated, you will not be able to send messages to individuals, upload files, or download the majority of our Shareware collection.

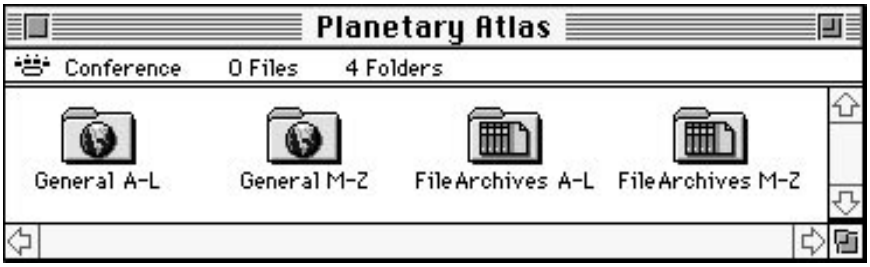


Figure 18. The Planetary Atlas and File Archive Atlas.

I Sent My Validation Request But Have Yet To Be Validated.

Our Validation Volunteers take approximately a week to process each request. If it has been more than a week and you are getting impatient, you may send a second validation request with the subject "Second request." Politeness helps. If after another week you have yet to be validated, there may have been a problem and you should call the BMUG Helpline at (510) 540-1742.

Things that may hold up your validation include expired memberships, not using your real name when you logged in, or accidentally creating multiple accounts with similar, but different UserIDs. A multiple account is created by filling out the Registration screen more than once.

Help! I'm Sooooo Confused!

You've read the instructions a thousand times, your software is configured correctly, your modem is plugged in and turned on, all cables are connected securely to the modem port and phone lines, and you're still having trouble.

When all else fails, the BMUG Volunteers are available to help you. The BMUG Helpline, at (510) 540-1742, is staffed by volunteers, and only at certain times during the week, so there are times when no one is available to take your call. When leaving a message, please leave a detailed explanation of the problem, and we will try to return your call as soon as we can. Your calls are important to us, so please do leave us both a day and evening phone number. Please say the numbers slowly and clearly.

A Brief Tour of Planet BMUG

Explore BMUG Boston and Planet BMUG at your leisure. Here are a couple of tips to help:

Conferences on BMUG Boston and Planet BMUG are just like folders on the Macintosh. You can open them by double-clicking. If you find a message that looks interesting, you can double-click on the message to read it. The messages with red flags are unread by you. Once you open a message the flag will disappear.

You can create a new message by typing Command-N, and you can easily reply to a message by typing Command-R.

To send a message to someone on the same BBS, type the first few letters of their name while the cursor is in the To: field, and press Enter, Return, or Tab. FirstClass will attempt to figure out the rest of the name. If it cannot narrow it down to a single name, you will be presented with a list of possible choices; simply double-click the correct name and it will be placed in the To: field for you.

Friendly Landmarks

Planet BBS Q/A

This conference is the best place to ask questions about logging on, modem troubles, other BBSes, Planet BMUG, BMUG Boston, or the FirstClass software (Figure 17).

The most frequently asked questions (FAQ) posted to this conference to date and their answers are in the article following this one, "Frequently Asked Questions from The Planet BBS Q/A Conference." You should read over them before you ask your question.

Planetary Atlas

This is a great place to look for that conference (or folder) that you know is somewhere on the BBS but can't seem to find (Figure 18). The entire BBS is listed in alphabetical order (Figure 18). There's also a list of all the various folders that contain the mountains of Freeware and Shareware that's available for downloading from the BMUG BBSes. Just double-click on the conference you want to check out—within the Planetary Atlas—and FirstClass will take you right to it.

System Bulletins

This conference contains important information about the status of Planet BMUG, BMUG's ISDN line and BMUG's Internet gateway.

FirstClass BBS Manuals

Located within BMUG Central, inside of the "Planet BBS Q/A" conference (Figure 17) also within the "New User Info" conference (Figure 12), these manuals provide many useful explanations of the FirstClass system.

DeskTop

This is your home base. You can get to BMUG Central, Conferences, File Libraries, System Bulletins and all the other fun areas from here. If you see the Request Validation conference on your desktop, your account hasn't been validated yet.

Additional Resources Online:

- The Planet BBS Q/A Conference
- FirstClass BBS Manuals, (located within Planet BBS Q/A)
- This includes help from SoftArc about the FirstClass software.
- Planet FAQs (located within New User Info, BMUG Central, Feedback to BMUG and Planet BBS Q/A)
- BMUG Online Reference (located within File Libraries)
- Command-line Help (located within Planet BBS Q/A) This contains helpful information on connecting to a First Class system from a command line system.
- BMUG Helpline Clinics

You can call the BMUG Helpline for tips on connecting or to ask a question about your modem or software at (510) 540-1742. Clinics are Mondays 5 pm–9 pm, Wednesdays, Thursdays, and Saturdays from 1 pm–5 pm Pacific time at the BMUG office: 2055 Center Street (half a block west of the Berkeley BART station, between Shattuck & Milvia).

How to Get Online with BMUG via TCP/IP

by chris r. harris, et al.

Configuring Your Settings And Connecting For The First Time

Step I. Starting FirstClass

Launch the FirstClass Client application by double-clicking on its icon. When you see the Settings open dialog box (Figure 2), choose the BBS you want to connect to. For this article, choose the Planet BMUG TCP/IP FirstClass settings file. You might want to use the black and white BBS settings file if you want to save hard drive space or have a Macintosh capable of black and white only.

Step II. Splash Screens and the Login Window

The Splash Screen (Figure 3) and the Login window welcome you to BMUG's BBSes and let you know which BBS you will connect to (Figure 4).

The Login window also lets you know how many times your ISP (Internet Service Provider) has attempted to access Planet BMUG. We'll leave the fields for your UserID and password for later.

For now, click on the Setup button.

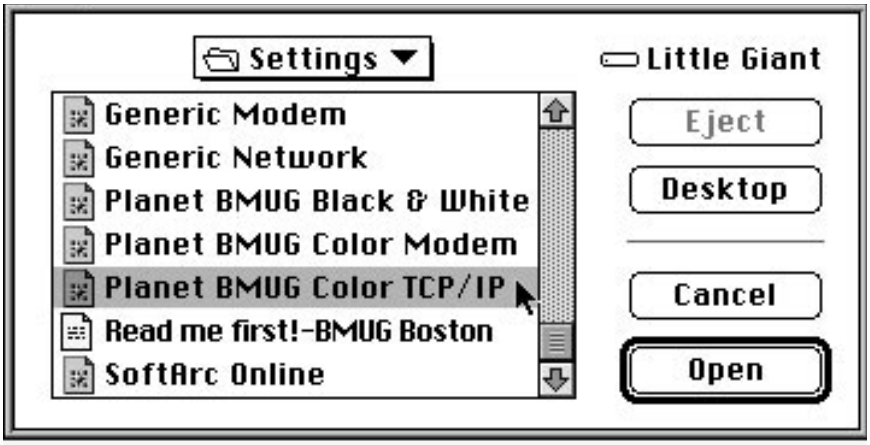


Figure 2. The Settings open dialog box. This is where you choose whether to connect to Planet BMUG or BMUG Boston, in color or black & white.

Figure 3. The Splash Screens.

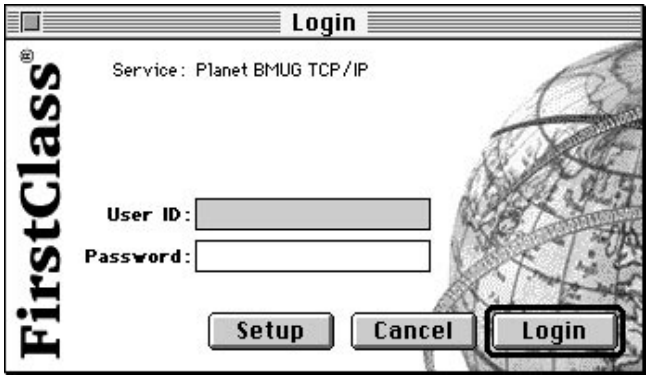


Figure 4. The infamous Login window. You'll get to know this window well!

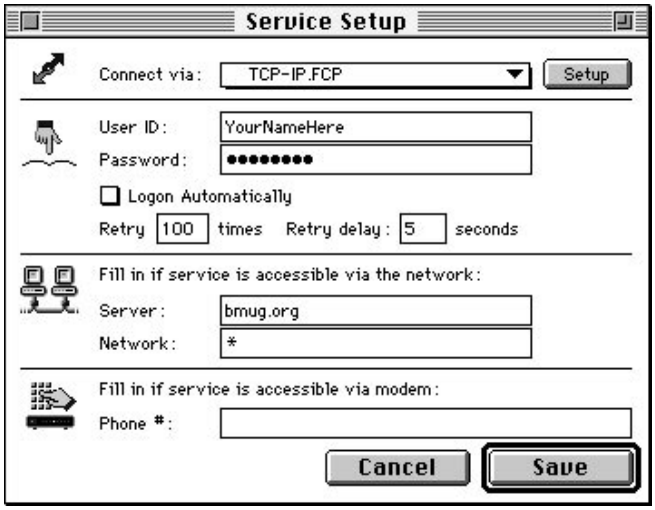


Figure 5: Configuring your settings file.

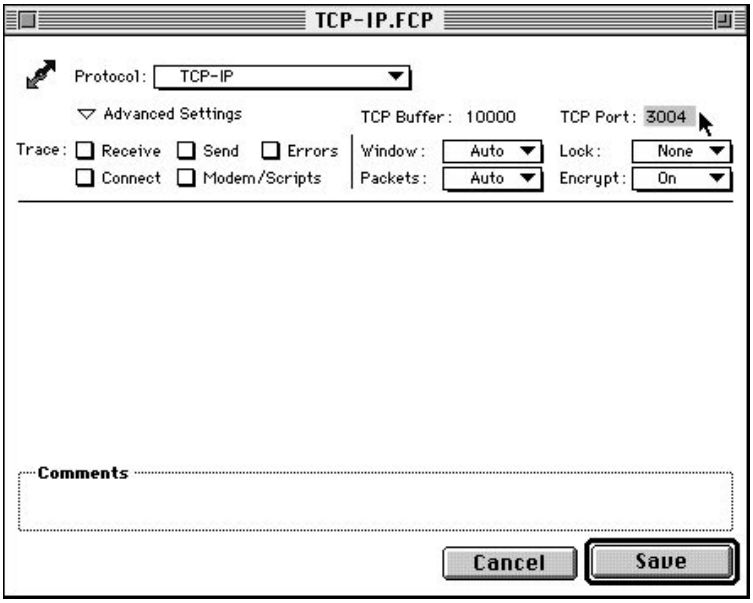


Figure 6: Configuring your port.

Step III. The Connection Setup Window

After you click the Setup button you'll get to the "second page" of the settings file (Figure 5).

BMUG does not supply you with a UserID and password; you create these when you first connect to the Planet.

UserIDs & Passwords

Unlike some BBSes, rather than using "handles," users here go by their real names—which you'll enter on the system when you login. The UserID and password here are only used to identify you to the system. BMUG does not supply you with a UserID and password; you may create any UserID and password you wish, with the following restrictions:

- Once you connect and actually create your account, you are stuck with that UserID. You can, however, change your password whenever you like (and you should, about once a month, for security purposes).
- UserIDs must be 15 characters or less.
- UserIDs can not include special characters (i.e. *, &, %, :, etc.); you must use standard numbers and letters only.
- UserIDs must be unique; only one person can use a specific UserID. If you connect with a UserID that has already been taken you will get a message indicating there is no such user.

Password Security

BMUG's BBSes are reasonably secure, but here are some ways to make your password harder to guess and your account more secure:

- Choose a password of at least 6 characters.
- Choose a password that can't be found in a dictionary; no real words, mix numbers and letters.
- Choose a password that someone cannot guess. Don't use names, initials, dates, or phone numbers.
- Be sure to memorize your password as well as keep it secret. Write your password and UserID on a piece of paper and store it in a secure location, not with your computer.

If you type and save the UserID and password in the "second page" of the settings file the software will store this information when you close the window. Keep a back-up copy of this file on a floppy disk (in a secure location) in case you lose the data on your hard drive.

Configuring Your Settings and Connecting to Planet BMUG via the Internet

Planet BMUG is accessible either via the Internet, or by direct modem dial-in. These instructions explain how to initiate an Internet connection. See the previous article for dialup via modem instructions.

1. Make certain you are using FirstClass Client 2.6 or higher. Version 3.1 is recommended.
2. Make certain your connection to the Internet is a PPP, SLIP or better connection from a service provider with full-time Internet access. "Internet access" offered by online services such as America Online will not work.
3. Use the Planet BMUG TCP/IP FirstClass settings file.

   If you can't get this settings file, you can make copy of another FirstClass settings file, and set it up as follows:

- From the first (Login) screen (Figure 1), click on the Setup button
- On the setup window (Figure 2), choose TCP-IP.FCP as your connection method from the pop up list at the top of the screen.
- Type your User ID and password in the appropriate fields.
- Make sure the Planet BMUG's IP address is in the Server field of the connection setup window. You may use either the IP number—206.80.36.91—or the domain name: bmug.org.
- Click on the Save button.

(Please note that clicking the setup button next to "Connect via TCP/IP.FCP" will take you to the TCP-IP.FCP setup screen. You should not change any settings in this window, with the exception of the port number. Make sure this is set to port 3004, or you will not be allowed to log on!)(Figure 6)

4. Initiate your local Internet connection (e.g., connect via PPP.)
5. Once connected to the "Internet" open Planet BMUG BBS file or First Class Client software and press the Login button on the FirstClass Login screen. You will be connected to Planet BMUG if there are ports available. The performance you experience will depend on the bandwidth of your Internet connection, and network traffic conditions.
6. If you are a new user on Planet BMUG, you must fill out the registration screen with your complete name and address as they appear in the BMUG records.

BMUG Resources

BMUG Choice Products

Spring 1997 Awards

The BMUG Choice Products list offers Macintosh OS users an unbeatable tool to sift through the thousands of products available to them and keep their Mac experience both fun and productive.

BMUG experts review Mac OS products, including Freeware and Shareware, as well as the latest commercial offerings, and flavor their impressions with the opinions and experiences of members like you.

The result is a selection of products that stand out from the crowd. To be designated a "BMUG Choice Product" BMUG considers a product's elegance and ease of use, its ability to do what it claims as invisibly and Mac-intuitively as possible, the way the product is put together, its cost and value, and the kind of support you can count on when you spend money on a Mac OS product.

Of course, there are no "perfect" Choice Products, and BMUG notes some limitations in the reviews. Nevertheless, these selections represent products BMUGers would choose for themselves as the best effective choices.

The BMUG Choice Product list is regularly updated to reflect the then current state of the Mac and the new options that regularly offer themselves to Mac OS users. The then-current list is printed in each semi-annual BMUG Newsletter, with more frequent updates to be found on the BMUG Web page at http://www.bmug.org.

Don't forget to give BMUG your feedback on Choice Products either on Planet BMUG in the Choice Products folder (BMUG Central: BMUG Community Center: Newsletter Articles: Choice Products) or by mail to BMUG, 1442A Walnut Street #62, Berkeley, CA 94709-1496; Attention: Choice Products.

CHOICE PRODUCTS CONTENTS

COMPUTERS

DESKTOP

Performa 6400/200 — $2200 to $2700

The best of the pared-down Performa line, the 6400/200 is an excellent choice for home or small business use, especially at the recently reduced price. It's 200 MHz 603e chip is fast with onboard 256K level-2 cache. A large 2.4 gig drive, 8x CD-ROM and a Global Village Platinum 28.8-Kbps modem make this one well-equipped machine. But there's more: a great speaker system with a subwoofer for better bass, a wealth of software including Megaphone for voice-mail, and some room to expand although it only accepts the short 7" PCI expansion cards. Optional extras include Apple's TV/FM Radio tuner; video capture and output and PC Compatibility cards, which are a breeze to install. There is even an impressive multimedia option with the Avid card and software. This tower model looks good and is a good value, despite less than blazing graphics speed and unexpandable VRAM limiting color and monitor options. Although the 180MHz version looks to be a better bargain, performance is significantly worse, and "necessary" upgrades bring it above the price of the 6400/200.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://performa.apple.com/performa/datasheets/performa6400-200.html

PowerCenter — $150, 2100

As 1997 dawns, Mac users are beginning to reap the blessing of clones. Now buyers can select among models from Apple, APS, DayStar, Motorola, Umax, and, of course, the first kid on the block, PowerComputing. The PowerCenter is another example of a solid design and good feature combination from Power Computing albeit in a PC-like box. The PowerCenter 150 comes standard with a 150MHz 604 chip, 512K 2-level cache, 16 MB of RAM, a smallish 1 GB hard drive, 8x-CD-ROM drive, 3 full sized PCI slots and built-in Ethernet. This is one fast machine for this price range. Unlike the Performa, you can expand the VRAM from a standard 1 MB up to 4 MB to handle virtually any monitor or color situation you'll face. All this and a decent bundle of software make this model an excellent desktop choice, for business or home. But keep your eyes open to new models as product lines and prices change quickly. The PowerBase series promises much better speed at lower prices. We can't wait to check it out.

Power Computing, Round Rock, TX, 512-246-6886, 800-370-7693, http://www.powercc.com

Power Mac5400/180, — $2000

Presently available only to the education market, this PowerMac is what an all-in-one, clutter-free, Power Macintosh should be. It sports a PowerPC 603e processor running at 180 MHz on an Alchamy based motherboard, and a wealth of excellent features including 16 Megs of RAM, a 1.6 gig hard disk, and an 8x CD-ROM drive. The built-in monitor is a 15-inch, .28 dot pitch color display offering 16-bit color. Expansion options are available with a PCI slot. Many audio enhancements including a pair of speakers and a microphone are incorporated into the unit. Be sure to add 256K of cache memory for optimum performance.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://product.info.apple.com/productinfo/datasheets/dt/pm5400-180-hied.html

PORTABLE

PowerBook 1400cs — $2500 to $2900
PowerBook 1400c — $3500 to $4000

Frustrated? The last year has seen a glut of problems for Mac users who crave a portable. The 5300 series was slow, buggy and lacked some basic features. The next generation of PowerBooks is still off in future and clones have stayed on the desktop for now. What's a laptop lover to do? Check out the 1400 series. It's not just an update of the ill-fated 5300. It is a new design that boasts a large 800x600 pixel 11.3-inch diagonal color screen, either passive matrix (the "cs" models) or active matrix (the "c" models). The passive matrix screen is improved making it a real contender. The big news is the 6x CD-ROM standard on all but the cheapest model. Battery life is decent though not state of the art. All but the base models come with 16 megs of RAM. Hard disks are 1-gig on the "c" models and 750MB on the "cs" models. Only the top of the line includes the performance boosting Level-2 cache. It is not faster than the old PowerBooks, but it seems solid. And at last the insides are much more user friendly.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://product.info.apple.com/productinfo/datasheets/pt/pb1400.html

PowerBook Duo 2300c — $1700 to $2500

The newest (and only) Duo from Apple features the 603e Power PC processor chip running at 100 MHz. It is still a lightweight at 4.8 pounds, and still sports a 9.5 inch active-matrix color display, and now has a trackpad instead of a trackball. Otherwise it's the same as the now-discontinued 280c. It comes with either 8 megs of memory and a 750-meg hard drive, or with 20 Megs of memory and a whopping 1 gig hard drive and a less-than-impressive Apple Express Modem II. If a Duo fits your needs, this is an excellent, albeit pricey, choice. If a regular PowerBook is what you want, consider waiting for the next series due out later this year.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://product.info.apple.com/productinfo/datasheets/pt/duo2300c-100.html

PERFORMANCE ENHANCERS

TechWorks

At last! RAM is cheap!! With all the new memory intensive applications out there, an average Mac user needs 16 Megs or more of RAM. Buy it. TechWorks has memory for all current Apple products, plus a long line of specialty and 72-pin SIMMs and DIMMs. You get clear instructions on how to install your RAM, along with tools for opening your Mac or PowerBook—not usually included when you order from other companies. A lifetime warranty, 30-day money-back guarantee, and toll-free support all make TechWorks a Mac peripherals company to emulate. The people on the phone taking orders are among the nicest people that BMUG has dealt with. Be sure to tell them that you're a BMUG member, and ask for the BMUG discount. For older machines, consider checking Planet BMUG for used SIMMs at bargain prices.

Technology Works, 4030 Braker Ln. W, #350, Austin, TX, 78759, 512-794-8533, 800-688-7466, http://www.techwrks.com

Power Macintosh Level-2 Cache Card

An absolute must for every Power Mac. Many brands of cache card will work, and provide about a 15 to 20% speed boost depending on the application, but some models are picky and incompatabilities exist, so check compatibility before you buy. The faster your CPU the more cache you should buy. 256K is the minimum with up to 1 meg on the latest screamers.

ATI Xclaim GA PCI Video-Display Card — $250

For many PowerPC owners, one significant bottleneck inhibits performance: their on-board video. If you need faster redraw and rendition, consider a video card. There are many out there with more to come. A good choice is the Xclaim GA card. The 4-Meg version is relatively inexpensive, yet it doubles the speed of many functions.

ATI Technologies, 905-882-2600, http://www.atitech.com

AsantéFast 10/100 (PCI) — $150
AsantéFast 10/100 (NuBus) — 270

As options packages for PowerPC's keep changing, Ethernet capability is no longer standard equipment. Not to worry. Inexpensive and fast alternatives exist from Asanté. It's Fast Ethernet cards provide good speed (approximately 2x the speed of a 10BASE-T set up) at a good price. As a bonus, the PCI version comes bundled with Choice Product Net Doubler which lists for $99 all by itself. If you already have Ethernet, the speed boost vs. cost of the upgrade to Fast Ethernet needs to be considered.

Asanté Technologies, San Jose, CA, 408-435-8388, 800-662-9686, http://www.asante.com

Alacrity Acceleration Kits — $70

If you are adventurous and like poking around inside your Mac, and your older PowerPC or Quadra is feeling just a bit pokey, consider a clock chip accelerator. KS Labs has a number of them available to boost your processor speed by up to 33%. Although using the kit violates the Apple warranty, it can be deinstalled easily without anyone knowing it was ever there. There is a kit for the Power Macintosh 6100, 7100 and 8100 models, Quadra 605, 650, 660AV, and 800 and similar Centris' and Performas.

KS Labs, Route 10 Box 41a, Marietta, OH, 45750, 614-374-5665, 800-450-0353

POWERBOOK ACCESSORIES

Lind Electronic Design, Inc. — Price varies

In addition to a range of batteries (from the regular internal ones to several external models), they also make a device that conditions a battery while it is still inside the PowerBook. It drains the battery down to the 1-volt-per-cell level, and then lets it recharge normally—makes lots of sense for those of us with only one battery and no external conditioner! Lind offers extraordinary customer support. If you have a problem with one of its products, it will bend over backwards to make it right.

Lind Electronic Design, Inc., 6414 Cambridge St., Minneapolis, MN, 55426, 800-697-3702, lrlind@aol.com, http://www.lindelectronics.com/

The Madson Line PowerBook Bags — $65 to $250

The best constructed PowerBook luggage you can find. The quality of everything from the nylon or leather outsides to the padded insides is first rate. They last. Yet they are light weight, compact, and convenient. If you have a PowerBook, this is what to carry it in. A wide variety of looks and colors are available.

The Madson Line, PO Box 338, Corte Madera, CA, 94976-0338, 415-927-3600, 800-851-1551, http://www.bena.com/madsonline/

HARDWARE

INPUT DEVICES

Apple Extended Keyboard II — $155

Apple's full keyboard, with FKeys, number pad, Power On key, and a few keys you'll probably never need! Once you've used one of these puppies, you'll never go back. It is well constructed with an excellent feel. It's quality makes it worth the higher price it commands. Try it. The only drawback is the larger footprint.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://product.info.apple.com/product-info/datasheets/af/keyboards.html

Kensington Mouse, 60, Kensington Thinking Mouse — $85

If you want a well-designed mouse that offers more than a single button, you can't beat the Kensington Mouse. As with the TurboMouse, software allows you to program the buttons, and simplify a variety of mouse tasks. Like other Kensington products, it comes with an excellent 5-year warranty and superb product support. For even greater versatility consider the 4-button Thinking mouse. Kensington also sells a solid, standard one-button, "Mouse-in-a-Box" for only $40.

Kensington Microware Ltd., 2855 Campus Dr., San Mateo, CA, 94403, 415-572-2700, 800-535-4242, http://www.kensington.com

Kensington Turbo Mouse 5.0 — $ 95

We have tried various types of trackballs, but the smooth feel, easy movement and light pressure it takes to click the nicely located buttons, make it the easiest and most comfortable trackball. You just don't have to work as hard with the Kensington. It even fits snugly up against the old Apple keyboard and takes up very little desk space. As a bonus, the TurboMouse software allows you to program the buttons (all 4 of them!), adjust the rate of cursor acceleration, and even make the cursor jump to a predefined spot on your monitor. Well done. The TurboMouse also has an excellent warranty and superb product support.

Kensington Microware Ltd., 2855 Campus Dr., San Mateo, CA, 94403, 415-572-2700, 800-535-4242, http://www.kensington.com

WACOM Art-Z II Tablet 300
WACOM ArtPad II $150

For many years these affordable pads have been the best pressure-sensitive devices for the Mac. The latest pads come with a new "Ultra Erasing Pen" that has a second sensor tip that looks and acts just like an eraser on a pencil. This is one cool feature! These new pads also have the ability to sense the tilt of the pen to create even more realistic and detailed pen strokes. The pads connect via the ADB port and are a must for painting programs like Painter or Dabbler. They add a worthwhile dimension to any painting or graphics activity and are also great mouse replacements. Most graphics programs support the tablets, but it's wise to check first. While the ArtZ II and ArtPad are big enough for most users, WACOM also makes tablets as large as 12x18 inches. All WACOM tablets are worth considering. They're as close as you'll get to using a paintbrush on your Mac, and are great for playing Shanghai too. Be sure to check for reseller software bundles.

WACOM, Inc., 501 SE Columbia Shores Blvd., Ste. #300, Vancouver, WA, 98661, 206-750-8882, 800-922-6613, http://www.wacom.com

Mac GamePad $30

Admit it. You like to play games on your Mac. But a mouse just doesn't cut it as a joy-stick. Get something designed for games. The Mac GamePad from Advanced Gravis does double duty. It combines a joy-stick, a Nintendo-style controller for multi-directional operation, and 4 programmable buttons. It is suitable for either right or left-handers. You can even get it bundled with Doom. Advanced Gravis also makes a line of dedicated joysticks for in-flight games.

Advanced Gravis Computer Technology, Ltd., #101-3750 North Fraser Way, Burnaby, BC, Canada, 604-431-5020, 800-663-8558, http://www.gravis.com

Color QuickCam $200

The color version of the famous ball-shaped QuickCam adds a lot more than just color. Focus options and 24-bit color images at up to 640x480 pixels add versatility to the product. Although you are tethered to a Mac serial port, not free to roam as with a digital camera, you can make great use of your live pictures placing them on anything from a web page to a video conference screen using optional VideoPhone software ($60). It's not photographic quality, but it can be a lot of fun. Accept its limitations and enjoy.

Connectix Corp., 2600 Campus Drive, San Mateo, CA, 94403, 415-571-5100, 800-950-5880, http://www.connectix.com

MONITORS

Sony Multiscan 15sfII $470

The best small multiscan monitor on the market is the new Sony. It can display multiple resolutions and sports a series of digital controls with on-screen display for complete image adjustment flexibility. Maximum resolution is 1024 x 768. The monitor is inexpensive and meets MRP II/NUTEK/EPA standards. But if you can afford it, consider the extra screen space a larger monitor can provide.

Sony Electronics, Inc., Computer Peripheral Products Co., 3300 Zanker Rd., San Jose, CA, 95134, 800-352-7669, http://www.sel.sony.com/SEL/ccpg

Sony Multiscan 17sfII $760

The best choice for most users. This next-generation Sony give you a large enough screen for most uses without breaking your wallet or overcrowding your desktop. It can display multiple resolutions and sports a series of digital controls with on-screen display for complete image adjustment flexibility. Maximum resolution is 1024 x 768. The monitor meets MRP II/NUTEK/EPA standards. A great choice for home or small business at a very good price.

Sony Electronics, Inc., Computer Peripheral Products Co., 3300 Zanker Rd., San Jose, CA, 95134, 800-352-7669, http://www.sel.sony.com/SEL/ccpg

Sony Multiscan 20sfII $1620

If you do a lot of graphics or page layout work you'll need the extra screen real estate this 20" Sony can provide. Sharp text and good color clarity are the hallmarks of the new generation Trinitrons. Controls are digital with on-screen display. Maximum resolution is 1024 x 768. Although many other makers sport Sony CRT's, Sony usually has the best quality tubes in its own displays. The monitor meets MRP II/NUTEK/EPA standards.

Sony Electronics, Inc., Computer Peripheral Products Co., 3300 Zanker Rd., San Jose, CA, 95134, 800-352-7669, http://www.sel.sony.com/SEL/ccpg

KlearScreen (8 oz.) $10
Klear Kloth (pack of 6 - 11" x 12" cloths) $6

An environmentally-friendly computer cleaning spray and polishing cloth. A small bottle contains enough fluid to clean a two-page display 300 times; it's also great for your glasses. You shouldn't use ammonia- or alcohol-based cleaners on screens, since they may react with the plastics. As an added bonus, it is the only screen-cleaning product endorsed by Apple Computer for use with its displays.

Meridrew Enterprises, P.O. Box 113, Danville, CA, 94526-0113, 510-838-8774, 800-505-5327

PRINTERS

Hewlett-Packard LaserJet 6MP $950

It's fast (rated 8 ppm), it's sharp with 600 x 600 dpi resolution and very well priced. This newest HP personal printer is Postscript Level-2 and boasts 2 paper trays holding a total of 350 sheets as standard equipment. Print quality is among the best and has a straight-through paper path to make envelope and label printing smoother. For IrDA- compliant PowerBooks there is an infrared port for wireless transfers. No reason to look anywhere else.

Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014, 408-246-4300, 800-752-0900, http://www.hp.com

Hewlett-Packard LaserJet 5M $1900

This HP printer is the clear choice for office environments. It boasts top quality text, superb grayscale graphics, and good speed, although a bit slower than the Apple LaserWriter 16/600PS on text only files. It comes standard with 6 Megs of RAM, upgradeable to 52 Megs, has Ethernet 10BaseT and LocalTalk network connectors, and a SCSI port for downloading fonts. The printer incorporates PostScript Level 2 and PCL6 (the latest version). Legal size paper is accommodated. There is no straight through paper path for heavy stock however. To save toner, there is an EconoMode for drafts, and the printer is Energy Star compliant. This printer should fit the bill for most business needs. If you need to print on tabloid-size paper, consider the Hewlett-Packard LaserJet 4MV at about $1000 more.

Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014, 408-246-4300, 800-752-0900, http://www.hp.com

Apple Color LaserWriter 12/600PS $6000

Considering a color laser printer? As prices drop and the technology improves, such printers are becoming a viable choice for high-end business use. With the Color LaserWriter 12/600PS, Apple is leading the way. It is fast and remarkably easy to set up and use. It is rated at 12 ppm for monochrome, and 3 ppm for two or more colors. Resolution is limited to an excellent 600 x 600 dpi with Apple's Color PhotoGrade resolution providing the equivalent of a 200-lpi halftone screen and 122 possible gray levels for each color. The printer comes with 12 Megs of RAM upgradeable to 40 Megs using 72-pin SIMMs. The printer can be hooked into LocalTalk, parallel or Ethernet lines with support for a wide variety of protocols.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333,
http://product.info.apple.com/productinfo/datasheets/im/lw16-600ps.html

Apple Color StyleWriter 2500 $350

The 2500 is a superb choice for home or business. This successor to the 2400 is much faster and boasts a greater resolution (720x360) than its predecessor. Uses either a 4-ink cartridge (with two tanks; one for CYM inks and one for black) or black only cartridge. It can even be used on a network with a LocalTalk interface ($100) or EtherTalk Adapter ($200). For $50 you can get the Adobe/GDT Personal Publishing Toolkit which includes GDC's StyleScript PostScript interpreter. Buy it. It is well worth in speed, performance, and greatly improved graphics on EPS images. All-in-all, an excellent package at a bargain price. If you can't afford this printer, consider the Color StyleWriter 1500 at $280, but the extra money for the 2500 is definitely worth it.

Apple Computer, Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333,
http://product.info.apple.com/productinfo/datasheets/im/colorsw2500.html

Apple Color StyleWriter 2200 $380

Need to take a color inkjet on the road? This is the printer to take. At only 3 pounds inside a 12-inch wide black case, the 2200 can run off a standard circuit or from an optional battery pack. It produces great text and well saturated colors at the same

720 x 360 dpi (text) or 360 x 360 dpi (color) resolution as its desktop cousin, the Color StyleWriter 2400. It even matches the 2400's speed. The only drawback is that the single ink cartridge (which includes black) must be tossed once one of the ink colors you want is used up. Nevertheless, it makes a great partner to a PowerBook or Duo. Investing in an optional battery attachment is probably a good idea.

Apple Computer, Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://product.info.apple.com/productinfo/datasheets/im/colorsw2200.html

StyleScript 3.0 — $100

Inkjet printers have difficulty printing postscript images well. StyleScript "smooths the jaggies" as if your HP or Apple inkjet were a postscript printer. If you print color images, the differences can be dramatic. Apple offers a half-price coupon with Stylewriter2500's.

GDT Softworks Incorporated, 604-291-9121, 800-330-9633, http://www.gdt.com

TonerTuner 1.0.8 — $20

If you ever wanted to save on toner and be able to print in "draft" mode on a laser printer, TonerTuner is for you. An extension, it adds a control to the standard Print dialog of Mac applications that lets you set how dark to make your output. Why use more toner than you need? The standard product has "off" as the default setting. If you want Toner Tuner "on" as the default, just ask customer support.

Working Software, Inc., PO Box 1844, Santa Cruz, CA, 95061-1844, 408-423-5696, 800-229-9675, http://www.working.com

Jet Paper Products — call for prices

These people have an absolute passion for paper. They offer many different high-quality papers especially suited for inkjet and laser printers, including 100 percent recycled and rag flavors. They offer a sample pack for only $4.95, including postage.

Jet Paper Company, PO Box 860, Everett, MA, 02149-0860, 800-235-4538

Paper Direct — call for prices

This company has many unusual papers and paper products. If you want prefabricated graduated color brochures for your laser printer, or stock with "engraved" certificate borders, check out Paper Direct's catalog. It's free, impressive and practical.

Paper Direct, 205 Chubb Ave., Lyndhurst, NJ, 07071, 800-272-7377, http://www.paperdirect.com/

American Ink Products — Price varies

These guys have been making printer ink products for a decade. They offer do-it-yourself refill kits, colored inks, etc., and are our local source for inkjet refills.

American Ink Products Company, 630 E. 10th St., Oakland, CA, 94606, 510-268-0825, 800-414-6546

Jet-Master—Refill for DeskWriter cartridges — $15-$25

Computer Friends sells refill kits for all inkjet printers. What sets them apart from most of the competition is that they also sell ink by the bottle –as much as a gallon! Most other companies who sell ink only offer throw-away refill kits—definitely not sensitive to the environment. You can easily refill your DeskWriter cartridges with a syringe (included in the kits) for an economical price.

Computer Friends, Inc., 14250 NW Science Park Dr., Portland, OR, 97229, 503-626-2291, 800-547-3303

MODEMS

USR Courier v.Everything — $365

This is the modem that BMUG prefers for use on its BBSes. We've used USRs 24 hours a day for years, and buy as many as we can afford. It may be overkill for the home buyer, but they are great for heavy-duty use. It is also upgradable via Flash ROM. USR's software allows it to adjust speeds to match changing line conditions. What's more, US Robotics has special prices for sysops. These features and solid construction distinguish the v.Everything from cheaper, less reliable USR modems.

U.S. Robotics, Inc., 8100 N. McCormick Blvd., Skokie, IL, 60076, 708-982-5001, 800-342-5877, http://www.usrobotics.com/

Global Village TelePort Internet Edition — $170

Today, no modem buyer should purchase anything less than a 28.8 Kbps modem. This latest version from Global Village actually bests that promising 33.6 Kbps under optimum conditions. The hardware is average. What sets it apart is the superb Global Fax software. If you want to use your computer modem as a fax, this is the modem to buy. The modem is Flash ROM upgradable.

Global Village Communications, Inc., 1144 E. Arques Avenue, Sunnyvale, CA, 94086, 408-523-1000, 800 736-4821, http://www.globalvillage.com

Global Village PowerPort Platinum PC Card — $320
Global Village PowerPort Platinum Pro PC Card — $475

PowerBooks have become PC-Card capable (the 190's, 5300's, and 1400's) and PowerPort modems offer the best combination of performance, convenience and quality Mac-like software of any PC-Card modems out there. The "Pro" version features simultaneous 10Base-T Ethernet. These cards come with Global Village fax software which is solid and easy to use. Unfortunately software upgrades are not free and customer support could use some improvement. The modem is 28.8 Kbps (v.34).

Global Village Communications, Inc., 1144 E. Arques Avenue, Sunnyvale, CA, 94086, 408-523-1000, 800 736-4821, http://www.globalvillage.com

3Com Impact ISDN External Digital Modem — $400

The 3Com Impact ISDN digital modem offers access to the Internet at speeds of up to 128 Kbps (with both channels in use), yet is as easy to install and configure as an analog modem. The 3Com requires entry of the following information, the phone number of your Internet service provider, SPIDS (service profile identifier) numbers and telephone company switch type, which information can be obtained from your phone company. At BMUG, 16 members can login to the Planet via TCP/IP over the Internet through BMUG's single ISDN line using our 3Com ISDN digital modem, compared to the 16 individual analog lines. For more information about ISDN see "The Internet with ISDN" by Kevin M. Savetz in the Spring 1996 Newsletter on pg 205.

3Com, Great America Site, 5400 Bayfront Plaza, Santa Clara, CA 95052 , 408-764-5000, 800-638-3266, http://www.3com.com/

Konexx Mobile Konnector — $150
Konexx Desktop Konnector — $120

Have you ever wanted to use your modem only to find that your phone line is digital, not analog? Many hotels and office phone systems are digital these days making the standard computer modem useless. There is one way around this problem: the Konexx Konnector. Plug in the Konexx Konnector between the handset and base unit of a digital phone and you'll be able to use your regular or PowerBook modem. Works off an external adapter or internal batteries. The Mobile Konnector runs off two 9-volt batteries.

Unlimited Systems, 8586 Miramar Place, San Diego, CA, 92121, 619-622-1400, http://www.konexx.com/

TeleDaptors — $30 and up

These folks can get you phone line adapters for just about every country in the world. They also offer mini-kits for specific areas, a connector that will let you hook up to a digital phone system, as well as software utilities. They also have special "Road Warrior" packs, complete with an acoustic coupler.

TeleAdapt, 51 East Campbell Ave., Campbell, CA, 95008, 408-370-5105, teleadapt@aol.com, http://www.teleadapt.com/products/pdaptors

SCSI DRIVES

APS Hard Drives — Prices Vary

1.2 Gig drives for under $250, and drive prices continue to drop! For many years APS has provided quality hard drives at very good prices. Each drive comes with Power Tools formatting software, a special APS version of CharisMac Engineering's well-regarded Anubis software. Unlike CharisMac or other drive developers like FWB, APS provides upgrades free of charge over its web site. This is a substantial savings as drivers need to be regularly updated with every adjustment to the Mac OS and product line. At $25 or more a pop, those updates can get very costly. The free PowerTools updates make APS drives an even bigger bargain.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

APS CD 8 — $200

CD-ROM drives keep getting faster with 8x being the current standard, although there is still little out there that makes use of this speed. The drives are pretty much interchangeable. So go for price, software and support. APS uses an NEC mechanism and a customized version of Anubis CD-AutoCache. Although faster than a 4x drive, there is little need to upgrade from a 4x unless you do large database work off your drive. Available as an external or internal drive for the same price.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

Zip100 Drive — $130
100-meg cartridge — $12 to $18

This amazing floppy drive from Iomega, the masters of the floppy media, is cheap and very cool. It's elegance of design and ease of use puts it above the competition. If you need quick and easy removable media storage for small scale archiving or transportation, we highly recommend this product. Epson and other companies repackage this drive, often at a better price.

Iomega, 1812 W. 4000 South, Roy, UT, 84067, 801-778-1000, 800-777-6654, http://www.iomega.com

APS ProDAT — $650 int / $700 ext
APS HyperDAT Pro — $950 int / $1000 ext

If your business needs to backup a lot of material reliably, consider a DAT drive. The tape media is inexpensive, and the newer DAT drives are fast. The ProDAT can backup up to 4 GB of data with a 120M tape cartridge, and the HyperDAT Pro can handle up to 8 GB on a single 120M tape and support transfer rates of up to 50MB per minute. With Retrospect backup software, backups can be easy. Despite growing competition, DAT remains the archivers of choice for massive media backups.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

APS CD-R Drive — $700

While the prices of many computer peripherals have dropped, few have dropped so fast or have larger implications than the drop in recording CD-ROM drives. The prices are approaching the point where an average business or individual can afford one, and produce their own products, databases, and archives in-house. Many resellers are producing high-quality recording CD-ROM drives. What sets the 2x speed APS apart is its very low price and excellent CD writing software, Astarte's Toast CD-ROM Pro. (Be sure to confirm that your drive includes it as prices and packages change periodically.) If you produce CD-ROMs or want to, this is a great tool to start with. Just be careful. Finicky SCSI connections take on a new meaning when a CD-R drive is in your SCSI-chain. 4x CD-R's are beginning to appear but cost 50% more.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

SCSI ACCESSORIES AND ENHANCEMENTS

DriveSavers

These guys get data out of flaky hard drives that disk recovery software like MacTools Pro and Norton Utilities can't touch. They'll also do PC, Novell, and UNIX recoveries. They aren't cheap, but if you really need your data back, nothing is too expensive.

DriveSavers, 400 Bel Marin Keys, Novato, CA, 94949, 415-883-4232, 800-440-1904, http://www.drivesavers.com

SCSIProbe 4.3 — Freeware

SCSIProbe displays a list of the SCSI devices connected to your Mac. For each device, it lists the SCSI ID, type of device, manufacturer, product number, and version of the driver. It can reset the SCSI bus and mount unmounted devices. It even works with the multiple SCSI busses on the newer Macs. Alas, there are compatibility issues with System 7.5.

Robert Polic

APS SCSI Sentry — $40

Few things can be more frustrating that an uncooperative SCSI chain. This digital active terminator monitors the chain and provides the appropriate termination where needed. Great headache reducer.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

APS SCSI DOC — $30

Have you ever tried to connect your PowerBook with its square SCSI socket to a standard SCSI cable? You can't do it, unless you have SCSI DOC. It's a heavily shielded SCSI connector with a male HDI-30 at one end and a female DB-25 SCSI connector at the other. It includes a switch for putting dockable PowerBooks into docking mode and saves you the trouble of carrying around a PowerBook-specific SCSI cable.

APS Technologies, 6131 Deramus, PO Box 4987, Kansas City, MO, 64120-0087, 816-483-1600, 800-926-0390, http://www.apstech.com

Hurdler SCSI Serial Expansion — $450 (4) / $350 (2)
Hurdler Serial Boards — $350 (4) / $150 (2)

If you find yourself with more serial devices than can connect to your Mac at any one time, consider the Hurdlers. As a stand alone unit, or as a NuBus board, the Hurdler provides 2 or 4 fast serial ports (57,600 baud per port) and the software necessary to insure that your Mac can use all of them. A good solution to a not uncommon problem.

Creative Solutions, Inc., 7509 Connelley Drive, #D, Hanover, MD, 21076, 410-766-4080, 800-367-8465,

SCANNERS

HP ScanJet 4c — $900

The latest HP color scanner quickly handles black & white, grayscale, and one-pass 30-bit color scanning at 600 dpi (software dithered to 2400 dpi). It's among the fastest and most accurate scanners for the Mac and is able to detect details even in deeply shadowed areas. Yet it's easy to use and fairly bulletproof. The scanning area is 8.5" by 14", so it takes up a lot of desk space. It doesn't use Photoshop plug-ins but is TWAIN compliant. It is bundled with Caere OCR software and Photoshop 2.5 (called "LE"), and it can be used to make color and black-and-white copies with its DeskScan software. But perhaps the biggest change in this new model is the Visioneer PaperPort software that allows this scanner to annotate, organize and link documents. It is a very versatile package. Transparency adapter ($630) and sheet feeder ($490) options are available.

Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA, 95014, , 800-752-0900, http://www.hp.com

UmaxVista-S6E — $280

Umax has long been a leading maker of Mac and PC scanners. The new Vista-S6E is an exceptional scanner at a bargain price. It is fast with a well designed software that makes image tweaking relatively easy. You have a choice, AutoSetup which does the tweaking automatically or adjust things manually. The scanner is 300 dpi compared to the HP's 600 dpi and is only 24-bit, not 30-bit like high end scanners. But most users won't notice these differences. Bundled software includes Adobe Photo Deluxe and PageManager CD-ROM. A transparency adapter ia a $300 option.

Umax Technologies, 3353 Gateway Blvd., Fremont, CA, 94538, 510-651-4000, 800-562-0311, http://www.umax.com

Visioneer PaperPort Vx — $280

This little 12.5 inch wide beauty has revolutionized scanning. Its convenient size means you can keep it next to your Mac at all times. Just insert the document you want to copy form business card to ledger size and larger and the PaperPort automatically turns on. When its done, it turn off. Meanwhile the OCR software and SharpPage technology allow you to manipulate text and make use of it as you wish. The Vx includes Corex CardScan, OmniPage LITE OCR and PictureWorks Copier software. For better speed, purchase the $70 SCSI adapter.

Visioneer, 2860 Bayshore Road, Palo Alto, CA, 94303, 415-812-6400, 800-787-7007, http://www.visioneer.com

SPEAKERS

SoundWorks — $200
MicroWorks — $320

For richer sound and deeper bass consider these ultra compact 3-piece systems. Each package is self powered, with the amp and control panel in the larger woofer cabinet. The Soundworks system is smaller (especially the woofer) and has no separate input for an external CD-ROM player however. It's rated at 18.5 watts. The larger and more powerful 66 watt MicroWorks system (still very compact) provides excellent sound equaling more expensive speaker sets. An excellent instruction manual helps you with everything, including placement of the subwoofer. Cambridge Soundworks has retail stores in much of the

US. But don't forget. If you already have stereo speakers in your computer room, all you may need is a simple adapter to plug you Mac into the best, and cheapest sound option of all.

Cambridge SoundWorks, 311 Needham Street, Newton, MA, 02164, 617-332-5936, 800-367-4434, http://www.hifi.com

Yamaha YST-M15 — $70

If you are looking for an affordable 2-speaker system, the new Yamaha's are a good choice. They deliver chrisp, clean sound and reasonable bass despite lacking a woofer module. The handy controls are on the right speaker along with a headphone jack. For richer bass consider the Cambridge SoundWorks 3-piece system rather than the Yamaha subwoofer which brings the Yamaha system up to the Cambridge price.

Yamaha Corporation of America, 714-522-9240, 800-492-6242, http://www.yamaha.com

HARDWARE PROTECTION

Panamax Surge Protectors — $45 to $120

Perhaps the best surge suppressors made. The new models allow you to buy modules to attach to the main unit, to expand the number of plugs, phone outlets, etc. A very cost-saving feature. They can protect everything from your computer and home entertainment system to copiers and fax machines. If your system is damaged by a surge while connected to one of its protectors, Panamax will repair or replace it. They cost a bit more than the competition, but they're well worth the difference in cost.

Panamax, 150 Mitchell Blvd., San Rafael, CA, 94903-2057, 415-499-3900, 800-472-5555, http://www.panamax.com/panamax

PowerKey Pro — $100
PowerKey Remote — $40

The PowerKey products provide a cheap and easy way to power up your Mac and run application remotely. The PowerKey Remote allows you to start up any Mac with a keyboard start-up capability from anywhere. PowerKey Pro adds surge protection, the power to start peripherals, restart your Mac, launch programs and run AppleScripts from any remote location with a telephone. Very handy power management device.

Sophisticated Circuits, Inc. , 19017 120th Avenue. NE, Suite 106, Bothell, WA, 98011, 206-485-7979, 800-827-4669, http://www.sophisticated.com

Safeware $0 to $2000 — $50
Safeware $5000 to $10,000 — $120

Did you know that most renter's insurance excludes computers? You have to ask for it specifically, and even then it is usually quite limited. Safeware has inexpensive computer insurance that covers theft and just about anything else that might damage your computer (except leaving a PowerBook unattended).

Safeware, The Insurance Agency Inc., 5760 N. High St., PO Box 656, Columbus, OH, 43085, 800-800-1492, 614-781-1492, http://www.safeware-ins.com/

OPERATING SYSTEM

Macintosh System 7.5.5 — $35

Apple's latest system software update, code-named "Harmony", was in widespread beta-test as of this writing. It adds increased performance (especially when you use Virtual Memory), improved updating and installation, and a new interface on the Extensions Manager. See the related article on in the Features section of this issue for more on this release and what models it runs on. The update is on your Newsletter CD-ROM.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.info.apple.com/swupdates/

LaserWriter 8.4.1 — Appleware (Free)

This latest version of Apple's PostScript printer driver adds desktop printer icons and various interface enhancements to other recent additions such as QuickDraw GX's Desktop Printer function allowing you to select and organize or background printing in the Finder…all without the overhead of QuickDraw GX! If you print to a PostScript printer, you'll want this cool driver. PPD selection makes sure of compatibilities with custom features of any printer.

Apple Computer, 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.apple.com

SimpleText 1.3.1 — Appleware (Free)

SimpleText replaces Apple's venerable, but basic text program, TeachText. Its features are limited; there are no formatting options and no Undo function, but you can select fonts and add styling to your text. It supports drag-and-drop and Speech Manager making it pretty impressive for such a compact and versatile program. But our favorite enhancement is that you can have two text files open at one time, something TeachText never allowed. This alone makes it worth upgrading. SimpleText works fine with earlier versions of System 7. Version 1.3 supports PICT file, QuickTime movie, QuickDraw GX PDDs, and QuickDraw 3-D model viewing.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.apple.com

SimpleText Color Menu 2.1 — Freeware

This handy little SimpleText enhancement installs a color menu, adds find and replace capabilities, word count and more, making Apple's little word processor much more useful. Requires SimpleText version 1.1 or later.

Alessandro Levi Montalcini, C.so Re Umberto 10, 10121 Torino, Italy, Lmontalcini@pmn.it, anonymous ftp: //ftp.alpcom.it/ software/mac/LMontalcini

SOFTWARE

WORD PROCESSING

WordPerfect 3.5.2 (Disks or CD-ROM) — $80

Version 3.5 is about as good as it gets in Mac word processing with a highly customizable interface, button bars and tool ribbons galore. The macro language has power similar to that found in MS Excel. Text boxes allow you to do WYSIWYG page layout. Don't forget the HTML editing capabilities, if you want to use a word processor for that. All this for about the lowest price in the market. The principal drawback is that the great WordPerfect development team was dissolved during the three way passoff that took the product from WordPerfect to Novell to Corel. Corel has announced version 4.0 which should be out shortly. We'll know more when we've seen it. In the meantime, keep an eye on the Corel web site (www.corel.com).

Corel Corp., 1600 Carling Avenue, Ottawa, Ontario, K1Z8R7, 613-728-8200, 800-772-6735, http://www.wordperfect.com

Nisus Writer 5 (Disk or CD-ROM) — $144

Another excellent upgrade for Nisus. New features include easily added "live objects", HTML Export, Quickdraw GX printing and unlimited undo's. Nisus Writer also features multiple clipboards; support for multiple languages within the same document; windows that can be tiled or stacked and split horizontally and vertically; synchronized scrolling; line numbers; and invisible characters. Search and Replace includes a pattern-matching facility that allows users to specify a literal or more general search pattern. Text will wrap around graphics, and graphics can be pasted into text as characters. It has a steeper learning curve than many other programs, but its power and speed make it worth the effort. Some language (not US English) versions require hardware copy protection.

Nisus Software, Inc., PO Box 1300, Solana Beach, CA, 92075, 619-481-1477, 800-922-2993, http://www.nisus-soft.com

ClarisWorks 4.0v4 — $120

This latest version adds a major new capability putting it in league with the big guys—paragraph styles. Incorporating the outline function into the paragraph styles you can now create very large and complex documents easily and powerfully. It has the additional advantage of being very compact, making it ideal for PowerBooks. For a more complete description, see "Integrated Packages."

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 (customer relations), 800-334-3535 (U.S. dealers), http://www.claris.com

Text Editors

BBEdit 4.0.2 — $79
BBEdit Lite 3.5.1 — Freeware

BBEdit was originally a Freeware text editor, but by "popular demand" it has gone commercial. Anyone looking for a great text editor for web pages programming, or anything else, should get BBEdit. It supports project files of the THINK languages and CodeWarrior; works with ToolServer; and has a built-in browser, and lots of other neat things. Best of all, with the latest version BBEdit has become a premier tool for creating and revising Web pages with excellent HTML editing features!

Bare Bones Software, P.O. Box 108, Bedford, MA, 01730-0108, 509-651-3561, http://www.barebones.com

Word Processing Accessories

American Heritage Talking Dictionary 4.0 (CD-ROM) — $40

The American Heritage Dictionary is fast, has 200,000 referenced words (including usage notes, geographical names, and famous people), a thesaurus with over 500,000 words, and a Dictionary of Cultural Literacy with tens of thousands of listings. The definitions are word-for-word identical to the paper edition, minus the illustrations. It has great search capabilities, including anagrams, alternate spellings (chiefly British), wild cards, and WordHunter, which can do Boolean searches. The new version offers better compatibility, access to definitions without leaving your word processing program and wild card searches. But it is big, 14 Megs on your Hard Disk without the talking part.

SoftKey International, One Athenaeum Street, Cambridge, MA, 02142, 617-494-1200, 800-227-5609, http://www.softkey.com

EndNote Plus 2.2 — $180
EndLink 2.0 — $60

Keeping track of your references is always a problem, whether you are preparing a book, professional article, or term paper for school. EndNote Plus, a powerful database that knows all about bibliographic references and styles, almost makes writing term papers fun. It automatically generates a correctly formatted bibliography and footnotes for your paper. There is a slick plug-in module that works in Word, and a new Japanese localized version. EndLink enables you to transfer bibliographic references from online and academic services directly into your personal bibliographic database. A major time-saver for online researchers.

Niles and Associates, 800 Jones St., Berkeley, CA, 94710, 510-559-8592, http://www.niles.com

Working Watermarker v 1.0.11 — $36

This extension lets you place a "watermark" on any document you print. Design your own pattern or watermark. Add "Draft," "For Your Eyes Only," a logo, "Do Not Copy," or whatever you please. Control the process from your normal Print dialog box, where you can control which pages get watermarked, what message to print (you paste in a graphic), and how dark to print the watermark. Simple, yet impressive.

Working Software, Inc., PO Box 1844, Santa Cruz, CA, 95061-1844, 408-423-5696, 800-229-9675, http://www.working.com

Envelopes

MacEnvelopes Pro — $179
MacEnvelopes 5.2 — $60

Printing envelopes is usually an awful chore. MacEnvelopes 5.2 makes it much easier. It works with any printer, massive amounts of records, and any customized layout a user wants; it will even print graphics and postal bar codes. If you want to integrate professional list management, envelope and label graphic design, and printing in one fast package, check out MacEnvelopes Pro. Synex has released a Shareware version of this product.

MacEnvelope Lite v 1.0, The Shareware fee is $25, Synex, 692 10th St., Brooklyn, NY, 11215, 718-499-6293, 800-447-9639, http://www.snx.com

Bar Code Pro 3.0 — $200

A clean and simple-to-use bar code creation tool that kicks out PICT or EPS graphics files, UPCE, Postnet/FIM, Code 39 (a personal favorite!), Pharmacode, etc. The images can be placed directly into page layout programs like QuarkXPress and PageMaker or your Word Processor. Over 40 symbologies and variations are included. The latest version is PowerPC native and comes with PANTONE and Color Check.

Synex, 692 10th St., Brooklyn, NY, 11215, 718-499-6293, 800-447-9639, http://www.snx.com

NUMBER CRUNCHING

Microsoft Excel 5.0a — $295

Excel is universally acknowledged as the best spreadsheet for the Mac and/or Windows. Both versions share a single manual, but that's less of a bother than it would seem. This product is easier to learn and use, and more feature-packed for the power user than the competition. But watch out, Excel is a major resource hog, requiring tons of RAM and loads of hard drive space. If you are not a power spreadsheet user, take a look at ClarisWorks. If you already own an earlier version of Excel, you may also want to forego the upgrade to 5.0.

Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399, 206-882-8080, , http://www.microsoft.com

ClarisWorks 4.0v4 — $120

For those with modest spreadsheet needs, or limited memory and disk space, ClarisWorks is an excellent choice. Though an integrated package, its spreadsheet module is robust, yet compact. For more information see "Integrated Packages."

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 (customer relations), 800-334-3535 (U.S. dealers), http://www.claris.com

DeltaGraph 4.0.1 — $135

As statistical packages become more versatile and business presentations by computer more common, the demand for sophisticated graphing programs is stronger than ever. Spreadsheets like Microsoft Excel have impressive graphing modules, but no program offers a wider range of charts than DeltaGraph. It has dozens of chart types (some unique), PostScript, import/export, slide show effects, warm links with Excel, and free tech support. It's the best value for presentation and general charting. This latest version sports a revamped interface, better speed, hot links to Excel 5.0 files, broken axis support and about 70 chart types, 200 chart styles, and support for AppleScript. It is System 7.5-savvy, and Power Mac native. Save by checking competitive upgrade pricing before you buy.

DeltaPoint Inc., 2 Harris Ct., Ste. B-1, Monterey, CA, 93940, 408-648-4000, 800-446-6955, http://www.deltapoint.com

DATABASE

FileMaker Pro 3.0v3 — $185
FileMaker Pro Server — $900

It's been a while coming, but with version 3, FileMaker Pro is now a fully relational database. And it's faster now that it supports the PowerPC. Scripting and calculating are improved, and with an excellent Windows version, this is the best cross-platform database out there. Even usable file size has been upped. Combine all this power with a low price and relative ease-of-use, even for beginners, is it any wonder that when someone comes into the BMUG office and asks about database programs, 90% are referred to FileMaker? The Server version speeds things up considerably on a network. Upgrades are readily available for only $100.

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 (customer relations), 800-334-3535 (U.S. dealers), http://www.claris.com

Panorama 3.03 — $220

Panorama takes a different approach to database software. The program is entirely RAM based making it blazingly fast. Its extensive macro system aids direct text import making merges easy and almost instantaneous. Various forms are included that would make users of other database programs jealous. SuperObjects let you create your own forms just by dragging buttons, boxes or text boxes into a window. Links are easy to create. Although it is best suited to smaller business and database needs, its performance is hard to top.

ProVue Development Corp., 18411 Gothard Street, Huntington Beach, CA, 92648, 714-892-8199, 800-966-7878, http://www.provue.com

4th Dimension 3.5.3 $680
4th Dimension Server Version 1.5.3 (2 users) $990

4th Dimension is the premier database package for the Macintosh when you are dealing with massive numbers of records. Its interface is relatively easy to use, considering its power. This fully relational database is the program BMUG uses to keep track of members and purchases. It includes support for multiple active windows, background processes, and the ability to make developmental changes on the fly. The pared-down version, 4D First is a less powerful version which is not multi-user capable nor much simpler. We can't recommend it.

ACI US, 20883 Stevens Creek Blvd., Sunnyvale, CA, 95014, 408-252-4444, 800-384-0010, http://www.acius.com

Accessories

Informed Manager $100

Shana has recently upgraded and integrated its programs that allow you to design "intelligent" forms that are ready to be filled out on screen. Tab delimited fields and popup choices make completing the forms easy. It will even do the math for you. The forms can be emailed to others via ccMail, Eudora, PowerTalk, MSMail, and QuickMail. Various add-ons are ready when you want to grow onto a network. The Informed Designer CD-ROM is included. (This CD-ROM has been distributed free over the past year and is a great introduction to this product.)

Shana Corp., 9650 20th Ave. #105, Edmonton, Alberta, Canada, T6N 1G1, 403-463-3330, 800-386-7244, http://www.shana.com

GeoQuery 5.0 $200

For complete business mapping needs including the location of every 5-digit ZIP code and over 26,000 places, plus 225,000 miles of highways, GeoQuery is an excellent choice. It easily imports and incorporates information from your own data bases and from programs such as FileMaker, Excel and many others. It even has links to NOW Contact and TouchBase Pro. Data can be shown as pushpins or shaded areas. The interface is a bit cludgy, and even on a PowerPC some map builds take time. Yet it remains the best way to gain a geographical perspective on your data without hiring a cartographer.

GeoQuery Corp., 387 Shuman Blvd., Suite 385E, Naperville, IL, 60563, 708-357-0535, 800-541-0181

Street Atlas USA 3.0 (CD-ROM) $20

Incredible as it may seem you can locate virtually any street in the US with Street Atlas USA. Search by street name, ZIP code or telephone exchange and zoom in and out with the click of a mouse. The new version provides links to certain phone search databases and allows you to customize the maps. There are a few errors here and there, as with any atlas, but where else can you find this level of detail in such a compact and easy to use form, and for so little money?

DeLorme Mapping, Lower Main Street, P.O. Box 298, Freeport, ME, 04032, 207-865-1234, http://www.delorme.com

SelectPhone 4.0 $100

It's like having every phone directory on a CD-ROM… er, 6 CD-ROMs actually. SelectPhone is the most Mac-like and most accurate of the directories out there. It's SmartFind feature works well, and GeoTarget lets you set your search boundaries. Available in a variety of different packages, it is updated quarterly, although updates are pricey.

Pro CD, 508-750-0055, 800-992-3766, http://www.procd.com

Tango for Filemaker Pro $300

If you want to publish your Filemaker database on the Web, you need Tango. It's easy-to-use graphical interface bypasses calculating and HTML coding required by other Common Gateway Interfaces. Drag and Drog your fields if you like or use pop up menus. HTML is created automatically. Tango also includes some display formatting options. Controlling access to portions of your database and responses to requests is easy with Query Builders tools. There are some scripting quirks and Tango ain't fast, but it's the best option currently available.

EveryWare Development, Mississauga, ON, Canada, 905-819-1173, 888-819-2500, http://www.everyware.com

INTEGRATED

ClarisWorks 4.0v4 — $120

Version 4.0 of this great "works" program adds a bunch and puts it even further in front of the rest of the pack. While most integrated software packages have many separate modules interacting at minimal levels, ClarisWorks allows you to have a fully functional spreadsheet in your graphics document or word processor, or whatever. The word processing and spreadsheet modules are great for everyday use and will easily meet the needs of the basic and intermediate user. Amazingly, with all this power, ClarisWorks works just fine with less than 1 meg of RAM, making it perfect for PowerBooks. With the (included) Claris translators, you can also access documents made by most of the popular applications on the market. Competitive upgrades are $70.

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 (customer relations), 800-334-3535 (U.S. dealers), http://www.claris.com

PRESENTATION

Persuasion 3.0.2 — $245

Persuasion is the product of choice for slide and screen business and educational presentations. A new set of palettes was added with version 3, permitting improved control over text and color. Its impressive library of templates and chart styles was also enhanced. Persuasion supports importing of data from a variety of other programs. The interface is much friendlier but still has a steep learning curve. This powerful program remains the choice of the pros for its ability to create graphs and manipulate images. Version 4 includes web publishing capabilities and better integration with other Adobe products.

Adobe Systems, Inc. 1, PO Box 6458, Salinas, CA, 93912, , 800-628-2320, http://www.adobe.com

Pro View 1.3 — $70

If your presentation needs are fairly basic, Pro View lets you can avoid the time and money needed to buy and master Persuasion. The interface is simple and starightforward and has excellent drag and drop support. You can blend text, graphics, QuickTime sounds video and sounds, and create self running slide shows. A self-contained viewer lets you distribute your slide shows to anyone. There is no path animation and transition tools are limited. But overall, it packs a lot in an simple, inexpensive package.

E-magine, 600-603-1474, http://www.e-magine.com

IMAGE PROCESSING

Adobe Photoshop 3.0.5 — $550

Photoshop has long been the image editing program of choice for serious tweekers. Full featured and replete with hardware add-ons and software plug-in modules, it works well with a variety of readily accessed devices and programs. There are palettes for channel control, path creation, and on-the-fly color selection, plus layering and color correction tools. But it's RAM-hungry and a disk space hog, and take time to learn. Version 4 speeds things up a bit and is somewhat easier to use. But the version 4 interface redesign will require time to learn. The new Navigator pallette will provide flexible panning and zooming while batch processing can be animated using the Actions palette. Layering for color adjustments is new and distortions improved. There is even simple Web support. But it still lacks adequate color separation tools, and multiple undos.

Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912, 800-685-3526, http://www.adobe.com

Color It! 3.2 — $100

A poor-folks' Photoshop, Color It! offers a lot of power for a very low price. You can do all the standard imaging editing stuff, work with plug-ins, and apply special effects. It is customizable and flexible, and yet sophisticated as it provides complete pressure control and an excellent Unsharp Mask filter, for example. Convolutions functions are powerful, presets are accessible. It doesn't have the power of Photoshop, but for beginners and even intermediate users, this cheap paint program fits the bill, and doesn't require mountains of memory or endless expanses of disk space.

MicroFrontier, Inc., PO Box 71190, Des Moines, IA, 50325, 515-270-8109, 800-949-5555, http://www.microfrontier.com

DeBabelizer Toolbox 1.6.5 — $260
DeBabelizer Lite 1.1 — $70

The Toolbox offers image processing and translation for dozens of graphic and animation formats and platforms. Images can be automatically processed using internal scripting. In addition to editing and manipulation palettes the Toolbox supports a variety of plug-ins. The Lite version offers robust translation for bit-mapped, scanned and paint files but without the scripting, palette manipulation and image processing features. Both versions handle 24-bit and 8-bit color reduction.

Equilibrium Technologies, 475 Gate Five Road, Suite 225, Sausalito, CA, 94965, 415-332-4343, 800-524-8651, http://www.equil.com

GraphicConverter 2.5.1 — $35 (Shareware)

GraphicConverter is a Shareware application that can open and read most common Mac, ATARI, Amiga and IBM formats to Mac formats and convert them from one format and back again as desired. It supports printing on almost any Macintosh printer. You can use GraphicConverter to convert files you find online for use in other programs, to view files, or to print them out. A versatile utility for viewing graphics from almost any source.

Lemke Software, Insterburger Str. 6, 31228, Peine 100102.1304@compuserve.com

JPEGView 3.3.1 — $Postcardware

Useful and stable, this well designed image viewer is not only good for JPEG-compressed images but for a variety of formats. Nice interface and extensive online help make this a good viewer choice on any Mac.

Aaron Giles, 182 E. 95th Street 11E, New York, NY, 10128, giles@med.cornell.edu

GifBuilder 0.4.1 — $Freeware

Don't stop with a static GIF image. With GIF Builder you can create animated GIF files, scripting the process if you like. Input anything from existing animated GIF's, a series of PICT's, TIFF files, QuickTime movies and more to create your images. You can control a number of image factors including pixel depth, color, interlacing, dithering, etc. Very nice.

Yves Piquet, Av. de la Chablière 35, 1004 Lausanne, Switz., piquet@ia.epfl.ch

Kai's Power GOO — $50

Ever wondered how to make that picture of Uncle Fred look really "special?" Try Power Goo. Load the image and twist and stretch and brush until he looks just right. Lot's of fun for not much money. Hey, it can even be practical!

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

PLUG-INS AND EXTENSIONS

Kai's Power Tools 3.02 — $125

A set of over 30 powerful generators and filter plug-ins for Adobe Photoshop, Fractal Design Painter, and other programs that use plug-in technology. The interface alone makes this program an essential part of any self-respecting artist's software toolbox. New features include KPT Lens F/X for exploring filter enhancements in real time, a spheroid designer, and an Interform to mix textures precisely. Be sure to get your version updated with the latest maintenance patch.

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

The Black Box 2.0 — $90

Lean and clean filtering machine for Photoshop. Creates lighting effects, including drop shadows, reflections, and bevels. The ten filters can also be previewed. Very cool package.

Alien Skin Software, 800 St. Mary's St., Ste. 100, Raleigh, NC, 27605-1457, 919-832-4124, , http://www.alienskin.com/alienskin

Andromeda Filters (Series 1 through 4) — $80 to $100

An impressive series of Photoshop filters. Each element of the series has a separate focus: photography (optical lens effects), 3D effects (projections onto shapes), screens (line conversion and alternative halftone patterns), and textures. The 2nd and 3rd programs in the series are especially strong.

Andromeda Software, 805-379-4109, http://andromeda.com

KPT Convoluter 1.0 — $125

Use convoluter to custom design bluring, edge-detection, focus and color embossing. A one-trick pony that is very good at its trick.

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

TypeCaster 1.0 — $125

Adds fully rendered 3-D characters to any Photoshop image. Many positioning and rendering options, although no custom kerning is supported. Lighting and texture controls are included.

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

GRAPHICS AND DRAWING

Adobe Illustrator 6.0 — $390

Adobe's PostScript illustration program continues to improve. Illustrator gives you the ability to edit and create objects "in-preview," organize objects into layers, and change paint attributes modelessly. Illustrator has always been precise at generating clean PostScript but in the past has had the least automated features, requiring users to create blends of objects to add simple gradient fills. With Version 6, Illustrator has added seamless integration with Photoshop and PageMaker (drag and drop), support for Photoshop filters, built-in color separation, path patterns for borders, frames, and other unique shapes, plus a rasterizing feature that converts any Illustrator image into pixel-based artwork which can be resized at any resolution. But in the area of image import, blends, traces, and especially text speed and handling, it is still a bit inefficient.

Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912, 800-685-3526, http://www.adobe.com

FreeHand 7 — $390

FreeHand has undergone major improvements since being acquired by Macromedia. It has become a very flexible program that can be configured to fit your particular needs. Styles apply to graphic elements as well as text. Text handling is speedy and well implemented. Xtras (plug-ins) can filter or manipulate. Third party and Illustrator plug-ins are supported. So are Photoshop Plug-ins, although those supplied by Adobe may take a bit more effort. The latest revision revamps the interface with tabbed palettes and frag-and -drop with Photoshop and other programs. Production features are greatly improved, and there are major drawing enhancements. The biggest problem is very poor documentation.

Macromedia, 600 Townsend Street, San Francisco, CA, 94103, 415-252-2000, 800-326-2128, http://www.macromedia.com

KPT Vector Effects — $120

KPT Vector Effects is a powerful set of plug-in extensions for Adobe Illustrator and Macromedia FreeHand that enable you to create special effects like distortion, warping, 3D extrusion, bevel embossing, perspective distortion and shadowing that manually would have taken hours to create or simply would not have been possible. Similar to Kai's Photoshop filters, Vector Effects' interface is intuitive and easy to use.

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

ClarisDraw 1.0v3 — $200

ClarisDraw is the next generation of the MacDraw Pro drawing standard, incorporating more than 75 new features. New tools include regular color fills, gradients, beziers and shadows, full 24-bit color painting, image editing effects, presentation special effects, QuickTime video support and enhanced text handling with linked frames, text wrap and style, and built-in intelligence. SmartSymbol libraries and 3,400 pieces of clip art provide new drag-and-drop graphics creation and editing capabilities. Compatible with MacDraw II and MacDraw Pro files and data, as well as other industry-standard file formats (EPSF, TIFF, PICT, PICT2, CGM, MacPaint, and QuickTime). Seamless cross-platform (Mac and Windows) transparency across applications and platforms. Targeted for the business environment.

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 (customer relations), 800-334-3535 (U.S. dealers), http://www.claris.com

SmartSketch 1.0 — $50

This innovative drawing program from the creators of Silicon Beaches' SuperPaint takes object-oriented drawing to a new level. Great features include Shape recognition which allows you to smooth lines and correct misshape objects to produce smooth precision drawings. There's no dealing with complex bezier handles; you can simply reshape images by dragging any line segment. It features 500+ drag and drop EasyArt images and includes eight interactive on-screen tutorials. SmartSketch also supports pressure sensitivity, so you can use it with your drawing tablet. A great product for creating high-resolution EPS drawings.

FutureWave, Inc., 8305 VIckers Street, Suite 200, San Diego, CA, 92111-2111, 619-637-6190, http://www.futurewave.com

PAINTING

Dabbler 2.04 — $45

This inexpensive product from the programming masters that brought us Painter and Sketcher has exceptional features. Designed for basic Mac users, it offers ease of use and compatibility with many types of Macs. Users can have fun creating natural-looking art—from finger painting to impressionistic oil painting in 16-bit color. The "tracing paper" option helps assure accurate animation. For best results, use a pressure-sensitive tablet like the WACOM; do not use a mouse.

Fractal Design Corp., 335 Spreckels Dr., Ste. F, Aptos, CA, 95003, 408-688-8800, 800-647-7443, http://fractal.com

Painter 4 — $360

The best textural painting software there is for the Mac. This powerful program handles multiple floating selections, a gradient composer to create color ramps and gradients, a wealth of painting tools and effects, and multimedia tools. A new mosaic feature allows cloning or painting with tiles. You can even apply Painter's tools to QuickTime movies frame by frame. If you've got a pressure-sensitive tablet, this is the way to go, hands down (or is that pens down?).

Fractal Design Corp., 335 Spreckels Dr., Ste. F, Aptos, CA, 95003, 408-688-8800, 800-647-7443, http://fractal.com

DIGITAL VIDEO

QuickTime 2.5 — Appleware (Free)

QuickTime has set the standard for digital video across the Mac–Windows barrier. Capable of playing back movies, doubled to fill a 13-inch screen at 30 frames per second, this technology has gone from amazing to astounding. QuickTime 2.5 also supports MIDI and plug-in MIDI-instrument libraries. The latest upgrade improves MPEG and Motion JPEG support.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-538-9696 Dealer Locations

Peter's Player 1.1 — $20 (Shareware)

A replacement for Apple's Simple Player, this program does a number of tricks to make playing QuickTime movies as fast and smooth as possible. It automatically sets the pixel depth to the best setting, hides the scroll bar on the bottom, and does other nifty things. Optimized for either the 680x0 Macs or the PowerPC, this is a major improvement over most other players, especially on the older Macs.

Peter Lee, 39 Canton Ave., Amherst, MA, 01002-1803, lee@cs.umass.edu

Adobe Premiere 4.2.1 — $490

Powerful digital video software with intuitive user interface displays. Tracks in "filmstrip" style, allowing users to see all the details in clips. Animated icons simplify selection of digital effects including wipes, fades, dissolves, zooms, and page turns. Adobe Photoshop-compatible filters can be applied across video segments to achieve special effects and image control. You can superimpose titles, graphics, and even other video images to create dramatic effects. Comes standard with a CD-ROM containing tutorials, clip media, and documentation.

Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039, 415-961-4400, 800-833-6687, http://www.adobe.com

After Effects 3.1 — $650

Superb digital post-production tool for multimedia, even broadcast video. You can engage in precise motion control, time remapping and batch rendering, plus multiple effects per layer. The result is smooth motion graphics, eye-catching special effects and superior composites. As an Adobe product it works well with Photoshop, Premier and Illustrator. Very powerful.

Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039, 415-961-4400, 800-833-6687, http://www.adobe.com

MULTIMEDIA AUTHORING

Macromedia Director 5 — $800

A powerful animation and authoring tool for creating high-quality multimedia presentations, animations, and interactive applications. Its interface makes use of Lingo commands. The latest version allows Mac users to create productions for other platforms, and with Shockwave (included) add multimedia effects to Web pages. Currently Director supports Netscape 2.0 Plus and plans support for other browsers.

Macromedia, 600 Townsend St., San Francisco, CA, 94103, 415-252-2000, http://www.macromedia.com

HyperCard 2.3.5 — $90

The basic engine behind most current CD-ROMs. The newer version 2.3 adds Power Mac native code and enhanced color support and scripting commands. While not exactly high-level, it does many jobs that other development engines just can't compare with as far as simplicity and accessibility. Offers stand-alone application capability and inexpensive distribution.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.hypercard.apple.com

RENDERING AND 3-D

Adobe Dimensions 2.0 — $128

The easy way to take your PostScript drawings from 2-D to 3-D. Lets you revolve paths around an axis, extrude, map 2-D or 3-D objects onto any curved surface, and combine shapes to make more complex objects. Another excellent Adobe product.

Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039, 415-961-4400, 800-833-6687, http://www.adobe.com

Poser 1.03 — $100

This amazing and inexpensive new product renders human figures making it easy to incorporate photo quality models in infinite variety. The figures are easy to manipulate into realistic positions and to render using custom color and bump maps. Check out the cover of this Newsletter to get an idea of what we mean.

Fractal Design, 335 Spreckels Dr., Ste. F, Aptos, CA, 95003, 408-688-8800, 800-647-7443, http://www.fractal.com

KPT Bryce 2.0 — $170

The landscape rendering program used to create the Fall '94 Newsletter cover. Spectacular landscapes, dozens of preset skies, grounds, and terrains which can be combined in countless ways. It took forever to render (until we got the Power Mac native version!), but the results were worth it. Another incredible package from Kai and MetaTools.

MetaTools, 6303 Carpenteria Av, Carpenteria, CA, 93013, 805-566-6200, 800-472-9025, http://www.metatools.com

Alias Sketch! 2.02 — $560

A free-form 3-D illustration and design application that provides all the benefits of working in 3-D: shape creation and manipulation; the ability to view objects from any perspective; and automatic calculation of real-world lighting, shadows, reflections, and textures. Very cool.

Alias Research, Inc., 110 Richmond St. E, Toronto, Ontario, M5C 1P1, Canada, 416-362-9181, 800-447-2542, http://www.alias.com

StudioPro Blitz 1.75+ — $900

While the ranks of three-dimensional players have swelled since Strata Vision 3D first come on the scene, Strata is still one of the few to offer a complete modeling, rendering, and animation environment. A new more-intuitive interface expands the studio-quality Animation System with extensions that include Shatter, Atomize, and Explode. Native Power Mac acceleration speeds up the photo-realistic rendering algorithms. A PowerMac is required and QuickDraw 3D is supported.

Strata Inc., 2 W. Saint George Bled,. Ste 2100, St. George, UT, 84770, 801-628-5218, 800-869-6855, http://www.starta3d.com

Infini-D 3.5 — $450

For beginning 3-D artists, Infini-D is a good choice. It integrates modeling, rendering and animation into a relatively easy to use interface. While it is not a true Boolean modeler it does incorporate functionality that provides a good approximation of such effects. New features in this upgrade include SuperFlare lens flaring effects and Shadow Catcher to control a shadow's transparency. Speed of certain effects has also been improved.

Specular, Andover, MA, 413-536-3100, 800-433-7332, http://www.specular.com

LogoMotion 2.0.1 — $100

For 3-D type design LogoMotion lets you antmate type . The new interface and enhanced rendering abilities set this upgrade apart. A good, fast choice for the new and intermediate user.

Specular, Andover, MA, 413-536-3100, 800-433-7332, http://www.specular.com

PUBLISHING

PageMaker 6.5 — $550

Our choice for the premier page-layout application. Many would argue for QuarkXPress, but Quark's tech support, interface quirks, corporate policies, and code-stability leave too much to be desired. PageMaker has long been the follower in the feature race, but Adobe's implementation far exceeds the rest of the market in ease of use, technical support, and customer service. Pagemaker supports multiple master pages, fast object grouping, masking, Photoshop plug-ins, auto-trapping, auto Acrobat PDF file creation, and complete HTML exporting. While these are major advancements we are still looking forward to a complete Adobe-style "Quark-killer". Version 6.5 improves layers and HTML conversions and adds tabbed palettes (perhaps too many of them) and support for plug-ins. But its frame-based layout options still need work.

Adobe Systems, Inc. 1, PO Box 6458, Salinas, CA, 93912, 800-628-2320, http://www.adobe.com

Acrobat 3.0 — $200
Acrobat Reader 3.0 — $Freeware

The vision of Adobe to produce an electronic document-exchange file format, free of platform and font limitations, while carrying all the detail and complexities of PostScript is further refined with version 3. The Acrobat Portable Document Format (PDF) lets you transport documents to and from any Mac, DOS, Windows, or UNIX application—and environment. Electronic documents are easy to produce and edit with any program that outputs PostScript. Take raw PostScript code and compile Acrobat PDF files, embedding fonts and EPS graphics for perfect translation to any screen. Fully Power Mac native. The Acrobat Reader 3.0, is freely distributable and fits on one HD disk (and now includes a complete and Power Mac version of ATM!). This latest version integrates with major web browsers and does full dithering of text.

Adobe Systems, Inc. 3, 1585 Charleston Rd., Mountain View, CA, 94039, 415-961-4400, 800-833-6687, http://www.adobe.com

FONTS

Adobe Typeface Library — Prices vary

From the creators of PostScript, Adobe’s fonts are the most professionally hinted and exact to the designer’s specifications. Whether your output is created on a StyleWriter using ATM or on a high-end Linotronic, Adobe fonts will always look their best. Adobe’s MultipleMaster font technology with flexible weights and widths is the wave of the future, and used throughout all BMUG publications.

Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912, 800-685-3526, http://www.adobe.com

The BMUG Font Collection & Desktop Publisher's Toolkit — $25

BMUG has collected over 1,700 PostScript and TrueType fonts all in one place. This collection includes the contents of the entire BMUG Font Library! Many are as good as the fonts from Adobe. This CD-ROM also includes tons of Shareware publishing tools every Mac user shouldn't be without. There is no better product for exploring font options on a Mac while keeping your pocketbook intact.

BMUG, Inc., 1442A Walnut St., #62, Berkeley, CA, 94709-1496, 510-549-2684, 800-776-2684, http://www.bmug.org

Foreign Language Laser Fonts — Prices vary

The best foreign-language LaserWriter fonts around. They have PostScript Type 1 and TrueType fonts for most alphabets, including the hard ones like Hebrew and those from East Asia.

Ecological Linguistics, PO Box 15156, Washington, DC, 20003-5156, 202-546-5862

Publishing Accessories

Adobe Type Manager 3.9 — Free

ATM renders PostScript fonts for any QuickDraw device (the screen, StyleWriters, etc.). It is a requirement for any sort of page layout, newsletter creation, or sign-making—just about anything that requires text at uncommon sizes. It takes a bit of RAM, but is worth it for the beautiful way it displays fonts. Version 3.8.3 is available free as part of Adobe Acrobat Reader 2.1, which is downloadable from the BMUG BBSes; it is also available on the new BMUG Font ROM. ATM is now Power Mac native and can even render KanjiTalk PostScript fonts. Version 4.0 Deluxe is due soon with much greater functionality. The copy of version 4.0 included with Acrobat Reader 3.0 is not a final version and is a bit conflict prone.

Adobe Systems, Inc. 2, PO Box 6458, Salinas, CA, 93912, 800-685-3526, http://www.adobe.com

Now WYSIWIG Menus (Part of NOW Utilities 6.5) — $85

Far and away the most conflict-free Font menu modifier for showing you what your fonts look like when you need to know—when your choosing them from the Fonts menu. Unifies font families and works in most programs. Customizable to prevent problems with programs that don't like it.

Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205, 503-274-2800, 800-237-3611, http://www.nowsoft.com

PopChar Lite 2.7.2 — Postcardware (Free)

PopChar is a control panel that with the touch of a menu bar icon generates a window displaying every possible character (or set of characters) available in the current font. Insert the character into your document by simply clicking on the character in the PopChar window. It even displays the keyboard combination used to generate that character, if you want to memorize it. One of the best Mac font utilities, and it's free! Available on BMUG's Text C1 disk for $3, or on the BMUG Font Collection and Desktop Publisher's Toolkit CD-ROM. But as you might guess from the "lite" in the name of the newest version, PopChar is going commercial. Thank you Günther Blaschek for the many years of wonderful Freeware.

Günther Blaschek, Petzolldstr.31, A-4020 Linz, Austria, gue@soft.uni-linz.ac.at

MasterJuggler Pro 2.0 — $50

If you deal with lots of fonts, you need a font manager. Many thought System 7.1's Fonts folder would do it in, but if you have more than a couple dozen fonts, you will quickly reach System 7's practical limits. When you do, check out MasterJuggler Pro. Like the competition, MasterJuggler supports drag-and-drop. But it does more, like checking for resource conflicts on the fly, checking for corruption on the fly, saving copies of fonts used just in your document for taking them to a service bureau. Its compression algorithm for fonts and sounds is better. It tells you when you're missing printer fonts before you print. In short, it takes care of all the hidden details and then keeps you from making mistakes. Perhaps it's biggest drawback is a quirky interface. Unlike the competition, MasterJuggler has been regularly improved and refined to support the evolving Mac OS.

Alsoft, Inc., 22557 Aldine Westfield, Spring, TX, 77373, 713-353-4090

OCR

OmniPage Professional 6.0 — $490

OmniPage has always been among the fastest and most accurate of the OCR packages. Currently, its expert tools make it the clear choice for power users. The Preview window allows you to zoom in and check the brightness settings. Multiple zones per page can be selected and specified for different content. AccuPage can process tinted or shaded pages. There is a training mode for non-standard characters. The after-processing view is actually a full-featured word processor with a spell checker, and there is a separate module for editing grayscale images. 3-D OCR permits viewing the depth of character pixels and multiple zones allowing zone templates to be saved and reused. The latest version boasts better accuracy, and it's accessible from any program. It's expensive, but it does everything you are likely to want. If you already own a competitor's product, you may be able to purchase this program for as little as $129. Version 7 is promised for release in the near future.

Caere Corp., 100 Cooper Ct., Los Gatos, CA, 95030, 408-395-7000, 800-736-5735, http://www.caere.com

TextBridge 3.0 — $75

In the past, if you wanted to do OCR your only choice was to spend $500 on a program like OmniPage, or pay less for software that was either feature-poor or error-prone. Now, with TextBridge Mac, anyone can afford high-quality OCR. TextBridge Mac is among the most accurate OCR programs and even does a good job with faxes—the bane of any OCR program. It can even handle graphics with features like a TIFF Queue that can process multiple images into a single document. It supports the TWAIN standard and is PowerPC native. Unless you are into heavy-duty OCR, TextBridge Mac can't be beat for price and performance. TextBridgePro is pricier, costing about as much as an OmniPage Pro upgrade. The latter is the better value.

Xerox Imaging Systems, Inc., 9 Centennial Dr., Peabody, MA, 01960, 508-977-2000, 800-248-6550, hppt://www.xerox.com

FINANCES

Quicken 7.0 — $35

For personal financial record keeping that you can't quite get yourself to do on paper, the "regular" version of Quicken offers an option. It is fast and offers beautiful color graphics, improved tax stuff, loan amortization, and more. It can auto-enter repeating and automatic payments. You can zoom in to detail reports and actual transactions. Online banking and investment tracking capabilities. The biggest changes for version 7 are interfacae refinements, better online help, and a printed manual. Investment tracking and organization are stronger too. The Quicken Deluxe CD-ROM does have a few new features like a retirement planning module abd impressive financial planning worksheets. Deluxe is also much better integrated than the previous version. Nevertheless unless you need its special additional features, the basic version is the best choice.

Intuit Inc., 2650 East Elvira Rd. #100, Tucson, AR, 85706-7123, 415-322-0573, 800-624-8742, http://careermosiac.com/cm/intuit/intuit1.html

M.Y.O.B. Small Business Accounting 6.01 — $77
M.Y.O.B. Small Business Accounting 6.01 with Payroll — $135

This is a very innovative package, great for those who want to computerize the books for their small business, but who don't know much about accounting. First-rate manuals, navigation screens, CD-ROM help and a video all help you get started. It's a big help as some of the MYOB interface isn't very Mac-like. Screens can be customized to look like their paper equivalents (e.g. invoices, purchase orders, or checks). It is a full featured accounting program with general ledger, check writing, inventory management and more. You can track the progress of any job and generate fully customizable reports. It can even dial the phone, and link notes to a calendar and to do list. This single user program is perfect for a sole proprietor or small business owner. The new version adds a Quicken import feature.

Best!Ware, 300 Roundhill Dr., Rockaway, NJ, 07866, 201-586-2200, 800-322-6962, http://bestware.com

MultiLedger 4.0 — $120
CheckMark Payroll 5.5 — $100

Every accountant who has seen this package likes it for its simplicity and direct approach. Modules include accounts payable, accounts receivable, general ledger, and inventory. It has full import and export capabilities and you have great flexibility in preparing and formatting reports. It is also multi-user supporting up to 10 users. It is PowerPC native and the payroll module has everything you are likely to need to calculate everything from payroll deductions to 401(k) accounts. Great program for the small- and medium-sized business owners for whom accounting terms are not a foreign language. It supports multiple users, and even works on older Macs. It's modest memory and disk requirements really set it apart from the competition.

CheckMark Software Inc., 724 Whalers Way, Bldg. H, Fort Collins, CO, 80525, 303-225-0522, 800-444-9922

MacInTax — $40

Nobody likes to do taxes, even on a Mac. But tax software can make the process a bit less painful. If you itemize deductions or use schedules C, D, or E, it's a lot easier to do your taxes with a computer program than to fill out the forms by hand. The trouble is, there are such time pressures to get tax programs to market that bugs and problems always pop up. MacInTax is one of the easier tax programs to use, and it includes the option of electronic filing for those who want a fast refund (the IRS charges a premium for this). There are additional packages for state returns and a professional series, but bugs extend to these as well, and the state packages often have woeful interfaces. It is essential that if you use one of these programs, you must keep yourself informed of bug fixes and problems, by calling Intuit regularly during tax season if necessary. The guided tour of your taxes is well laid out and helpful, but preparing taxes, even with MacInTax, is not for the novice. If you have any doubts, contact a professional.

Intuit Inc., 2650 East Elvira Rd. #100, Tucson, AR, 85706-7123, 415-322-0573, 800-624-8742, http://careermosiac.com/cm/intuit/intuit1.html

PERSONAL INFORMATION MANAGEMENT

Now Up-to-Date & Contact 3.6 — $70

Together at last, the latest version formally bundles these two well integrated products. They are the best way to organize information about your friends, clients and associates. They are both fast and the Reminder and QuickContact menus are unusually clever and well implemented. The consistent look and feel is a real bonus. A free form comments area adds flexibility and QuickPad lets you instantly enter a note or message into the program. Another nice feature is the ability to access phone numbers or events from the menu bar without starting the application. Now Up-to-Date is richly customizable, with more features than any other time manager on the market, and fully networkable, too! The new version supports drag and drop from WEB pages, improves printing support and is PowerPC native.

Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205, 503-274-2800, 800-237-3611, http://www.nowsoft.com

AreaCodeFinder 4.2 — $15 (Shareware)

With the number of area codes soaring it's hard to keep track of what prefixes you need to punch. AreaCodeFinder helps by identifying locations within an area code and area codes for specific locations. Plus it's updatable. But what will happen if some areas are assigned two area codes?

John J. Calande III, 1438 South 8th Street, Philadelphia, PA, 19147, 215-551-0918, jjciii@aol.com

InfoGenie — $55

A fast and easy way to store any personal information you may have. InfoGenie is an unstructured free form database. You can define fields or not as you choose. You can keep track of your data in your own way. It also prints envelopes and labels, and dials the phone. You might call it the 7.5 successor to SuperQuickDex.

Casady & Greene, 22734 Portola Drive, Salinas, CA, 93908, 408-484-9228, 800-359-4920, http://www.casadyg.com

Reunion 4.0 — $100

For personal record keeping that takes you back to your roots, there is no genealogy software that beats Reunion. It is powerful, easy to use, and you can't beat the charts. You can even put in a picture of Aunt Minnie or Uncle Ned. Information is easily added, and you can customize fields. It's much faster now that the latest version is no longer HyperCard based; reason alone for users of older versions to upgrade. As with all genealogy programs there are limitations; non-traditional Western European relationships don't easily fit. So if you have ancestors in San Francisco or Utah.

Leister Productions, PO Box 289, Mechanicsburg, PA, 17055, 717-697-1378, http://www.LeisterPro.com

Gene 4.1 — $15 (Shareware)

For the person just starting out with their family tree, try Gene. Its information fields are pretty basic, but it creates nice charts and keeps everyone connected. The data can also be exported into Reunion if you ever want to move up.

Diana Eppstein, 8 Owen Court, Irvine, CA, 92715

ONLINE

ZTerm 1.0.1 — $30 (Shareware)

ZTerm is a versatile telecom program that features XModem, YModem, and ZModem file transfers; VT100 terminal emulation; ANSI screen control; and a scrollback buffer. This version also allows some simple scripting. Comprehensive docs are included in a separate file. Even though it's Shareware, it outshines many commercial offerings, and the price can't be beat. Despite its non-GUI appearance, it remains the good choice for connecting with a remote site. Available on BMUG's Telecom A1 disk for $3, and on Planet BMUG.

David P. Alverson, 5635 Cross Creek Ct., Mason, OH, 45040

Newswatcher 2.13 — Freeware

It is easy to let your web browser do all the work when you log onto the internet. Alas, they just don't do all things well. If you want to check or post online news, this is a great tool. Another gift to the community from John Norstad (developer of Disinfectant). It does not support reading the news offline however.

John Norstad, Northwestern University

Eudora Light 1.5.5 — Freeware

Getting email of the net is relatively painless with Eudora. The Freeware version is fine for most folks. If you need more heavy duty email software, consider Eudora Pro or Claris eMailer.

Qualcomm, 619-597-5113, 800-238-3672, http://www.qualcomm.com

Anarchie 2.0.1 — $10 (Shareware)

Internet browsers also do not do a great job of searching for and retrieving files off the net. This is where a program like Anarchie shines. Browse FTP sites, upload or download files, or find them using Anarchie. It requires System 7 and MacTCP 1.1 or later. System 7.5 and MacTCP 2.0.6 or later are both highly recommended. This version is Open Transport compatable, has fixed support for non-standard FTP ports and displays more progress information. It also has a great list of anonymous FTP sites.

Peter N. Lewis, Stairways Software, support@stairways.com.au

FreePPP 2.5v2 — Freeware

Great little program for easy connctions between your Mac and the internet via phone lines avoiding the usual network connections.

The FreePPP Group

Internet Config 1.1 — Freeware

Make your internet life easier. With Internet Config you only have to enter your email address once and your information gets placed in the preferences of most of your Internet applications automatically by reducing the number of times which you need to enter your Internet preferences into the various preferences dialogs of all your Internet applications. Common preferences can just as easily be edited. Some programs must be modified to take advantage of the program however.

Late Night Silly Software, internet-config@share.com

Transparency 1.0 — Freeware

If you want to use transparent GIF images on your Web page, this simple utility is just what you need. It sets the transparency index. Just drag a GIF onto the Transparency icon and the image opens up against a grey background ready for you color and customize.

Aaron Giles, giles@med.cornell.edu

Future Splash Animator — $240

In the fast changing world of the Web, designing unique pages that grab the eye becomes more and more daunting. Enter FutureSplash Animator. It will enable you to create great graphics and animation, and create it with incredible ease. No sound support, but otherwise pretty impressive.

Future Wave Software, 619-552-7680, http://www.futurewave.com

Apple Remote Access 2.1 — $189
Apple Remote Access 2.1 Client — $59

This utility has changed the way people do business. It's an enabling bit of software that's easy to use. If you need remote access to your computer or network (for file sharing, email, or running your database remotely), this is the product. Attempts have been made to do this, using hardware and software combinations, but they were cumbersome and slow. ARA installs easily, works simply, and features security and speed. After connecting, your remote volumes and printers become available on your local machine. The latest upgrade offers support for ISDN and high speed modems (28.8 Kbps/V.34), an expanded set of scripts and is Open Transport compatible.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.apple.com

Nok Nok 2.0 — $50
Nok Nok A/S AppleShare Server — $159

System 7's file sharing abilities are really nice, but security could stand a lot of improvement. Nok Nok fills this gap by telling you who's logging in, and from where. You can limit how long they can share, and it allows you to keep a log of who's been on and when. Features include file sharing performance adjustment, PlainTalk support (it'll announce the name of the person accessing your machine), and LookOut! (a utility that reveals server access privileges in the Chooser).

The AG Group, Inc., 2540 Camino Diablo #202, Walnut Creek, CA, 94596, 510-937-7900, 800-466-2447, http://www.aggroup.com

ShareDevil — ZiffWare (free)

This utility is "ZiffWare" by the late Robert Hess used to be called "Shaman." It's an easy way to control file sharing, a must for people who are worried about who's logged into their computer over the local network. It is available on ZiffNet and services which carry it. If you really appreciate Mr. Hess' efforts, his family asked that donations be sent to DQ (Digital Queers) in San Francisco.

Ziff-Davis Publishing Co.,

NetDoubler 1.0 — $70

Every LAN manager and network user gets frustrated with slow network transfers. One way to improve the situation is to install the NetDoubler control panel on all Macs on your network where it goes to work transparently to boost your network by almost double on small to medium size files. There is less improvement with large files. Works with any card, not just Asanté's. It is bundled with their FastEthernet cards. OpenTransport 1.0.8 or later required.

Asanté Technologies, 408-435-8388, 800-662-9686, http://www.asante.com

PROGRAMMING

Metrowerks CodeWarrior Gold 10 — $330

CodeWarrior is becoming the programming environment of choice for development on the Macintosh. Compiles for both the 680x0 and Apple's new Power Macs (in native mode). CodeWarrior supports development for the Mac, MagicCap and Windows, and adds Java and BeOS support as well. The latest version inproves the IDE-graphical browser view and the external editor and includes a Java toolkit.

Metrowerks, Inc., The Trimex Bldg., Rte. 11, Mooers, NY, 12958, 514-747-5999, 800-247-6553, http://www.metrowerks.com

AppleScript 1.1 — Appleware (Free)

With the invention of Apple Events way back with System 7 everyone waited years for Apple to make a simple scripting engine to drive them for the non-programmer. Well Apple finally did complete this overdue project, and now you can magically create automated tasks like taking this very writing from the database that it is created and organized in to laying it out in PageMaker—without lifting a finger. For more information on what you can do with AppleScript and to get AppleScript itself check out BMUG's own publication, The Tao of AppleScript, published by Hayden Books.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, http://www.applescript.apple.com

The Tao of AppleScript, 2nd Edition — $25

Straight from the depths of BMUG, the best AppleScript book on the market for learning how to script. Does that sound biased? It probably is, but that doesn't mean it isn't true. This book is designed to introduce programming to the intermediate computer user and anyone interested in AppleScript. Comes with AppleScript 1.1.

BMUG, Inc., 1442A Walnut St., #62, Berkeley, CA, 94709-1496, 510-549-2684, 800-776-2684, http://www.bmug.org

QuicKeys 3.5 — $95

QuicKeys is a great macro creator that lets you automate how you use your computer—and it works with applications that don't support AppleScript. Separate shortcuts can be created for specific programs, or applied to every file in a folder. Why should you type the same things over and over again, when QuicKeys can do it for you? The latest version greatly improves the interface but is not PowerPC native and some of the buttons are hard to identify.

CE Software, Inc., PO Box 65580, West Des Moines, IA, 50265, 515-221-1801, 800-523-7638, http://www.cesoft.com

TypeIt4Me 4.5.1 — $30 (Shareware)

Super tool for converting your abbreviations to text while you type. You can even tell it to correct your common typos like "hte" to "the". But keep your eyes open, there are a few bugs to look out for.

Riccardo Ettore

GENERAL UTILITIES

Virus Protection

Disinfectant 3.6 — Freeware

The best virus detection and eradication utility you can get (and that includes commercial software!). Installs an extension that protects you from infection and works against all known viruses. Excellent online help and a new color icon. It works over networks, too! It does everything the commercial stuff does, and better—you won't even know it's there! Available on BMUG Utilities V1 disk, for $3, on the BMUG PD-ROM, newsletter CD-ROM and online everywhere. Thank you, John Norstad!

John Norstad

Compression

StuffIt Deluxe 4 — $75

Lets face it, StuffIt is the most stable of the current compression programs and the standard on most BBSes and Macs. It easily decompresses a wide variety of compressed file types, including those from PCs. The latest version supports drag and drop segmenting for easier archiving and boasts speed improvements. But use the new finder integration feature with caution, it takes 1 Meg of RAM! There are also some compatability problems with the SpaceSaver element. If you order direct from Aladdin ask about a users group discount. Check out various vendor bundles for big discounts.

Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA, 95076, 408-761-6200, 800-732-8881, http://www.aladdinsys.com

StuffIt Expander 4.0.1 — Freeware
DropStuff 4 — $30 (Shareware)

StuffIt Expander is a "must have" utility. Expander gives you drag-and-drop expansion of compressed Stuffit files, Compact Pro files, Binhex, and a number of others. State-of-the-art Shareware and another excellent product from Aladdin. Essential for anyone getting new files from other places. The counterpart is DropStuff, for drag and drop compression albeit with fewer options than the full StuffIt Deluxe package.

Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA, 95076, 408-761-6200, 800-732-8881, http://www.aladdinsys.com

Disk Imaging

ShrinkWrap 2.1 — Freeware

ShrinkWrap is a Freeware utility made to manage disk images. It incorporates the functionality of DiskCopy and MountImage into one easy-to-use application, then improves on these products by adding on-the-fly compression/decompression with the StuffIt Engine, implementing drag and drop and AppleScript support, and supporting almost all known image file formats. Using ShrinkWrap is a breeze, making it an all around great utility. This is the last freeware version of ShrinkWrap. Future development will be through Aladdin Systems, the StuffIt folks.

Chad Magendanz, 15220-263rd Avenue SE, Issaquah, WA, chad@halcyon.com

Extension Mangers

Conflict Catcher 3.0.4 — $65

An excellent program for managing your extensions and control panels and pinpointing incompatibilities. With features and ease of use, this new version blows away the rest of the extensions manager market. It still automatically tests for problems; it also lets you define specific, easy-to-select customized sets and lets you control the order in which they load. Now Utilities' Startup Manager also performs well, but is just not as versatile or powerful as Conflict Catcher.

Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA, 93908-1119, 408-484-9228, 800-359-4920, http://www.casadyg.com

Finder Utilities

FindPro III v1.1.2 — ZiffWare (Free)

If you haven't upgraded to System 7.5, this utility, written by Bill Monk and available only from Ziff-Davis, is the best find/search utility available. This control panel intercepts Command-F, bypasses the Finder's Find command, and provides you with a robust file finder that can search by multiple criteria. This may be reason enough to subscribe to ZiffNet Mac. A simplified version of FindPro comes with System 7.5. It has fewer features but also has a much less cluttered interface.

Ziff-Davis Publishing Co. (Bill Monk), 950 Tower Lane 18th Floor, Foster City, CA, 94404, 415-378-5600, 72511.301@compuserve.com

Retrieve It 2.5 — $65

A powerful, affordable utility that searches for any specified text string by single word, phrase or logical operation. It will even check file servers and CD-ROMs, and you don't have to open the application used to create the file. It works over LANs and the web, where its searches run rings around those the browsers perform. It can effectively access the major web search services like Yahoo as well. A real time saver.

MVP Solutions, 415-562-3457, http://mvpsolutions.com

Menu Enhancers

Now Menus (part of NOW Utilities 6.5 — $70

This latest version really makes the idea of customizing your menus a dazzling concept. Not only can you customize the Apple menu and change the font used in all your menus as in previous versions, but now you can create an unlimited array of menus for whatever you can imagine—in whatever programs you want them—and with whatever you want in them. You can even put icons in the menu bar and attach SuperBoomerang lists to it. Surprisingly compatible with just about everything, you won't be able to live without this once you start using it. Part of the Now Utilities 6.5 package.

Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205, 503-274-2800, 800-237-3611, http://www.nowsoft.com

Now SuperBoomerang (part of NOW Utilities 6.5) — $70

Get menus of recently opened folders and files with SuperBoomerang. This latest version integrates well with another NowUtilities module (NowMenus)to provide extensive flexibility in accessing the contents of your disks. It can be a bit finicky, so keep it updated as conflicts can arise. Regrettably the module, like much of Now Utilities, is looking a bit less Mac-like. Part of the Now Utilities 6.5 package.

Now Software, Inc., 921 SW Washington St. #500, Portland, OR, 97205, 503-274-2800, 800-237-3611, http://www.nowsoft.com

DragThing 1.6 — Freeware

Tidy up those pesky desktop icons. Just drag an app, file, folder, disk, etc., onto an empty square in the DragThing dock. A double-click launches or opens the docked item, or drag a document onto a docked app to open it. What could be simpler?

James Thomson, http://www.dcs.gla.ac.uk~james/

RAM Enhancers

RAM Doubler 2.0.1 — $55

This product came out of the blue at the January '94 San Francisco Macworld Expo to help millions of Mac owners get by with the expensive RAM on hand. Now with this latest upgrade, it could be nicknamed "RAM Trippler." It now tripples the amount of RAM in your machine. It works with most programs and only slows your Mac down a bit. It works best if you use a number of smaller applications. If you need extra RAM for memory-hungry programs like Photoshop, RAM Doubler won't help. Be sure to get the most recent version as changes in the MacOS can cause problems. A minimum of 8 Megs of real RAM is required. It's not as good as the real thing, which is currently very cheap, but it's close. Current users can upgrade for $30.

Connectix Corp., 2600 Campus Dr., San Mateo, CA, 94403, 415-571-5100, 800-950-5880, http://www.connectix.com

Universal File Viewer

CanOpener 3.5 — $65

CanOpener is an excellent utility for opening any corrupted text, sound, or picture file. Sometimes it is the only thing that can help. You can open any file, even if it's corrupted, and cut and paste items directly out of the viewing window, unlike most of the recovery products out there. Version 3.5 allows you to view JPEG pictures, extract URLs and email addresses and get text from HTML files. Plus it's fast!

Abbott Systems, Inc., 62 Mountain Rd., Pleasantville, NY, 10570, 914-747-4171, 800-552-9157, http://www.abbottsys.com

Resource Enhancers

FontFaker71 1.0 — $4 (Shareware)

The System 7.1 Fonts folder was a nice advance for the Mac OS. Font resourses are readily available to any app you are using. But ever want sounds, PICTs or FKeys just as easily usable? FontFaker does it. Just drag the resourse onto FontFaker and its file type is changed to allow its access just like a font. Undo the change just as easily.

Lawrence Harris, 29-J Laurel Ridge Apts., Chapel Hill, NC, 27516

PowerBook Utilities

EMMpathy 2.0 — Freeware

Everything you need to aid in battery management of 500-series PowerBooks, excluding those with PowerPC upgrades. Best of all, it's free.

VST Power Systems, 1620 Sudbury Rd #3, Concord, MA, 01742, 508-287-4600

PB Tools 2.0 — $60

Light on Features but very stable, this is the best utility for battary management with older PowerBooks, but does not work on upgraded 500-series PowerBooks.

VST Power Systems, 1620 Sudbury Rd #3, Concord, MA, 01742, 508-287-4600

Hardware Utilities

Disk First Aid 7.2 — Appleware (Free)

With version 7.2, Apple has performed a major overhaul of this tireless and free utility. It now gives you some idea of what it's actually doing while it hums along. An excellent alternative to any of the larger utilities for daily maintenance of your storage media. We consistently use it as the "last word" on the health of a drive's directory (don't forget to run it repeatedly until your drive gets a clean bill of health). If you don't have it with your system software, get the latest Hardware System Update from your Apple dealer.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, 800-776-2333, http://www.apple.com

MacTools Pro 4.0.4 — $95

All the major hardware utilities have been absorbed by Symantec, and apparently, the advertising bucks are going into other Symantec products. Symantec has chosen to discontinue the product in favor of Norton Utilities, although MacTools Pro is still available. Nevertheless, some differences between products remain. MacTools Pro has a clean interface and a strong selection of tools that seem to give it the upper hand in problem-fixing accuracy and disk recovery success. One nice feature, the RAM Disk, performs fixes for your system disk without shutting down and inserting a startup disk. Alas, RAM Disk does not work on some of the newer Macs. When we need to pull out the big guns on the Helpline, we reach for MacTools. But be warned, if you need technical support, it will cost you $25 and up for help from Symantec.

Symantec Corp., 10201 Torre Ave., Cupertino, CA, 95014, 800-441-7234, http://www.symantec.com

FWB Hard Disk ToolKit 2.0 — $120

For most people, the drive software that comes with your drive is all you'll need. Apple and APS regularly update their drivers so that your hard disk will continue to run smoothly, and those updates are free. But if you are a Mac technical wiz and want or need to tweak the innards of your devise driver, consider the full version (not PE version) of FWB's HardDisk Toolkit. It is a good formatter for fixed, removable, or optical drives (check the list on the box or ask FWB to make sure the drive you'll be using with HDT is supported). It speeds up operations as well or better than any other third party driver software. The latest version is SCSI Manager 4.3-savvy. But remember: this product is not for the amateur. The Personal Edition offers little more than Freeware drivers, and you face expensive upgrades every time Apple tweaks the system software.

FWB, Inc., 415-325-4392, http://www.fwb.com

TechTool Pro — $100
TechTool 1.1.2 — Freeware

Hardware testing programs have come and gone. The latest entry is TechTool Pro. It builds on the popular freeware program TechTool which does desktop rebuilds, zaps PRAM, displays system information and tests for damaged system files. The commercial "Pro" version adds hundreds of hardware and software tests super 3-D graphics and interactive problem solving dialog boxes. If you are responsible for keeping a number of Macs up and running TechTool Pro is worth the investment.

MicroMat Computer Systems, 415-898-6227, 800-829-6227, http://micromat.com/mmcs

DiskFit Pro 1.1 — $75
DiskFit Direct — $30

It is amazing how easy backing up can be if you have a well designed backup program, such as DiskFit Pro. The point of DiskFit is that it's inexpensive, not all-inclusive. For even less money, you can get DiskFit Direct, for very simple backups. This program is perfect for the individual home user. It will encourage you to do the task we all avoid–backup!

Dantz Development Corp., 4 Orinda Way, Bldg. C, Orinda, CA, 94563, 510-253-3000, http://www.dantz.com

Retrospect 3.0A — $145
Retrospect Remote 3.0A with Remote 10 pack — $260

Retrospect is easy to use, attractive, and, above all, extremely reliable. Head and shoulders above the competition, it offers compression, error-checking, scheduling, and compatibility with more drives than anything else on the market. The latest version has EasyScript to automate the process. Retrospect is a complete product with every feature you'll need.

Dantz Development Corp., 4 Orinda Way, Bldg. C, Orinda, CA, 94563, 510-253-3000, http://www.dantz.com

GAMES

Arcade

Apeiron 1.0.2 — $15 (Shareware)

If you like Maelstrom you are going to love Apeiron. This is the latest contribution from Ambrosia's resident Mac wizard, Andrew Welch, to Ambrosia's growing entertainment collection. Apeiron is Ambrosia's interpretation of Atari's Centipede, cranked up a notch for the nineties. The game revolves around battling a horde of insects in a mushroom patch. A really great game for the young and the young at heart. As with many Ambrosia products, the game is a bit jittery on 603e PowerMacs that don't have a Level-2 cache card installed.

Apeiron & Maelstrom & Swoop, (716) 325-1910, email: help@AmbrosiaSW.com, http://www.ambrosiasw.com/

Crystal Caliburn — $35

Another super pinball game from StarPlay, this time with a King Arthur theme. If you like these games, consider getting Crystal Caliburn and Loony Labyrinth as part of a $50 bundle and save.

Crystal Caliburn & Loony Labyrinth, 1200 28th St., Suite 201, Boulder, CO 80303, (303) 447-9562, 800-203-2503, starplay@aol.com, http://www.starplay.com/

Loony Labyrinth 1.02 — $35

The authors of Tristan and Eight Ball Deluxe keep outdoing themselves! They have, once again, created the ultimate in computer pinball. Multi-level and multi-ball play based on a "loony" theme. Cool sounds and totally addicting. You have to see it to believe it.

StarPlay Productions, Inc. (by LittleWing Co.), PO Box 217, Greeley, CO, 80632-0217, 800-203-2503

Maelstrom 1.4.3 — $15 (Shareware)

Highly addictive and a whole lot of fun, this is one of those rare, really amazing hit Shareware games. Requires 256 colors. It's a cross between Asteroids and a half-dozen other games, including largely Lunatic Fringe (from the More After Dark module set). Very entertaining sound effects. As with many Ambrosia products, the game is a bit jittery on 603e PowerMacs that don't have a Level-2 cache card installed.

Ambrosia, PO Box 23140, Rochester, NY, 14692-3140, 716 427-2577, 800-231-1816, ambrosiasw@aol.com

PegLeg — $35

An outstanding full-color mixture of a shoot 'em up and Asteroids, with all kinds of surprising animated obstacles. Lots of levels and cool graphics. It's great for anyone with a color monitor. Fat binary for Power Macs and 680x0 processors, and will fill even the largest of screens. If you like shoot 'em ups, don't miss this one!

Changeling Software, 2507 Albata Avenue, Austin, Texas 78757-2102, 512-419-7085, 800-769-2768, change@changeling.com, http://www.changeling.com/

Prince of Persia CD Collection — $18

The Shadow and the Flame is much more elaborate then the first highly-acclaimed Prince of Persia, the stunning full-color graphics, a more involved story line, and lots of new tricks to learn, make this a fabulous sequel. The smooth animation with hair-raising sword fighting make this action-adventure a Mac classic. Incredibly the Collection includes both the original and the sequel on CD for less than either on disk.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6125, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

Swoop 1.0.2 — $15 (Shareware)

Developed by David Wareing, of Adelaide, Australia, Swoop is an arcade classic combining pulse-quickening game play with state of the art computer animation and audio effects. Swoop strikes close to Space Invaders in terms of game play. Smooth flowing action, detailed full color graphics, and custom sound effects all provide for an exciting game. The only thing missing is the cash box in which to pump your coins. As with many Ambrosia products, the game is a bit jittery on 603e PowerMacs that don't have a Level-2 cache card installed.

Ambrosia Software, PO Box 23140, Rochester, NY, 14692-3140, 716 427-2577, 800-231-1816, ambrosiasw@aol.com

William's Digital Arcade: Joust — $27

William's Digital Arcade is an emulator that translates the original game code from Williams Entertainment's classic arcade game Joust—which means that what you get on your Mac screen is exactly what you used to get for a quarter at the local video arcade. Fun!

Digital Eclipse, 5515 Doyle St., #1, Emeryville, CA, 94608, 510 450-1740, http://www.digitaleclipse.com/

Cards and Puzzles

Eric's Ultimate Solitaire — $30

From the author of the popular Shareware Klondike and Forty Thieves comes this truly "ultimate" set of solitaire card games. Full color, clean sounds, and great card-shuffling and card-throwing animation make for a new kind of addiction. Includes features for PowerBook users and is light on your hard drive and RAM.

Delta Tao Software, Inc., 760 Harvard Ave., Sunnyvale, CA, 94087, 408-730-9336, 800-827-9316, JoeDelta@aol.com, http://www.deltatao.com/deltatao/

Power Poker — $40

A computer program for poker players and a lot more. The computer-generated players learn from their mistakes and sooner or later play a very good game of poker. The program can also generate great QuickTime movies of the computer-generated players. Up to ten people (humans) can also play when connected via AppleTalk or Ethernet.

Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA, 94404, 415-571-7171, 800-245-4525, http://www.ea.com/

Shanghai II 1.05 — $20

A long-time favorite of BMUGers near and far. Played with digital Mah Jong tiles, it's a very soothing game. Shanghai II is a full-color update to the original The game offers a variety of tile faces, different layouts to solve, and an editor to create your own layouts. Avoid Shanghai: Great Moments which actually offers less for more. A missed opportunity.

Activision, 11601 Wilshire Blvd. #10, Los Angeles, CA, 90025, 310-473-9200, http://www.activision.com/

Triazzle Living Puzzle (CD or Disk) — $20

Berkeley Systems has applied its wacky graphics expertise to an electronic puzzle and has come up successful. Triazzle is cool. It is packed with the sights and sounds of the rain forest. Fitting puzzle pieces together to form an animal causes the animal to come to life with authentic movement and sound. More than just a game, Triazzle also provides information on the animals found in the rain forest game. What's more, Berkeley Systems donates a small percentage of the profits from Triazzle to the Rain forest Alliance, an organization that seeks creative ways to protect this important natural resource. This lets you buy a fantastic game while doing something nice for the environment.

Berkeley Systems, Inc., 2095 Rose St., Berkeley, CA, 94709, 510-540-5535, 800-877-5535, http://www.berksys.com

Gryphon Bricks — $30

Use Lego-style bricks to build an incredible variety of buildings and structures. View your masterpiece from any angle and pick brick colors as well. best of all, you never get to the botton of the box.

Gryphon Software, 619-536-8815, 800-795-0981, http://www.gryphonsw.com

Classic Macintosh

Dark Castle 3.03 — $28

It's back, and it's in full color. Delta Tao has traded its high-end paint program Zeus to Silicon Beach (Aldus, Adobe, whoever…) for the rights to this classic Mac game. Was it worth it? You bet. This glorious color version will run on all current (color) Macs, and you won't be able to wait for the sequels. It's surprising how well this game still stands up against the modern Mac action games.

Delta Tao Software, Inc., 760 Harvard Ave., Sunnyvale, CA, 94087, 408-730-9336, 800-827-9316, deltavee@aol.com

Super Tetris — $35

Like the original Tetris game for the Mac, Super Tetris adds new twists to its addictive predecessor. You'll need to rethink your strategies to deal with a new goal, as well as bombs, bubble blocks, and lots more. Guaranteed to give you a whole new case of Carpal Tunnel Syndrome.

MicroProse-Spectrum Holobyte, 2490 Mariner Sq. Loop, Alameda, CA, 94501, 510-522-1164, http://www.microprose.com/

Escape Velocity — Shareware

One of the hottest new internet games, Escape Velocity. It places you in a gigantic non-linear universe in the year 2246. Where do you go in your new space vessel? Face off with pirates, wheel and deal at some outpost, get stuck in a civil war? Maybe there will be something entirely new because Escape Velocity supports independent plug ins to increase the number of options and scenarios. Matt Burch has done a nice job.

Ambrosia Software, PO Box 23140, Rochester, NY, 14692-3140, 716 427-2577, 800-231-1816, ambrosiasw@aol.com

First Person

Dark Forces (CD) 1.2 — $50

This release from LucasArts raises the bar another notch on the first-person shooting games. With less emphasis on the shooting and more care taken on the creation of very large and complex levels, this game is like a whole world in itself. The levels are richly textured and the realtime-rendered environment is very realistic with flowing water and laser blasts that reflect off walls. We have also been very impressed by the Mac port—while this game obviously started in the PC world of low-res, the Mac version is sharp and Power Mac native. Dark forces is sure to keep you completely entertained for many days or weeks.

LucasArts Entertainment, PO Box 10307, San Rafael, CA, 94912, 415-721-3300, 800-782-7927, http://www.lucasarts.com/

Marathon 2: Durandal — $45

This first-person 3-D perspective game from the people that brought us Pathways into Darkness is a sophisticated shoot 'em up with strategies, puzzles, and incredible realtime rendered graphics. It's VR-compatible (if you have a virtual reality headset) and comes in Fat binary for Power Macs and 68K Macs. Great over a network with (or more like against) other humans. Be warned, it's pretty violent, but it has enough plot and strategy to win over the timid. The sequel begins where you left off in the original, as you are enslaved by a rogue computer, Durandal, and must comb the ruins on an ancient city while struggling to escape. If you are new to Marathon, consider buying the two programs as part of a $60 bundle.

Bungie Software Products, 1935 So. Halsted St. Suite 204, Chicago, IL, 60608, 312 563-6200, http://www.bungie.com/

Realmz 3.0.2 — $30 (Shareware)

Inspired by Dungeons and Dragons, this loosely structured game allows the player to explore various scenarios with your customized fellow adventurers. You have the freedom to go wherever and whenever you want giving the game great variety and individuality. Even your fellow computer adventurers change as the game advances from one level to another. Regularily updated with new scenarios, this nifty shareware game is worth checking out. It does require a fast Mac.

Fantasoft, Inc., PO Box 14261, Madison, WI, 53714-0261, 608-222-8468, fantasoft1@aol.com, www.fantasoft.com

Descent — $50
Descent II — $50

Enter the world of mine shafts and never ending tunnels. The visual effect can be pretty realistic, and unnerving. Menacing robots are all around, above and below you. Sound effects and music are great atmosphere enhancers. Super 3D game. There is a Descent Levels of the World CD and Descent II is scheduled for release shortly. How low can you go?? Don't forget one thing. You need a fast PowerPC Mac to enjoy the speed and thrills of Descent. Descent II adds a number of new turns and twists and some new heavy fire power weapons to the nausea inducing mix. Belt up!

MacPlay, 17922 Fitch Ave., Irvine, CA, 92714-6038, 800-428-8200, www.macplay.com

Bolo — $25 (Shareware)

Bolo is the best network strategy tank game. It supports up to 16 network players at once! There's a map editor for creating or changing the landscapes in Bolo-land, and it even looks good in black & white. Check out the BMUG PD-ROM for a bunch of Bolo modules to add even more variety.

Stuart Cheshire, PO Box 8323, Stanford, CA, 94309-8323, cheshire@cs.stanford.edu

Absolute Zero — $45

Go down into a 24th century mining world an play different characters battling against a reawakened race of aliens (yes, you woke them up). Nice vehicles and weapons, and a helmet that makes your vehicle transparent. Very tough challenge. Get the update as the first 2 levels are a bit easier.

Domark Software, 415-513-8929, 800-695-4263, http://www.domark.com

Havoc

Shoot 'en up in the great outdoors while you ride hovercraft, cycle or tank. Can be played over a network, so becareful when you bend down to pick up that shield. You might loose your vehicle or worse. Requires PowerPC Mac.

Reality Bytes, 617-621-2550, http://www.realbytes.com

System Shock — $40

Tired of being chased by bad guys? Become one. In System Shock you are the bad 'ol cyberthief. After an involuntary brain implant you set out to destroy the artificial intelligence center that makes you life no fun at all. A lot of mental exercises and plot twists, but not a lot of gore. Requires a lot of processor muscle (PowerPC 7100/80 with Level 2 Cache; 16 MB RAM or greater to play)

Origin Systems, 512-434-4263, http://www.ea.com/origin.html

Flight Simulators

A-10 Attack 1.1 — $50

From the original creator of Hellcats comes a more versatile aircraft simulator that promises to be more enjoyable for longer games. While it doesn't have the graphic detail of F/A-18 Hornet the "Wart Hog" is a more maneuverable aircraft. The missions in the game are more detailed and include a strategic aspect as you defend territory and plan campaigns.

ParSoft, 101 West Runner Road, Suite 430, Richardson, TX, 75082, 214-479-1340, parsoft@aol.com

F/A-18 Hornet 2.01 — $49

Incredible flight simulator. Modern-day jet fighter with advanced missiles, radar, and electro-optical weapons. There are even joystick/throttle sets available for more realistic flight control, and it's fully networkable for group combat missions. Version 2.0 is Power Mac native with more detail and silky-smooth animation.

Graphic Simulations, 1200 East Collins #214, Richardson, TX, 75081, 214-699-7400

HellCats 1.04 — $39
HellCats: Missions at Leyte Gulf 1.02 — $21

Hellcats' six different missions and impressive graphics will keep you entertained. Some think the sequel is even better. These WWII simulators are beautifully smooth on any size screen, and easy to control.

Graphic Simulations, 1200 East Collins #214, Richardson, TX, 75081, 214-699-7400

X-Wing Collector's CD — $37

Over one hundred awsome missions against demanding adversaries inrendered beautifully settings makes this a great choice on a PowerPC. The next generation of flight simulators.

Lucas Arts, 415-472-3400, 800-985-8227, http://www.lucasarts.com

Comanche Mac — $45

Tires of all those fixed wing simulators? Check our Comanche Mac, the attack chopper. Over one hundred missions, including 10 that are basically training flights.Nice special weather effects, and you fly anywhere on earth. Runs on anything as fast as an 030 Mac.

NovaLogic, 818-880-1997, 800-858-1322, http://www.novalogic.com

Miscellaneous Games

Myst (CD) — $45

First there was SpaceShip Warlock—fun to look at, but not much of a game. Then came the JourneyMan Project—better to look at, and good because you did a lot of looking and not much doing. Now there's Myst. Glorious to behold, fast enough to actually play, and, to top it all off, a great game. It's mysterious, intriguing, puzzling, haunting, and creative. Highly recommended.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

SimCity 2000 CD Collection 1.2 — $57
SimCity 2000 (Disk) 1.2 — $40

Get the entire collection of scenarios and the urban renewal kit on a single CD-ROM. You can design your own buildings and print out your custom landscapes $or choose from among the over 100 new structures. It's still 3-D and in color $plus it's accelerated for the PowerMac.

Maxis, 2 Theatre Square, Orinda, CA, 94563, 510-254-9700, 800-336-2947, http://www.maxis.com

Full Throttle — $25

For the motorcycle lover in you. Save America's last motorcycle factory while you negotiate your way through an apocalyptic "mad maxish" environment. Murder, mayhem and burnt rubber, all in full motion video.

Lucas Arts, 415-472-3400, 800-985-8227, http://www.lucasarts.com

You Don't Know Jack XXL — $35

Even more irreverent, bizarre, sarcastic: It's a quiz showon CD-ROM. Challenging classic trivia mixed with pop culture, sound effects and an irreverent host. Great for parties if you don't all mind pressing around a single screen. If you exhaust the questions or want more, check out the separate "X-tra Large" and "Question Pack" so you can play "Don't Be a Wimp" and "Screw Your Neighbor" to your little heart's content. It may even become a TV show! Many different packages available including Sports.

Berkeley Systems, 2095 Rose Street, Berkeley, CA, 94709, 510-540-5535, 800-877-5535, http://www.berksys.com

Reelect JFK — $35

A clever bit of "what if?" history lets you sit in the oval office and plan through the events of 1963 and 1964 as if JFK never went to Texas. How would you deal with the civil rights movement, the Communist menace, Barry Goldwater or Chet Huntley and David Brinkley? If's a fun way to see if you do know Jack.

Quadra Interactive, 701 Palomar Airport Road, 3d Floor, Carlsbad, CA, 92009, 619-931-4755

MULTIMEDIA EXPLORATION

Voyager II v2.0 — $100

You can view the stars as the Egyptian pyramid builders saw them thousands of years ago or see the pattern the sun makes in the sky during its annual migration. Stand on a nearby star, watch the orbits of the planets, and see Halley's Comet pass by. The tools and precision in this program are good enough for professionals. A truly amazing product developed by zealots, with love. Entertaining enough to keep in your games folder, the new version has color, sky pictures, and a bigger astral database. The CD-ROM version adds the 19-million-star Hubble Guide Star Catalog and a collection of almost 800 astronomical pictures. Available on Diskette or CD-ROM.

Carina Software, 830 Williams St., San Leandro, CA, 94577, 510-352-7328

Star Trek the Next Generation: Interactive Technical Manual — $50

The "Official Starfleet Virtual Tour," this CD-ROM is an absolute must-have for any Next Generation fan. It includes the first full implementation of QuickTime VR, which means that you can get a 360-degree view of your surroundings from any of multiple locations on the Enterprise. An incredible amount of information and detail. Brilliant.

Simon & Schuster Interactive, 1230 Avenue of the Americas, New York, NY, 10020

Red Shift 2 — call for price

Fantastic interactive space simulator for diving through the rings of Saturn or climbing on board a satellite. Plenty of options for setting the controls and visiting any place you like in the solar system.

Maris Multimedia, 415-492-2819, http://www.maris.com

Xplora 1: Peter Gabriel's Secret World — $45

A stunning CD-ROM from Peter Gabriel with over 100 minutes of video, 30 minutes of audio, 100 still images, tons of text, videos of the songs (and conversations with the directors), a sampling of the WOMAD music festival (and 40 different world music albums), behind the scenes at the Grammies, and more. You can even create your own mix of "Digging in the Dirt."

MacPlay (division of Interplay Productions, inc.), 17922 Fitch Ave., Irvine, CA, 92714-6038, 800-428-8200, http://www.macplay.com

American Visions (CD-ROM) — $60

Presents over 210 works of art in 24-bit color, representing 140 American artists. Videos, photographs, and narrative about the artists and their work, with narration by the collector.

Eden Interactive, 1022 Natoma St. #2, SF, CA, 94103, 415-241-1450, 800-743-3360

Cinemania '97 — $29

Despite annoying interface problems (hey, it's Microsoft), Cinemania is the CD-ROM movie guide. It contains over 24,000 listings, including movies, stills, sounds, clips, cast lists, filmographies, biographies, Leonard Matlin reviews, Pauline Kael reviews, Roger Ebert reviews, Baseline (a film encyclopedia) reviews, and more—and it's pretty zippy. It's the best movie guide out on the market. Very very cool.

Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399, 206-882-8080, http://www.microsoft.com

From Alice To Ocean: Alone Across The Outback — $45

A photo journalistic essay of Robyn Davidson's seven-month-long trek across the Australian outback. Appeals to both adults and children by offering insights into Australian geography and culture, along with an inspirational story about a journey against all odds. It's an interactive multimedia CD-ROM with a coffee table-style book of photographs by internationally recognized photographer Rick Smolan.

Claris Corp., 5201 Patrick Henry Dr., PO Box 58168, Santa Clara, CA, 95052-8168, 408-727-8227 Customer Relations, 800-334-3535 U.S. Dealers, http://www.claris.com

Macbeth — $35

A beautiful version of Shakespeare's Macbeth, with annotated text; QuickTime clips of the Roman Polanski, Orson Welles, and Akira Kurosawa film version; maps of Shakespeare's England (and Scotland); and more. Makes a wonderful gift, although by the time you get home, you'll probably decide to give it to yourself!

The Voyager Company, 578 Broadway #406, New York, NY, 10012, 212-431-5199, 800-446-2001, http://www.voyagerco.com

Oceans Below — $28

Oceans Below is a CD-ROM edutainment title that explores the world of scuba diving. Users can select from dive sites around the world and experience the exotic undersea world of manta rays, angel fish, coral walls, and shipwrecks. Includes more than 200 video clips—more than one hour's worth—and features marine life, plant life, and undersea sites.

Software Toolworks, 60 Leveroni Ct., Novato, CA, 94949, 415-883-3000, 800-234-3088

Passage to Vietnam (Book and CD-ROM) — $70 ($36 CD only)

Rick Smolan, the man who brought us From Alice to Ocean a few years ago, was part of the first officially sanctioned tour of Vietnam in 20 years. This book and CD-ROM combo shows photos by many of the world's top photojournalists, along with notes about daily life in Vietnam and lessons on photography. Combined with an excellent multimedia control, it makes the most out of QuickTime on a CD-ROM. This is where the future of these discs is headed, folks. Watch out, though, since many of the books are being sold without the disc. The disk can be purchased separately for around $40.

Against All Odds, PO Box 1189, Sausalito, CA, 94966, 415-331-6300

Seven Days in August — $14

An interactive documentary that recalls the week of August 13th to 19th, 1961 and the construction of the Berlin Wall. Features slide shows, four hours of audio, two hours of narrated photomontage, and two interactive games—all recapturing what life was like for both Americans and Berliners during that historic week.

Time Warner Interactive, 2210 W. Olive Ave., Burbank, CA, 91506, 818-955-9999, 800-593-6334, http://www.pathfinder.com/twi

Think for Yourself (CD) — $149

A collection of statistics from the United Nations, World Health Organization, and other American governmental sources, with an easy-to-use Discovery data analysis program. The information includes data on AIDS, the environment, health, and American demographics. The Discovery application "understands" the information contained in the data sets, and lets even young kids analyze and solve problems.

PEMD Education Group, 35000 Highway 128, Cloverdale, CA, 95425-0039, 707-894-3668

Mayo Clinic Family Health Book — $80

Filled with information and advice about everything from preventive medicine to drug side effects this is a great resource for any family, especially since kids seem to create emergency situations on a regular basis. It now includes links with health related web sites via Netscape.

IVI Publishing, 7500 Flying Cloud Drive, Minneapolis, MN, 55344, 612-996-6000, 800-754-1484, http://www.ivi.com

Real World Picture Atlas — $40
The Cities Below — $40

Great satellite images of the world overlaid or underlaid with maps of the areas viewed. Disks include useful information about the world your exploring. The interface is especially well designed.

Now What Software, 2303 Sacramento Street, San Francisco, CA, 94115, 415-885-1689, 800-322-1954

Monty Python's Complete Waste of Time — $45

That's what we like: truth in advertising. Will you become more productive singing "I'm a lumberjack and that's ok?" No. Will "naughty bits" make you the life of the party? Not likely. But if you like that Python humor and those great graphics (nudge, nudge), you can't help but enjoy this complete waste of time.

7th Level, 214-498-8184, 800-884-8863-ext. 77

Volcanos: Life on the Edge — $40

Follow photographer Roger Russmeyer as he goes from one erupting volcano to another, all while capturing a bit of the danger he faced to get the shots. There is plenty of supplemental information to keep any vulcanologist engrossed.

Corbis Publishing, 206-641-4505, 800-246-2065, http://www.corbis.com

Robert Winter's Crazy for Ragtime — $35

Examining the syncopated music that is ragtime. View performances, folios of sheet music and create your of "rag" by creating variations on existing compositions. Great fun.

Calliope Media, 310-829-1100, 800-336-2947

A Passion for Art: Renoir, Cézanne, Matisse and Dr. Barnes — $40

Explore Dr. Barnes' gallery of almost 70 artists. Click on paintings to learn more about the subject and the painter, or take a guided tour.

Corbis Publishing, 206-641-4505, http://www.corbis.com

Microsoft Bookshelf — $55

A nicely integrated set of reference sources including dictionary, almanac, quotations dictionary, chronology, atlas and more. It's individual units aren't the equal of a stand alone package, but there is no better combination package. Good for students.

Microsoft, 206-882-8080, 800-426-9400, http://www.microsoft.com

The Residents' Freak Show $28
The Residents' Bad Day on the Midway $45

Discover fetishes, fantasies, rituals, and tragic secrets through photos, comics, music, music videos, and animation. Featuring spectacular animation design by Jim Ludtke, Freak Show is a new audio-visual experience encompassing the future of interactive stories, music videos, and digital art. Their latest, "bad Day" adds a twist: you pop in and out of the minds of the randomly encountered characters at an unpleasant midway. Just try to avoid a nasty accident. You'll need a lot of computing power to fully enjoy these fascinating but resource-demanding interactive CD-ROMs.

The Voyager Company, 578 Broadway #406, New York, NY, 10012, 212-431-5199, 800-446-2001, http://www.voyagerco.com

Beyond the Wall $24

Visit the Vietnam Memorial via your computer. This CD-ROM tells the history of the memorial and the stories of some of the names found there. Objects are all around you in your 3-D trip, and each tells its own story. Well done.

20th Century Fox Home Entertainment, 310-369-3900, http://www.tcfhe.com

Western Garden $50

If you live in the western states, and love to garden, you already know about the Sunset Western Garden Book, the bible of western gardening. The CD version makes that wealth of information much easier to access. Well designed sorting functions make it a breeze to pick the right groundcover for your sunny sloping hillside in your particular climate zone.

Sunset New Media, 80 Willow Road, Menlo Park, CA, 94025, 415-321-3600, 800-634-3095

LEARNING AND EXPLORATION FOR KIDS

Preschool and Kindergarten

Millie's Math House; Trudy's Time and Place House $28
Bailey's Book House; Sammy's Science House $28

Designed and developed by Berkeley Learning Technologies around the preschool math curriculum of California for ages 3-6, Millie has won several awards. Six activities teach numbers, patterning, sorting, and shape and size recognition—each activity allows for playing and learning, too. Color, black & white, sound input, a parent mode that gives info about the goals of each activity, and a special mode for disabled kids lacking hand/eye coordination. It never, ever tells you that you blew it—very cool! Bailey's Book house emphasizes letter recognition, rhymes, self-expression and story telling. Sammy's Science House looks at weather, logic puzzles and classifying animals. Trudy explores the abstract world of time and place.(CD-ROM or Disks)

Edmark Corp., 6727 - 185th Avenue, NE, Redmond, WA, 98073, 206-556-8484, 800-426-0856, http://www.edmark.com

Alphabet Express $28

Great product for home or school. It features letter recognition and lots of alphabet activities, including letter sounds. Connect-the-dot, maze and hidden letter games keep children engaged. Many activity pages can be printed. 3-6 year olds. (CD-ROM)

School Zone Publishing Company, 800-253-0564, http://www.schoolzone.com

Jump Start Preschool $35
Jump Start Kindergarten $35

A great new series (5 so far) of early-learning software. Preschool focuses on letters, shapes, colors and numbers while Kindergarten looks at clocks, patterns, sentences and numbers. Each is filled with activities, games and progress reports. Each should entertain and teach for quite some time. (CD-ROM)

Knowledge Adventure, 1311 Grand Central, Glendale, CA, 818-542-4200, 800-542-4240, http://www.adventure.com

Playskool Puzzles $40

Encourage logical thinking, creativity and language use skills with Playskool Puzzles. A wide variety of puzzles, connect-the-dots, mix and match puzzles are provided at three challenge levels. There are even puzzle making tools. 3-6 year olds. (CD-ROM)

Playskool Software, 800-638-6927

The Playroom $40

Designed for 3- to 6-year olds, The Playroom teaches counting, letter recognition, telling time, spelling, reading and math readiness, creativity, and more. Point and click on just about anything in The Playroom, and something fun will happen. (CD-ROM)

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

Early Math $30
Beginning Reading $35

Playing Early math, kids solve puzzles, feed fish and develop skills in counting, adding, patterns and shapes. Beginning reading has kids reading stories and learning the alphabet and how syllables sound. Ages 4-7. (CD-ROM or Disk)

Sierra On-Line, 800-757-7707, http://www.sierra.com

Early Elementary

Big Job $50

Great fun for kids who like machines. They visit a fire rescue, a farm and a construction site all while learning about safety and spacial relationships and how to think logically. "Geared" for ages 5 to 9. (CD-ROM)

Discovery Channel Multimedia, 800-678-3343, www.discovery.com

Arthur's Teacher Trouble; Arthur's Birthday $36
Just Grandma & Me; Harry & the Haunted House $36

These interactive selections from Living Books (Brøderbund/Random House)use original stories that children can hear and read aloud. Click on objects for animation, music and speech. Arthur's Teacher Trouble and Arthur's Birthday are geared to kids from ages 6 to 10 (and some adults). Just Grandma & Me and Harry and the Haunted House are for a slightly younger group (ages 3-8). Each program is bilingual(Spanish and English), so it can help kids get started in learning a second language. Just Grandma & Me is also in Japanese. Other good choices in the Living Books include Sheila Rae the Brave and Ruff's Bone. (CD-ROM)

Brøderbund-Random House (Living Books), 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 800-776-4724, http://www.broderbund.com

Putt Putt series $37
Freddi Fish series $40

The Putt Putt series, geared to children ages 3 to 8, follow Putt Putt in his adventures whether finding baby animals at the Zoo to marching in a parade. A variety of games and levels of difficulty keep children engaged. The Putt-Putt and Fatty Bear's Activity is especially strong. The new Freddi Fish programs introduce a whole new set of games and learning tools for kids to see under the sea. Save money and check out the Humongous Classics Bundle featuring Putt Putt and other characters. (CD-ROM)

Humongous Entertainment, 16932 Woodinville-Redmond Rd. #104, Woodinville, WA, 98072, 206-486-9258, support@humongous.com

Jump Start First Grade $35
Jump Start Second Grade $35

Thirteen different activities teach numbers and letters, time, colors, and simple sentences in JS First Grade(ages 5-7). The Second Grade program has 22 activities teaching math skills, reading, music, US geography and the solar system (ages 6-8). Both programs generate reports and allow you to chart a child's progress. Some difficulty levels can be adjusted. (CD-ROM)

Knowledge Adventure, 1311 Grand Central, Glendale, CA, 818-542-4200, 800-542-4240, http://www.adventure.com

Kid Works Deluxe $50

Learn word processing with a talking word processor. Kids can insert drawings, add stickers, and story starters then print out their work. There is even an online feature set. Takes time to master. Ages 4-9 (CD-ROM)

Davidson & Associates, Inc., 19840 Pioneer Ave., Torrance, CA, 310-793-0600, 800-545-7677

Read, Write & Type — $60

Kids explore a keyboard learning letter sounds, letter combinations and typing in the process. Press a key and a related event is revealed. Lots of games and exercises, plus record keeping. Ages 6-8. (CD-ROM)

The Learning Company, 800-852-2255, http://www.learningco.com

Grammar Rock — $29

A tough subject to make engaging, but Grammar Rock succeeds with nine videos on which a variety of multi-level activities provide practice for concepts presented. Correct answers get kids into arcade games and teach some math skills as a bonus. Ages 6 to 10. (CD-ROM)

Creative Wonders, 800-543-9778

Lamb Chop Loves Music — $35

Let's kids explore a variety of musical instruments via an interactive journey with the Musicians of Bremen. 50 different instruments a rendered. A number of challenging activities make this a great way to introduce children to music. Ages 3-8 (CD-ROM)

Philips Media Software, 310-444-6500

Infinity City — $25

Explore counting, shapes and sizes while riding with a singing Taxi Driver. Dozens of activity modules, puzzles and stories add to the fun. Ages 4-8. (CD-ROM)
Headbone Interactive, 206-325-3885, 800-267-4709, http://www.headbone.com

Middle Grades

Adi's Comprehensive Learning System — $45

Lots of activities for kids in 6 programs covering English, math and science in theater, lab and other settings. Can even create animations. Progress reports are built in. Ages 7-11 (CD-ROM)

Sierra On-Line, 800-757-7707, http://www.sierra.com

Crystal Rain Forest — $45

Incorporate geometry, math, and even LOGO programming (an easy-to-use version) into a child's journey to protect the planet. Nice learning tool. Ages 8-13.

Terrapin Software, Inc., 800-972-8200

Pop Sci for Kids: Ocean Voyager — $40

While exploring the oceans in a submarine returning a seal to its home, kids learn about marine life, the ecology, and navigation. Ages 6-13 (CD-ROM)

Times Mirror Multimedia, 800-747-1787

Kid Pix Studio — $40
The New Kid Pix — $35

One of the few programs likely to attract youngsters away from video games. The tools have sound effects; the alphabet is in both English and Spanish; and there's even a "small kids" mode. This is a must-have if your kids are 3 to 12, and you have a color Mac. Kid Pix Studio gives you lots of rubber stamps, hidden pictures, sounds, Color Me pictures, and Wacky TV (QuickTime). Oh, and it does kid-style presentations with a storyboard that makes truck sounds when you rearrange tiles! (CD-ROM). The New Kid Pix combines Kid Pix, Kid Pix 2 and Kid Pix Companion, all on floppy disks, for the same age group. (Disk)

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

Logical Journey of the Zoombinis $50
Math Workshop; Tabletop, Jr. $40/$70

A nice set of math and logic development tools. With Zoombinis (ages 8-12) logic and problem solving skills are stressed as kids classify little animals to advance to a new land. Puzzles vary in difficulty. (CD-ROM). Math Workshop (ages 6-12) offers games that incorporate drill and practice as children progress from one level to the next (CD-ROM). Tabletop Jr. for ages 5-23 focuses on math, graphing and logical thinking, games are in English and Spanish (Disk). All excellent programs.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

Reading Galaxy $42
The Amazing Writing Machine $42

Reading Galaxy (ages 9-15) uses a game show format to help children learn about literature. Puzzle solving and passage reading are part of the fun. The writing machine combines KidPix drawing tools with writing to create poems, letters, diaries and journals. It's complete with rhyming dictionary, spell checker and guides to four different styles of poetry (ages 6-12). (CD-ROM)

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

Strategy Games of the World $35

Beat strategy masters at their own game and develop your logical skills in the process. Great fun. Ages 8-14. (CD-ROM)

Edmark Corp., 6727 - 185th Avenue, NE, Redmond, WA, 98073, 206-556-8484, 800-426-0856, http://www.edmark.com

Imagination Express series $29

Visit the rainforest, or the oceans, or the pyramids, or take a trip in time. In the process you create scenes, then add a story, music, animation and dialog for a full story that is different every time you play, plus you learn about the places you visit. Ages 5-14. (CD-ROM)

Edmark Corp., 6727 - 185th Avenue, NE, Redmond, WA, 98073, 206-556-8484, 800-426-0856, http://www.edmark.com

SimTown $35

A kids version of SimCity2000 (ages 8-12) introduces children to planning, population and development issues, all while playing a very fun game. (CD-ROM)

Maxis, 2 Theatre Square, Orinda, CA, 94603, 510-254-9700, 800-336-2947, http://www.maxis.com

What's the Secret: Volume 2 $33

Based on the PBS program "Newton's Apple" children explore various science topics with suggestions as to relevant experiments. Ages 7-13 (CD-ROM)

3M Learning Software, 800-219-9022

Creative Writer $30
Fine Artist $30

An exhausting amount of possibilities. Puts you in "Imaginopolis," where you create banners, newsletters, greeting cards, and stories. Combines fonts, pictures, story starters, and a lot of the traditional writing program approaches. For ages 8-14 (CD-ROM). Creative Writer & Fine Artist Bundle saves money at $50.

Microsoft Corp., One Microsoft Way, Redmond, WA, 98052-6399, 206-882-8080, http://www.microsoft.com

General Interest

A.D.A.M. the Inside Story, 1997 Ed. $35

Peel back the skin on parts of the body to reveal layer after layer of the human anatomy. Tour the heart in 3-D and travel through the lungs. A.D.A.M. now has an Internet link for updates. Ages 11 and up. (CD-ROM)

A.D.A.M. Software, Inc., 800-755-2326, http://www.adam.com

Alge-Blaster $35

Algebra Fun?! If you are defending the planet Quadratica it can be. Only by solving algebraic equations and translating word problems can the planet be saved. It will even chart your progress. Ages 12 and up. (CD-ROM)

Davidson & Associates, 800-545-7677, http://www.davd.com

Ancient Lands $50

Hundreds of interactive stories about Ancient Rome, Greece and Egypt that delve into everything from myths and stories to ware and politics. Some stories are narrated and animated. Ages 9 and up (CD-ROM)

Microsoft Corp., 800-376-5125, http://www.microsoft.com

Exploring the Lost Maya $40

Based on Robert Sharer's book, The Ancient Maya, this CD-ROM examines the ancient culture and history with timelines, maps and a wealth of pictures and movies. A fun way to explore archaeological digs. Ages 11 and up.

Sumeria, , 415-904-0800

Eyewitness Encyclopedia series $35
Eyewitness Virtual Reality Series $25

An impressive variety of titles and subjects. The Encyclopedia series looks at science, or astronomy or biology. The Virtual Reality series examines birds, dinosaurs or life in the jungle. There is also an Eyewitness History of the World. In each a child can explore, play games or even test how much they have learned. A nice set of programs.

Dorling Kindersley Multimedia, 800-356-6575

Her Heritage $45

A 1000+ entry biographical encyclopedia of famous American women, including photos, film and newsreel clips. Ages 10 and up. (CD-ROM)

Cambrix Publishing, 818-992-8781

Incredible Machine 3 $28
Incredible Toon Machine $40

Incredible Machine 3 is a giant construction kit with dozens of parts, ramps, levers, pullies and more. There are film shorts about some of the working parts, plus music. Toon Machines a similar product that uses cartoon-like parts. Ages 8 and up (CD-ROM)

Sierra On-Line, 800-757-7707, http://www.sierra.com

Masterpiece Mansion $35

You are locked in an art museum and the only way to escape is to solve puzzle about art, artists and cultures from ancient Greece to the 20th Century. Program contains 150 famous art pieces and 40 different games. Ages 12 and up (CD-ROM)

Philips, 310-444-6500

Romeo and Juliet: Center Stage $79

Shakespeare? Romeo and Juliet: Center Stage is designed to get beyond the initial resistance with this almost 90 minute version acted by teens. The script and play can be watched at the same time. A good way to get into Shakespeare. Ages 14 and up. (CD-ROM)

Sunburst Communications, Inc., 800-321-7511, http://www.nysunburst.com

The Lost Mind of Dr. Brain $40

A superb product. So much fun, with beautiful graphics and music, a multitude of puzzles and wacky humor, kids won't care if they are learning about logic, music, spatial reasoning, and even chemistry and physics. Ages 12 and up. (CD-ROM)

Sierra On-Line, 800-757-7707, http://www. sierra.com

African Trail; Amazon Trail; Explore Yellowstone Oregon Trail; Yukon Trail; Maya Quest — $25 to $50

In Amazon Trail adventurers travel through a time warp to explore the Amazon River and learn about the rain forest while searching for an elusive medicinal plant. An Inca king has sent a jaguar in a dream to bring him the cure for his people; to find the plant and accomplish the mission, adventurers must talk with travelers from different eras. In African Trial, you relive a record-setting bicycle expedition across the continent. The other "Trail" titles are worth considering as well, including Amazon Trail II, Oregon Trail, Oregon Trail II, the Yukon Trail, and MayaQuest: The Mystery Trail, and Explore Yellowstone. Many are available on CD-ROM or Diskette and are for ages 10 and up.

MECC, 6160 Summit Dr. N, Minneapolis, MN, 55430, 612-569-1500, 800-685-6322

Carmen Sandiego Deluxe — $47
Carmen Sandiego Junior Detective — $40

It's a really great game series for kids (and adults). Historically and geographically educational, yet fun, with graphics, color, and sound effects. The Junior Detective game is designed for younger kids (ages 5 to 8). Other recommended titles include Where in the World is Carmen Sandiego, Where in the USA is Carmen Sandiego and Where in Space is Carmen Sandiego.

Brøderbund Software, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA, 94948-6121, 415-382-4400, 800-521-6263, http://www.broderbund.com

KidDesk — $27
Kid Desk Family Edition — $55

Designed by early childhood experts, KidDesk gives kids creative control over their computing environment without putting parents' or teachers' data at risk. Adults select the programs that will appear on KidDesk from those installed on the hard drive. Through simple mouse clicks, even young children can launch their own software programs and learn real-life skills playing with KidDesk accessories. Accessories include a working calculator, a phone message machine, a talking clock, and a printable calendar. Children can choose any of six theme desktops such as Dinosaur, Executive, and Circus Desks. No reading or computer skills are required. Kid Desk is for Kids aged 3-10; Family Edition is for all ages. (Disk)

Edmark Corp., 6727 185th Ave. NE, PO Box 3218, Redmond, WA, 98073, 206-556-8484, http://www.edmark.com

Peter and the Wolf — $25

Serge Prokofiev's story and music, the narration of Jack Lemmon and many captivating, original illustrations are combined to offer children a truly unforgettable storybook experience. Featuring original music performed by the Prague Festival Orchestra, Peter and the Wolf is a multimedia storybook children will want to listen to, read, and enjoy over and over again.

Ebook, Inc., 32970 Alvarado-Niles Rd. #704, Union City, CA, 94587, 510-429-1331

The Cruncher — $60

The Cruncher is a talking, animated spreadsheet targeted at ages 10 and up. The Cruncher teaches spreadsheet skills using real-world examples such as party planning, family budgeting, and calendar making. Features include a "talking feature" that reads aloud; animated clip art with sound effects for use with spreadsheets; charts and graphs; and a "notebook" associated with each spreadsheet to keep detailed information relevant to that spreadsheet. Ages 10 and up (Disk or CD-ROM)

Davidson & Associates, Inc., 19840 Pioneer Ave., Torrance, CA, 310-793-0600, 800-545-7677, http://www.davd.com

World Discovery Deluxe — $40

A great way to learn geography with this well designed series of map-based games. Even the sound is good quality. Ages 8 and up. (CD-ROM)

Great Wave Software, 5353 Scotts Valley Drive, Scotts Valley, CA, 408-438-1990, 800-423-1144

Mavis Beacon Teaches Typing 4.0 — $35
Mavis Beacon Teaches Typing for Kids — $20

Ok, who really wants to learn to type?? But it's a critical skill these days. Make it as painless as possible with Mavis Beacon. The main program features good lessons and games, plus effective feedback on monitoring. The "kids" version does not require reading skills.

Mindscape, 60 Leveroni Court, Novato, CA, 94949, 415-883-3000, 800-234-3088, http://www.mindscape.com

RESOURCES

BOOKS

Using the Mac

Macworld Complete Mac Handbook, 4th Ed. $35

Jim Heid brings together sound advice, reviews, and insights into the latest technologies in as good an encyclopedia of Mac-info as you are likely to find. A bundled CD-ROM contains an interactive version of the book filled with technical diagrams, industry profiles (including a very flattering overview of BMUG), new technology explorations (with QuickTime 2.0 and System 7.5)plus 60 megs of the Best of BMUG Shareware.

IDG Books Worldwide, 155 Bovet Rd. #310, San Mateo, CA, 94402, 415-312-0650, 800-434-3422, http://www.idgbooks.com

The Little System 7.1/7.5 Book $10

Highly acclaimed guide to System 7 and 7.5, packed with helpful information and tips. Both beginners and advanced users will find clear and concise answers to many System questions.

Peachpit Press, 2414 Sixth St., Berkeley, CA, 94710, 510-548-4393, 800-283-9444, http://www.peachpit.com

Sad Macs, Bombs, and Other Disasters, Second Edition $25

The best book for finding out what's wrong with your Mac. Edited by Lauren Antonoff and Betsy Brahm, two long-time BMUGers, this book explains things in terms you can understand. Author Ted Landau, a writer for MacUser, did a good job of making this book accessible to just about everyone. This second edition adds information covering all the latest Macintosh models.

Addison-Wesley Publishing Co., 1 Jacob Way, Reading, MA, 01867, 617-944-3700, 800-358-4566

Dead Mac Scrolls $12

Superb guide to troubleshooting and repairing older Macs from technical guru, Larry Pina. Problems are clearly set identified, and if you have a little bit of courage and aren't afraid of a soldering iron, you can save a lot of money and keep your Mac running like a dream.

Peachpit Press, 2414 Sixth St., Berkeley, CA, 94710, 510-548-4393, 800-283-9444, http://www.peachpit.com

Power Macintosh Programming Starter Kit $30

The complete guide to Power Macintosh concepts, run-time architecture, and sample code. Includes a CD-ROM with a demo version of Metrowerks CodeWarrior. It's a great introduction for anyone looking to get her feet wet in programming.

Hayden Books, 201 W. 103rd St., Indianapolis, IN, 46290, 317-581-3718, http://www.mcp.com/hayden

Zen and The Art of Resource Editing $15

A long-time favorite at BMUG, the ResEdit book is in its fourth edition. Although we are a bit biased about it, all the major Mac magazines agree that it's the best book for beginning and intermediate ResEdit users. The December '92 MacUser ranked it in the top 100 Mac products. A CD-ROM is loaded with cool stuff, including the latest edition of ResEdit.

BMUG, Inc., 1442A Walnut St., #62, Berkeley, CA, 94709-1496, 510-549-2684, 800-776-2684, http://www.bmug.org

Internet Start, Kit, 3d Edition $22

Adam Engst, creator of TidBIT!ê(the weekly online news publication), has created a readable, entertaining, and thoroughly enjoyable book for those just starting out on the Internet—and that's no easy task. It comes bundled with a number of nifty Internet utilities.

Hayden Books, 201 W. 103rd St., Indianapolis, IN, 46290, 317-581-3718, http://www.mcp.com/hayden

Creating a Healthy Work Environment — Free

After spending thousands on your software and hardware, don't overlook your most important piece of equipment: your body. This little 12-page pamphlet addresses basic health concerns from basic repetitive-stress, eye fatigue to hardware setup health issues. It even mentions laser printer ozone pollution. You can even use it to help educate your boss.

Apple Computer Inc., 1 Infinite Loop, Cupertino, CA, 95014, 408-996-1010, http://www.apple.com

The Non-Designer's Design Book — $15

Another excellent book from Robin Williams. A slim, concise distillation that will guide you around the most common pitfalls of document design. You don't need to be a desktop publishing artist to product eye-grabbing output.

Peachpit Press, 2414 Sixth St., Berkeley, CA, 94710, 510-548-4393, 800-283-9444, http://www.peachpit.com

The Mac is not a typewriter — $10

If you use a Mac and ever go anywhere near a printer, you should buy this book. It sets forth common-sense guidelines for typesetting, and explains them well. Robin Williams has done a wonderful job of lending insight to the printed page and to Mac users everywhere. It should help anyone make pages that are just a little easier on the eye.

Peachpit Press, 2414 Sixth St., Berkeley, CA, 94710, 510-548-4393, 800-283-9444, http://www.peachpit.com

Design Essentials, Second Edition — $40
Imaging Essentials — $40

These two books from Adobe Press describe a variety of production techniques to help the budding graphic artist combine the capabilities of separate software to create effects that cannot be achieved with a single application. The first book, Design Essentials, has an emphasis on PostScript-based illustrations incorporating digital photographs. The second book, Imaging Essentials, spins digital photo manipulation to expert levels and includes a section updating the first book's projects for newer software. Although Adobe software is featured in these books any digital artist can find ideas for solving those "how can I do this" blues.

Hayden Books, 201 W. 103rd St., Indianapolis, IN, 46290, 317-581-3718, http://www.mcp.com/hayden

Adobe Classroom in a Book Series — $29 to $35

Who better but Adobe to produce the definitive book on using Illustrator, Photoshop, Advanced Photoshop, Premiere and PageMaker. Each book includes a CD-ROM with projects to provide hands on training experiences.

MacMillan Books, http://www.mcp.com

MAGAZINES AND JOURNALS

Macworld — $25 per year

In this age of shrinking magazines, Macworld Magazine continues to print close to the same number of editorial and review pages, even though it now has fewer ads. The articles, columns, and charts continue to improve, with many more individual products being reviewed in each issue than were in years past. Not as punchy or hard hitting as MacUser and the ratings can be hard to fathom. Sometimes the same product gets different star ratings in the same issue!

Macworld Subscription Services, PO Box 54529, Boulder, CO, 80322-4529, 415-267-1743, 800-234-1038, http://www.macworld.com

MacUser — $27 per year

MacUser Magazine continues to produce relatively hard-hitting reviews, and they get points for taking risks and being crankier than Macworld. MacUser Labs can do great things, but they are occasionally inexplicably contradictory or inconsistent. The features are first rate with regular reports on everything from networks to kids software. The look seems a bit cluttered and less visually interesting than Macworld, and it lacks any index of past articles between the annual comprehensive indexes.

MacUser, PO Box 56986, Boulder, CO, 80322-6986, 303-447-9330, 800-627-2247, http://www.ziff.com/~macuser/

MacWEEK — $120 per year

With generally good reviews, some serious investigative reporting, and the best gossip column this side of the checkout stand, MacWEEK is still the only Mac magazine worth lying for. The writing is lively, the ads in the back have the lowest prices available, and the MacInTouch column reminds us of what the Mac world was like a decade ago. Unfortunately, it is available only by subscription, at $125 per year, unless you have 20 to 5000 computers on hand and control a million-dollar budget, in which case it's free. Better still, log on to the MacWeek Web site. The articles go online on the Friday before the printed edition hits the mailboxes!

MacWEEK, Customer Service Dept., c/o JCL, PO Box 1766, Riverton, NJ, 08077-7366

BYTE — $30 per year

BYTE is the oldest computer magazine around. It came into the Mac world somewhat late, but has made up for it with timely and well-researched Mac articles. They print the kind of articles that the mainstream Mac magazines won't: articles full of technical jargon about how the Mac really works, and good articles about those other machines. They even have an 800 number for subscriptions, an idea the other Mac magazines might want to "borrow." Great in-flight reading material.

BYTE Subscription Dept., PO Box 555, Hightstown, NJ, 08520-0555, 800-257-9402, http://www.byte.com

609-461-2100, http://www.zdnet.com/~macweek

MicroTimes Magazine — Free in CA!

In addition to David Morgenstern's BMUG column, this monthly magazine has news, articles and reviews covering many different flavors of CPU—and ads, ads, ads. MicroTimes also has superior coverage of computer-related legal and social issues.

BAM Publications, Inc., 3470 Buskirk Ave., Pleasant Hill, CA, 94523, 510-934-3700, microx@well.com

Seybold Report on Desktop Publishing — $245 per year

If you are really into desktop publishing and have the bucks to burn, this is the publication for you. As you can imagine, it covers every facet of print publishing hardware and software. It also covers color pre-press systems and some non-print publishing technologies like CD-ROM and networked document systems.

Seybold Publications, PO Box 644, Media, PA, 19063-0644, 800-325-3830

Macintosh Product Registry — $40 per year, $15 each

If you have ever wanted a comprehensive list of Mac programs and products complete with descriptions, company names, addresses, and phone numbers—except for games—this is the magazine to get. They also publish this information on a CD-ROM (with a mediocre HyperCard interface) for $99. We refer to this book daily in the BMUG business office and at our Helpline clinics. (We also used it extensively to gather information for the Choice Products listings!) Quite an indispensable publication.

Redgate Communications Corp., 660 Beachland Blvd., Vero Beach, FL, 32963, 407-231-6904, 800-333-8760

ONLINE

TidBITS — Free

This online mailing from Adam Engst is one of the best sources for up-to-the-minute rumors, news, and tidbits. He gets them out on the Internet fairly regularly and is almost always on top of all the latest gossip; he often has the nitty-gritty details that companies don't really want us to know. There are product reviews, as well.

Adam Engst, 1106 North 31st Street, Renton, WA, 98056, http://www.tidbits.com

Ric Ford's Macintouch Web Page http://www.macintouch.com

Want the latest info on products, updates, and press releases? Check out Ric Ford's excellent Macintouch Web page. It even has links to the specific companies in the news. It's simply the best source for the latest info...

http://www.macintouch.com

Guy Kawasaki's MacWay EvangeList
http://evangelist.macaddict.com/

Free

Get the latest news, product info and special offers direct to your email box from one of the most enthusiastic Mac-o-philes around, Guy Kawasaki. Just send your email address to listproc@solutions.apple.com and include "Subscribe MacWay <YourName>" in the message...

http://evangelist.macaddict.com/

Ted Landau's MacFixIt
http://www.macfixit.com

The most current reports of hardware glitches and software bugs with hot links to companies and bug fix sites. Great place to check if you have a problem getting your Mac to run as you'd like.

http://www.macfixit.com

Mac Central
http://www.maccentral.com

Another excellent sourse of news in the Mac OS community with late breaking stories and information on new products and software updates.

http://www.maccentral.com

REPAIRING YOUR MAC

San Francisco State University Bookstore Computer Service Center

If you are in the San Francisco area, a great place to go for service is the San Francisco State University Bookstore Computer Service Center. They are a fully authorized Apple service center and can take all comers, whether a SFSU student or not. It's run by long time BMUGer and help line wiz Bill Nolan with a great staff including BMUGer and regular helpline coordinator, webmaster and Filemaker Pro guru, Lorca Hanns, and BMUG's own award-winning Planet Administrator, chris r. harris. They know what they're doing, which can be a nice change of pace from your average repair shop.

SFSU Bookstore Computer Service Center, Cesar Chavez Bldg., 19th and Holloway, San Francisco, CA, 415-338-6216, http://www.bookstore.sfsu.edu

PURCHASING MAC PRODUCTS

Aisle 17/Apple Disability Solutions

Apple has included a few pages of software and hardware aimed at people with disabilities in its Apple Catalog for years. Now it has created a separate catalog for the same market called Aisle 17. Prices seem a bit high, but all the best stuff seems to be here.

Aisle 17/Apple Disability Solutions, PO Box 898, Lakewood, NJ, 08701-9930, 800-600-7808

ComputerWare

One of the first Mac-only store chains in the country, ComputerWare is still providing reasonable deals on hardware and software, and some good information and tips, if you corral one of the better salespeople. They also offer GE Consumer Service as a lower-cost replacement for AppleCare, Apple's very expensive program to extend Apple warranties (BMUG doesn't recommend AppleCare, due to the high cost). Definitely a store to visit when looking for Mac accessories.

ComputerWare, (check your local phone book in the SF Bay Area), http://www.macsource.com/

User Group Store

As a BMUG member you have a great opportunity to purchase new and refurbished hardware, and the latest software directly from the User Group Store. Prices are often below street price. Products are thoroughly checked out and shipped quickly. Many BMUGers have taken advantage of their great offers. There is one disclaimer. BMUG benefits from every product you buy. The more BMUG members buy, the more points BMUG accumulates toward products BMUG can they acquire and use to better serve our membership. A true "win-win" situation.

User Group Connection, 2840 Research Park Drive, Suite 100, Soquel, CA, 95073, 800-350-4842, http://www.ugstore.com

Coffee

Café Firenze — $1.80/ Large Double Mocha

Join Team Caffeine! This Newsletter certainly wouldn't be in your hands right now if Firenze didn't make such a damn good cup of coffee—their mochas are to die for. We just wish they would stay open twenty-four hours a day, so we wouldn't ever have to go to sleep.

Café Firenze, Shattuck & Center, Berkeley, CA, 94704

Glossary

The BMUG Glossary

A Guide to Computer Terms

This glossary has an amazing history—from its humble 6-page debut in the Spring 1987 Newsletter to its present incarnation, there have been many con tributions and editions along the way. Originally created by Stephen Howard and Raines Cohen, it grew significantly when volunteers compiled various existing sources into a larger version edited for clarity and conciseness.

The present version was compiled by John Chapot, incorporating information and inspiration from various sources—most notably, The Macintosh Dictionary by Andy Baird, and Robin Williams' Jargon, an Informal Dictionary of Computer Terms. The work was facilitated in part by using John's word-wrangling product "Boswell's Companion", a nifty HyperCard stack available (free) from many online services and the BMUG disk library.

The final filter and full-circle edit was accomplished over a holiday weekend by one of this glossary's originators, Raines Cohen, currently Online Communications Manager for User Group Connection..

1k-XModem *communications*: A protocol that terminal programs use to send files over connections in 1-Kbyte chunks (as opposed to Xmodem's 256-byte-sized chunks). If used by both terminal programs, it can increase file transfer speed.

1k-XModem/G *communications*: This version of 1k-XModem assumes that hardware error-correction (such as MNP level 5) in use by the modems at both ends provides a reliable connection, so it does away with the block-by-block checking. The result is a very fast single-file transfer protocol for use if you have a reliable connection and YModem/G is not readily available.

10BaseT *networking*: A type of wiring often used on Ethernet networks. Why the weird name? Well, it stands for 10 megabytes per second (the data transmission rate) baseband (just data, no carrier) and twisted-pair wire (as opposed to coaxial cable). It's a medium-performance relatively inexpensive wiring system that's rapidly becoming the most popular way to do Ethernet.

2.5 inch drive *storage*: A hard drive with a platter 2.5 inches across, small enough to fit most Macintosh PowerBooks.

3.5 inch drive *storage*: A hard drive with a disk platter 3.5 inches across. The standard diameter for half-height and third-height drives. Capacities up to 4 gigabytes are available.

32-bit addressing *system software*: (see also 32-bit clean) Before System 7, Macs used 24 bits to enumerate RAM addresses (locations), which yielded an absolute upper limit of 8 megabytes. System 7 and above can use 32 bits for each address, expanding the potential total memory limit to over 240 megabytes. Macs that were built with System 7 in mind have software in ROM that can use 32-bit addressing (some don't even let you turn it off on the Memory control panel), but the Mac II, Mac IIx, Mac IIcx and SE/30 need special software - either Mode32 by Connectix or 32-bit Enabler from Apple. The plain Mac II also needs a PMMU chip installed. Older versions of some software are called "not 32-bit clean" because they crash when 32-bit addressing is turned on.

32-bit color *display*: Color system in which every pixel has a 32-bit number attached to it describing exactly what color it should display. Most Macs need special software from Apple and special color video cards and monitors from other companies to display that much color. In those 32 bits, 24 are used for color information and 8 are an alpha channel for transparency or other information. 24 bits can describe just over 16.7 million different colors.

5.25 inch drive *storage*: A hard drive whose disk platter is 5.25 inches across. The standard diameter for full-height drives. These only fit comfortably in larger-chassis Macs.

680x0 *hardware*: The family of Motorola processor chips that ran all Macs until 1994.They use CISC (complex instruction set computing) architecture.

68000 - The original Mac chip, running at 8 MHz, it lives at the center of the Mac 128, 512, 512ke, Plus, SE, Portable, Classic, and PowerBook 100.

68020 - The chip that sits at the heart of the Mac II, LC, Classic II and Performa 200. It is five times faster than the 68000 in most operations.

68030 - The chip that runs the Mac IIx, SE/30, LC II, IIcx, IIci, IIfx, IIsi, PowerBook 140, 145,160, 170, 180, PowerBook Duo 210, 230, IIvx, IIvi, and the Performa 400 and 600. It is five or six times faster than the 68000 in most operations, and has a PMMU built-in.

68040 - Combines the 68030 and 68882 into one chip with a 4k memory cache and is about five times faster than the 68030/68882. This chip operates the Quadra 700, 900 and 950 and the new PowerBook 500 series. Some use the 68LC040, which lacks the math functions but costs less and requires less power.

68881: The special floating-point mathematics chip designed by Motorola inside the Mac II along with the 68020. Together they are about 100 times faster than the 68000 in floating point mathematics.

68882: The special decimal mathematics chip designed by Motorola inside the Mac IIx, IIcx, IIci, SE/30, IIvx, and the Powerbook 170 and 180 along with the 68030. Together they are about 100 times faster than the 68000 in floating point mathematics.

8-bit color *display*: The most common setting for color Macs. Eight bits lets you display 256 colors onscreen at once.

A/UX *system software*: (Apple/UNIX) Apple's version of the UNIX operating system developed by AT&T and found on big computers and some personal computers. The Apple version is based on Xerox System V with Berkeley 4.2 extensions.

accelerator *hardware*: A card with a second, more powerful processor which you can insert into a Mac and make the computer operate faster. Some simply speed up the Mac's existing processor; others have their own CPU and even their own RAM and card slots.

access privilege *system software*: The ability to open, see, and make changes to files and folders on a file server. Different users can have different privileges for different folders.

acoustic coupler *communications*: A modem connector that physically links to a telephone handset,.unlike the more common direct-connect modems that plug into the phone line. Useful if you're traveling or at a location (such as an unfamiliar country or office) with nonstandard phone service. While

early versions were less reliable and slower than today's modems, within the last few years a wide variety of acoustic couplers have become available.

active matrix *display*: A type of liquid crystal display (LCD) that has a transistor for each pixel - used in the Mac Portable and many high-end PowerBook models, including the 170, 180C, 270C, 280C, and 540 and 540C. These displays have a higher contrast and wider viewing angle than passive-matrix screens (even "superfast" or "dual-scan" models), but they're more expensive and more difficult to manufacture.

active window *interface*: The frontmost window on the desktop; the window where the next action will take place. An active window's title bar is highlighted.

ADB *hardware*: (Apple Desktop Bus) A port used by most Macs to communicate with peripheral devices: mice, keyboards, and such.

AFP *networking*: (AppleTalk File Protocol) A protocol for sharing documents /applications on an AppleTalk network. Users can log into "AFP-compatible" file servers through the AppleShare icon in the Chooser.

Apple File Exchange *system software*: An application that can translate some document formats between a wide variety of applications and operating systems.

alert box *interface*: A message box that appears when the Mac needs to tell you something important. It usually brings bad news and a beep.

algorithm *programming*: Any specific procedure for solving a problem in a finite number of steps. Named after al-Khuwarizmi, a ninth-century Arab mathematician. Programmers use this term to refer to pieces of code.

alias *system software*: A stand-in for an item on the desktop (their names appear in italics). Opening an alias actually opens the item it stands for. You can put aliases of applications, documents, whatever you like, into any folder for quick access. Put aliases into the Apple Menu Items folder to make them appear when you pull down the Apple menu. A feature of System 7.

aliasing *interface*: 1. The stairstepping appearance of diagonal lines and curves on a low resolution display. 2. A metallic distortion heard when digitized sounds are sampled at too low a rate, forcing the computer to fill in the gaps. In both cases, anti-aliasing resolves the problem by smoothing things out, sacrificing some detail in order to look or sound better.

alpha channel *display*: When you create 24-bit images in a 32-bit graphics world, you have eight extra bits to play with. Software developers use these bits in a variety of ways; to carry transparency information, to create masks, and the like.

analog *interface*: A flow of information where things change smoothly and have an infinite number of values and imitate (are analogous to) the real-life source. For example, on an analog phonograph record, the wiggles in the groove get bigger as the music gets louder. Contrasted (and often converted to) digital, which divides up differences into pieces for storage on a computer.

ANSI *industry*: (American National Standards Institute) A group that publishes many computing standards, which are usually upheld by the industry. The US representative in the ISO (International Standards Organization). Often used as shorthand for a particular standard, as in "It's ANSI-compliant!"

anti-aliasing *interface*: Software techniques used to smooth out jagged-appearing edges of curved lines or sounds, such as the blur tool in Photoshop. See aliasing.

APDA *programming*: (formerly Apple Programmer's and Developer's Association) The organization within Apple that provides low-cost technical information and materials to programmers.

Apple menu *interface*: The menu on the left end of the menu bar designated by an Apple symbol. It gives access to miniature applications called Desk Accessories, such as the Calculator and Scrapbook. Under System 7, you can put aliases of applications and documents into the Apple Menu Items folder (in the System folder), and they will appear under the Apple Menu. You can get really fancy by putting one or more spaces in front of your aliases' names to move them to the top of the list, and by getting one of the third-party utilities that turns the Apple menu into a hierarchical menu.

Apple events *programming*: A set of standards used for interapplication communication under System 7 and higher. The Apple events registry defines suites: Required (Open, Save, Print, Quit), Core (set and get data, deal with individual pieces of information), .and category-specific events (like Word Services). OpenDoc and Open Scripting Architecture languages such as AppleScript rely on Apple events.

AppleShare *networking*: Apple's file server software that allows Macs and other computers which are connected together (forming a network) to share applications, files and printers. An AFP-compliant server is AppleShare-compatible.

AppleTalk *networking*: Apple's set of rules governing how Macs communicate between themselves and other computers and peripherals. Often inaccurately used in reference to the cables which Apple sells to connect Macs together; these are actually called LocalTalk.

AppleTalk connector *networking*: The physical box you need to connect a Mac to an AppleTalk network. It has a serial cable on one end and a connection for a network cable on the other.

AppleTalk Phase 2 *networking*: The name for a version of Apple's network protocol that allows for 16.7 million network addresses and has improved data handling, all of which is invisible to users but good for network software and hardware. Comes with System 7 and higher; required for many complex networks.

application *interface*: A collection of tools that programmed to perform a specific set of tasks; also known as a program. Contrasts with a document, a piece of software that is acted upon by an application. OpenDoc part editors are mini-applications.

application font *system software*: The font an application will use unless you specify another. Usually this is Geneva.

ARA *networking*: (Apple Remote Access) Apple software that allows a Mac to connect to an AppleTalk network over a phone line.

ARPA *industry*: (Advanced Research Project Agency) An arm of the US Department of Defense that funds technology research. Funded the ARPANET, which became part of the Internet.

ARQ *communications*: (Automatic Repeat reQuest) A general term for error control protocols featuring hardware detection and retransmission of defective data. This term is used primarily by US Robotics.

arrow *interface*: The default shape of the cursor used for selecting objects and commands..

ASCII *industry*: (American Standard Code for Information Interchange) This particular mapping of the letters of the Roman alphabet and Arabic number system to number codes is understood by nearly all computers (except IBM mainframes, which use EBCDIC). Documents containing only text and numbers are sometimes called ASCII files (or text files). ASCII is the US adaptation of an international standard. A 7-bit binary code is used. ASCII is universally supported in computer data transfer.

assembly language *programming*: Specific and detailed instructions for manipulating pieces of information in a computer. These instructions are "low level", that is, very close to machine language. Assembly language programming is difficult but produces very speedy and compact programs (or portions of programs). Unlike compiled languages, assembly language programs are written for a specific processor, which makes moving them to another platform with a different processor very difficiult.

asynchronous *communications*: Literally, an event not happening at the same time as another event. Usually refers to computers exchanging information over phone lines, when they do not know precisely how long it will take to send each piece of information. Data is preceded by a start bit and followed by a stop bit since the time between transmitted characters varies. Lately heard often as part of the name of a high-speed wide-area communications protocol: Asynchronous Transfer Mode (ATM).

ATM: 1. Adobe Type Manager, A program from Adobe Systems, Inc., that smooths out the edges of PostScript fonts you see on your screen. Since QuickDraw printers (ImageWriters, HP DeskWriters, Apple StyleWriters, fax modems, etc.) print what they see on the screen, if PostScript type looks good on the screen it will look good in print. Under System 6, you needed ATM to interpret PostScript fonts for the screen. TrueType GX incorporated a version of this function. 2. Asynchronous Transfer Mode (see above). 3. Automatic Teller Machine (cash-dispensing box hooked to a bank).

attack dialing *communications*: Dialing a number or set of numbers repeatedly until you get connected. Used by impatient telecommunicators trying to call busy bulletin board services (recommended when calling Planet BMUG, for example). The Federal Communications Commission (FCC) and other nations have set limits on how many times you can repeat without a break. Always make sure

you have the correct phone number before attack dialing!

authoring system *programming*: A programming language for the rest of us. Authoring systems, such as HyperCard, MacroMedia Director and AuthorWare are collections of tools that make it easier for casual programmers to create applications. Often used in multimedia to create a user interface.

auto answer *communications*: The ability of a modem to answer a phone call. You tell the modem to do this by typing "ATA" and hitting the Return key (to answer right away, "ATS0=1" to answer the next call on the first ring, with Hayes-compatible modems) in most terminal programs. The modem detects a ring and answers the phone without assistance from a program. This is a standard feature of any decent direct-connect modem.

autodial *communications*: The ability of a modem to dial any number you tell it without using a phone device to dial. AKA direct-dial; not available on acoustic couplers.

autograph *programming*: The term for version information from an application that appears in the Get Info… box in the Finder. See signature.

background *system software*: When an application runs in the background it is operating behind the scenes while you use another application. Most often you must be running MultiFinder or System 7 or higher to perform tasks in the background.

backup *storage*: 1. (verb) Actually spelled "back up". The very necessary process of copying important software and documents onto some other medium (floppy disks, magnetic tape, et al.) to guard against their loss should anything happen to the original. 2. (noun) The media containing copies of important software and documents.

Balloon Help *system software*: Those cute little comic strip balloons that pop up wherever your cursor is. They contain helpful, if somewhat limited, information about whichever item on the screen your cursor is pointing at. You turn balloon help on and off by choosing "Show Balloons" or "Hide Balloons" from the Help Menu, which is shown by a balloon containing a question mark. A part of System 7; System 7.5 supplements it with Apple Guide, which provides more in-depth "how do I do this?" kind of help..

bandwidth *communications*: The amount of information that can be handled by a device or system. For example, a telephone can carry audio signals (analog) in a band between 20 Hertz (cycles per second) and 4,000 Hz - just enough for intelligible speech, but not wide enough for music. This is a low-bandwidth system. On the other hand, a cable-TV system may use signals up to 400,000,000 Hz - it takes that much bandwidth to carry dozens of TV channels. In a digital system, such as the bus in your computer, bandwidth is measured in bps (bits per second). In general, the broader the bandwidth of a system, the more information it can carry, and the more expensive it is.

baseline *interface*: The imaginary line upon which characters in a line of text rest.

baud *communications*: When transmitting data, the number of times the medium's "state" changes per second. A 2400 baud modem changes the signal it sends on the phone line 2400 times per second. Since each change in state can correspond to multiple bits of data, the actual bit rate of data transfer may exceed the baud rate. Modems typically communicate at 1200, 2400, 9600 or 14,400 baud. Higher is better, but often a doubling of baud will not result in a doubling of overall performance because of limiting factors.

BBS *communications*: (Bulletin Board System) A service usually set up by hobbyists, organizations or clubs to facilitate the exchange of information about some particular topic. You access a BBS through a modem which calls up the number for the BBS. On your screen you see the computer equivalent of a bulletin board. You can post messages, ask and answer questions, and make new friends. Larger, usually commercial, BBSes are called information services or online services.

beach ball *interface*: The cursor as a ball divided into dark and light quarters, usually spinning when an application is busy completing a task of unknown duration.

Bell 212A *communications*: The set of rules for transferring information with modems at a rate of 1200 baud followed by most modems in the US.

beta *industry*: The testing stage of a piece of software or hardware in which problems or bugs are discovered and (we hope) corrected. Usually, beta versions of a product are given to people called beta-testers who report problems to the designers. After the internal alpha-test, before a paying-customer's gamma-test.

Bézier curve *graphics*: (pronounced "BEZ ee yay") A curve described by mathematical equations. The computer presents these curves as being composed of anchor points (where the curve starts, stops or changes direction) and control points, which you use to alter the deflection of the curve. PostScript objects and some scalable fonts are based upon Bézier curves.

binary system *programming*: A number system composed entirely of zeroes and ones. This is the base-2 system, where the equation 10 + 10 = 100 is the equivalent of our (base-10) 2 + 2 = 4.

BinHex *communications*: A standard way of converting the information in Macintosh files into a form that can be stored on other computers, created by Yves Lempereur of MainStay. There have been several versions of BinHex, but the only one that most Mac users ever hear about is BinHex 5.0, which converts files into eight-bit format for storing on personal computers. BinHex 5.0 conversions happen automatically when you transmit a file using MacBinary. There is also a BinHex 4.0 in use for converting Mac files in a seven-bit format for storing on older UNIX computers and mainframes. On the computer storing the BinHex-ed files, they appear as documents, no matter what they were on the Mac.

bit *programming*: Short for "binary digit". A very small piece of information equal to a value of 0 or 1, off or on. Lots and lots of these together instruct your computer on how to work and compose all your data. 8 bits equals a byte.

bit depth *display*: A characteristic/setting of a display card or Mac that determines how many colors you can show at once on a screen. 8-bit color allows 256 colors at once.

bitmap *interface*: An image or font built out of pixels on screen.

bitmapped font *interface*: Fonts on the Mac come in tw varieties: bitmapped and outline fonts (TrueType and PostScript). Bitmapped fonts are stored in suitcase files and copied into the System file to use them. They are built out of the pixels on the screen. When you print a bitmapped font on any printer, regardless of resolution, the letters are still jagged. They come in particular sizes, unlike outline fonts, which can adjust to any size without losing quality.

bitmapped graphics *interface*: A type of graphic composed of lots of pixels. Bitmapped graphics can be edited dot by dot, at low resolution (screen resolution, 72 dots per inch or dpi) in MacPaint or at incredibly high resolution in Photoshop. Each dot can contain a lot of information (up to 32 bits worth) - color, grayness, transparency, etc. - but it's still a dot. Contrasted to object graphics, madeup of lines and components. Because video screens are made of dots called pixels, the Mac's QuickDraw software deals exclusively in bitmaps and rasterizes (converts) object graphics into bitmaps for display. A bitmapped image has a fixed resolution which is determined when it is created, so it can only print at whichever resolution is lower, its own or the printer's.

Boolean algebra *programming*: A branch of mathematics that concerns itself with binary logic where every answer is either true or false. Boolean operators include "and", "or", "not" and combinations such as "and not". Computers love this stuff. You probably have encountered it when searching a database. Named for its inventor, George Boole, a nineteenth-century English mathematician.

boot *interface*: To start up your computer; that is, turn on the power and, if you don't have a hard drive, insert a floppy with a System Folder on it. This odd-sounding bit of jargon dates back to the very early days of computing. Early computers had no ROM (permanent memory). When you first turned on the power, the machine was truly a blank slate. To start up one of those old machines, you had to first enter a short "loader" program (in binary) by flipping switches; this program was just sufficient to let the machine use its paper tape or punched card reader to load in a longer, full-fledged loader program, which in turn could be used to load the program you wanted to run! Loading a loader in order to load the loader that would load your program reminded operators of the old phrase "Pulling yourself up by your own bootstraps"; hence the short loader came to be known as the bootstrap loader, and the whole process "booting up". - Andy Baird.

bps *communications*: (bits per second) The speed at which bits are transmitted over a communications medium. This speed may exceed the baud rate.

bridge *networking*: A combination of hardware and software connecting different types of network cabling. If the bridge connects network cabling to phone lines, it is a half-bridge, although most people don't make that distinction.

broadcast *networking*: When a device on an AppleTalk network sends out a piece of information so that all other devices receive it.

buffer *programming*: A generic term for an area of memory used to store information while it is being collected and before it gets passed on to its final destination.

bug *programming*: Unexpected behavior usually caused by a mistake in programming but sometimes by a hardware malfunction. According to the late computer pioneer Grace Murray Hopper, the first computer bug was just that - a moth that became stuck in one of the relays of the Mark II, a very early (1940's vintage) electromechanical computer at Harvard, causing it to malfunction.

bundle bit *system software*: A piece of information attached to an application that tells the Mac how the application can create documents. If a document loses track of its creator's bundle bit, it will not open properly. File editors will let you set or unset the bundle bit manually, and there is a nifty utility called BundAid that will set all bundle bits correctly.

bus *hardware*: Circuitry that transfers information between the parts of a computer. Bus also refers to connections between computers on a network or allowing you to plug in other peripherals, such as a SCSI bus, Nubus, PCI bus or IDE bus.

bus error *system software*: One of the most commonly occurring error codes to appear on your Mac, designated "Error Code ID 1" or "Type 1 error". You can often eliminate these errors by allocating more memory to the application in question. Under System 7, this error can indicate that the application is not 32-bit clean, and you will need to either get an upgrade or turn off 32-bit addressing on the Memory control panel.

button *interface*: An area of the screen which sends a command to an application when you click on it. Also called push button. A button with a double-thick border is the default button and hitting the return or enter key on the keyboard activates it.

byte *programming*: Eight bits forming a meaningful unit. It may have a readable ASCII value or some other coded meaning to the computer.

CAD *industry*: (Computer Aided Design) Using computers to perform many of the engineering and architectural tasks traditionally done by draftsmen. Oddly, this term does not apply to graphic arts.

CAE *industry*: (Computer Aided Engineering) Vertical-market software to solve engineering questions, such as stress on beams and seismic strengthening.

CAM *industry*: (Computer Aided Manufacturing) Using computers to control machinery such as lathes, assembly lines, motion-controlled cameras and robotic arms.

capture *hardware*: Obtaining video or sound from the outside world and digitizing it for further processing on the Mac. Performed by hardware built in to the AV Macs or available on third-party cards. Frame Capture is digitizing a still frame from a video source. By the way, uncompressed video capture uses up about 1 megabyte of hard drive space per second.

card *hardware*: A fiberglass board composed of circuitry and chips which do something specific when placed inside a computer. You can get video cards, accelerator cards, clock cards, printer cards or whole computers on a card. Cards plug into slots inside most Macs. There are PDS slots, PCI and NuBus slots.

caret *interface*: 1. Generic name for any symbol indicating the place in a block of text where new text will be inserted. Called the "insertion point" on the Mac II. The little wedge symbol, ^, by typing Shift-6, used by many programs during find-and-replace operations. For example, in WriteNow you specify a tab character by entering ^T in the Find window. In many programming languages the caret is used to indicate exponents of numbers, for example, 2^8 means 2 raised to the eight power, which equals 256.

carpal tunnel syndrome *interface*: An occupational disease caused by doing the same movements with your hands over and over. The symptoms include shooting pains, tingling, or numbness in the wrist, hand or finger joints. Prevention is the best way to deal with this: keep your wrists straight while you type and/or use wrist rests, lower the keyboard, vary your tasks, take breaks, sit up straight. CTS can be permanently disabling, so if you suspect anything, see your doctor now. In extreme cases, surgery may be necessary, in lesser ones, the lifelong wearing of a wrist brace.

carrier *communications*: Some path along which computer information can travel. In telecommunications, carrier refers to a continuous frequency capable of being either modulated or impressed with another information-carrying signal. Carrier signals are generated and maintained by modems via the transmission lines of the phone companies.

cartridge hard drive *storage*: A hard drive with a removable platter. Among the advantages of this system are lower cost for increased storage, the ability to switch to a different operating system painlessly, portability and secure backup. Disadvantages are slightly decreased reliability and the initial high cost of the mechanism.

CASE *programming*: (Computer Aided Software Engineering) Using computers themselves to help manage the complex task of writing software, especially large multi-part programs.

case *interface*: Whether a letter is capitalized (upper case) or not (lower case). Many word processors have commands that let you change the case of a word or group of words. Some searching and sorting functions may be made "case sensitive", that is, capital letters sort before small letters and a small letter does not equal its capitalized self. Most search functions are case-insensitive unless told to be otherwise.

CCITT *industry*: (International Consultative Committee on Telegraphy and Telephony — French) An international standards organization for telecommunications sponsored by the Uniteda Nations.

CD-I *multimedia*: (Compact Disc Interactive) Standards addressing the addition of high-quality sound, computer pictures, and some video to a CD-ROM in the hopes of making the total package more fun or informative to use. A compact disc standard waiting for a cool product to justify its existence.

CD-ROM *multimedia*: (Compact Disc - Read Only Memory) Optical media which can store between 500 and 750 megabytes of computer data, or about 70 minutes of Eric Johnson (audio). The information on the disk cannot be changed, although it can be copied and read. There are disks with the complete works of Shakespeare, dictionaries, BMUG's library, collections of photos, history, images of the works in the Louvre, etc.

cell *interface*: A single block in a spreadsheet capable of holding data or a formula. Each cell is identified by its row and column numbers. In many ways analogous to a field in a database.

CERN: CERN is one of the world's largest scientific laboratories and an outstanding example of international collaboration of its many member states including Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland and the United Kingdom. (The acronym CERN comes from the earlier French title: "Conseil Europeen pour la Recherche Nucleaire"; it is known also as the European Laboratory for Particle Physics.) What the the World Wide Web has come to be, is due in large part, to research and work that came out of CERN.

check box *interface*: A special button that adds or removes an option.

checksum *programming*: A simple kind of error-checking that adds up the bits in a piece of information, divides by some number, and checks the remainder.

chip *hardware*: That truly amazing and remarkably tiny piece of silicon that has an entire electronic circuit embedded in its surface.

Chooser *networking*: A desk accessory that allows you to designate a network device you want to communicate with. Mostly used to select a printer, the Chooser can also select file servers, networks, fax modems, other output devices, and the like.

cicero *publishing*: A French typesetting measurement, slightly larger than 1/6th inch.

CISC *hardware*: (Complex Instruction Set Computer) - Processor architecture that is capable of handling lengthy, complex instructions (code) which often require more than one clock cycle to complete. Program file length is kept to a minimum; the trade-off is that this type of processing runs slower than comparable RISC (reduced) processing. Motorola's 680x0 chips, and Intel's -86 chips are popular CISC devices. Until the introduction of the PowerPC, all desktop computers used CISC architecture.

click *interface*: The action of moving the mouse cursor (usually a little arrow on the screen) on top of something on the screen and pressing and releasing the mouse button. Clicking will do one of three things 1) it will select the item clicked on, if that item is selectable (like an icon on the desktop); 2) it will perform some action if the item clicked on was a button; 3) it will do nothing or deselect anything previously selected if the item clicked on was neither a button nor selectable. Some items that do nothing when clicked on will do something if you click and move or drag

the mouse without releasing the mouse button. On a Newton, tap.

client *networking*: One-half of a two-part software system. The other half is the server software. Your computer is the client and you log into the server and communicate with it. This relationship is used on BBS's such as Planet BMUG, and on the Internet.

Clipboard *system software*: The place in memory where the things you Cut or Copy are stored. The Clipboard usually can contain only one selection at a time. This information is erased whenever you turn the computer off. The kinds of information you can transfer between applications using the Clipboard includes plain text and pictures from the Mac screen. Inside an application, however, the Clipboard can hold almost anything type of information and can even hold multiple items.

close box *interface*: A small square in the upper left corner of a window which, when clicked, closes the window. Inside an application, closing the window removes one view of a document, and is not the same as Quitting, though some applications will inappropriately quit upon this action.

Close View *system software*: A Control Panel that comes with Apple System 7 intended for visually-impaired users. It magnifies the screen image. It can also reverse the screen to white characters on a black background. A commercial product called InLarge from Berkeley Systems does this and much more.

CLUT *display*: (Color Look-Up Table) A table containing all the colors that a specific image uses, mapping color codes to particular color values. CLUTs usually contain 256 colors (8 bits) but can hold many, many more if the video card can handle it. Often the CLUT (called a palette by some applications) can be customized for the needs of the particular image on display. In graphics programs, the currently active window uses its CLUT for the whole screen, which can make the images in other windows look temporarily discolored (with 8-bit or less color).

CMYK *display*: (Cyan, Magenta, Yellow, Black) A color system used in printing for creating almost any color overlaying certain amounts of these four colors.

code *programming*: The programming content of any application. The ROM chip in your Mac contains bite-sized segments of code which applications may call upon. A HyperCard script is code. Programming languages, such as C or Pascal, have to be boiled down by a compiler program into a binary code called machine language in order to be run on the computer. Others, such as HyperTalk or BASIC, are interpreted and the binary instructions are sent to the machine by the interpreter.

codec *communications*: (compressor/decompressor) Hardware or software that compresses and expands data.

ColorSync *system software*: Apple's color management system that provides device-independent color consistency.

Command key *interface*: A combination of keys pressed while holding down the Command key, such as Command-S to save a file. Command keys most often perform the same function as menu commands, such as Command-N for "New". Actually the term is "Command-key equivalent", but most people say "Command key" for brevity.

command-line user interface *interface*: The way in which users controlled most computers until the Mac came along. A command-driven operating system, such as DOS or UNIX, is strictly text based. It prompts you for input with something like ? or C: or > and you type something like DIR, which means "give me the directory of things on this hard drive". Amazingly, this user-hostile interface is still the predominant one on the planet on millions of DOS machines. It is also the basic interface for telecommunications, where a terminal is the lowest common denominator. It's called "clooey" (CLUI) as opposed to "gooey" which stands for graphical user interface (GUI).

compiler *programming*: A program for creating programs, which takes a series of commands (written in a computer language like C or Pascal) and converts it into the binary numbers (called object code) that a processor can understand. Why is a translation necessary? Well, if you had to write 1101 0011 0001 0011 1110 every time you wanted to add two numbers together, you'd be pretty unhappy. A compiler lets you write "add 1 to 2"; then it does the hard part.

compression *communications*: 1. Software that reduces the number of bytes in a file by means of clever algorithms which (among other things) detect patterns and substitute special symbols for oft-repeated groups of characters. At first they were used for packing info for transmission to others via phone lines or floppy disks. With faster processors, the new trend is to compress files each time they are saved to your hard drive and decompress them "on the fly" when they are called for. Examples of the former are Stuffit, CompactPro and DiskDoubler; examples of the latter are Stacker and AutoDoubler. 2. Image compression software that may employ shortcuts which result in a loss of some of the data but which enable immensely large files such as sound and video to be handled. 3. Data compression by modem hardware that allows more information transfer in a shorter time frame.

computer paper *output*: 11 by 17 inch paper that accountants use, often featuring alternating green and white stripes (to make it easier to follow lines across the page). Not to be confused with continuous-feed paper that has a removable edge with guide holes.

computer science *programming*: A collective term for the mathematical and theoretical underpinnings of computers and computing.

concatenate *programming*: To tie text strings together. If you concatenated "1600" with a space and then with "Pennsylvania Ave." the result would be "1600 Pennsylvania Ave.". Concatenation is used in macros, HyperTalk and some applications' search windows.

concurrent application *networking*: An application that is written so that it can run on a file server at the same time as AppleShare. Such applications usually provide some service to the network such as print spooling or electronic mail.

conference *communications*: An area of public messages on a BBS, usually with a particular topic and, often, a host or moderator to guide the discussion. Sometimes called folder, SIG (special interest group) or Echo.

connector *networking*: The physical device that electronically joins two pieces of hardware and exchanges information.

Control key *communications*: A modifier key used in conjunction with a letter key to trigger a command on many online services and BBS's. Some terminal emulators let you substitute the command or option key on old Mac keyboards lacking one.

Control Panel *system software*: Utilities that control various aspects of the Macintosh. They range from simple controls, like the volume of the Mac speaker, to complex ones, like an entire macro program. You access these devices through the Control Panel (System 6) or Control Panels (System 7) on the Apple menu. Originally called cdev's (for their file type), Control Panels are similar to INITS (System 6) or Extensions (System 7) in that you just stick them into the System Folder (System 6) or Control Panels Folder (System 7) and restart the computer to use them.

coprocessor *hardware*: A separate microprocessor, sometimes on its own board, that works alongside your regular processor to do a particular task. There are numeric coprocessors such as the 6881 and 6882 which speed up calculations (especially when rendering three-dimensional images), video coprocessors which take over the screen display duties, and cards which let you run DOS programs inside Macs.

Copy *interface*: 1. To place what has been selected into the Clipboard. The selection can be text, pictures or almost anything. 2. To duplicate a file, esp. between volumes.

copy protection *storage*: Security added to software so users cannot simply or easily make copies. Designed to prevent illegal distribution of software, it also inhibits easy use of hard drives and thwarts backups.

CP/M *system software*: (Command Program for Microcomputers) An older operating system, commonly used on microcomputers in the 1970's. An ancestor of DOS. Written by Gary Kildall of Digital Research.

cps *communications*: (characters per second) An information transfer rate estimated from the bit rate and length of each character. If each character is 8 bits and includes a start and stop bit for asynchronous transmission each character needs 10 bits to be sent. At 2400 baud data is transferred at approximately 240 cps.

CPU *hardware*: (Central Processing Unit) The chip that does all the work. Also commonly refers to the computer component, such as the circuit board or box, in which it is housed: We have 23 monitors but just 22 CPU's here in the lab.

CRC *communications*: (Cyclical Redundancy Check) An error-checking technique consisting of a cyclic algorithm performed on each block of data at the sending and receiving end of the transmission. As each block is received, the calculated CRC value is checked against the CRC value sent along with the block. Many protocols will request a resend until the block is received correctly. Many terminal programs let you choose either CRC or checksum methods of error detection in file transfers.

creator *system software*: A four-letter code hidden in a document's file that indicates which application made it. You can read it with ResEdit. Also known as the signature. Common ones include WDBN for Microsoft Word; WILD for HyperCard; and SIT! for StuffIt.

cross-platform *system software*: Software written to be able to run on multiple platforms, for instance Macs and IBM-type computers, without changes.

CTB *system software*: (Communications ToolBox) A system extension that uses modules so programmers can easily add communications to their applications and so users can add file-transfer, connection and terminal-emulation protocols without upgrades. Built into System 7 and higher.

cursor *interface*: A part of the screen that moves when you move the mouse. The shape of the cursor varies depending on what application you are using or what the computer is doing. A wristwatch cursor or spinning beach ball means you must wait while the computer does its thing. In programs that allow text-editing, the flashing bar that indicates you place in the text is not called the cursor, it is the "insertion point" or "I-Beam cursor".

Cut *interface*: To remove a selection from it current location and place it into the Clipboard. The selection can be text, pictures or almost anything.

DA *system software*: (Desk Accessory) One of those nifty little programs that appears as a choice under the Apple menu (System 7 allows anything under the Apple menu).

daisy-chain *networking*: To connect together several devices in a line with a single cable path that runs through each device.

DAL *system software*: (Data Access Language) Extension used by applications to communicate with remote databases, simplifying the task of getting data from hosts.

DAT drive *storage*: (Digital Audio Tape) A cassette tape recording system originally developed for music that has been adapted for backup on computer systems. Somewhat faster than conventional tape drive units, but too slow to substitute for a hard drive.

data fork *system software*: The part of a document where user-generated data is stored (as opposed to the resource fork, where the application's own information is stored).

database *applications*: A document designed to store lots of information in predefined categories, and which allows this information to be arranged and manipulated easily. The term "database" can refer to the application which creates and manipulates these documents or to the document itself. A database contains records, and each record is made up of fields.

daughterboard *hardware*: A circuit board that attaches to the motherboard (aka logic board) and gets its power from same. Less sexist term: subassembly.

DB-25 *communications*: A large 25-pin connector for serial ports used by some printers and many other brands of computers.

DB-9 *communications*: Trapezoidal connector for printer and modem ports on ancient Macs pre-1986. Technically a DE-9.

debug *programming*: The process of fixing errors in programming, removing the bugs. Developers spend a large amount of time and resources testing their products (some more than others!). Special programs called debuggers are employed to track down gross errors, and people called beta-testers put the software through its paces.

decimal tab *interface*: A tab character used to make columns of numbers (like dollars-and-cents values) line up vertically on their decimal points at the tab's location.

default *interface*: The parameters your program uses in the absence of instructions to do otherwise. For example, when you open a new document in your word processor, the typeface is usually Geneva 12 and the tab stops are whatever the program's designers decided. You may reset some or all of the defaults in good applications by choosing "Preferences" from one of the menus.

delete key *interface*: The key located in the upper right hand corner of the keyboard that erases what's selected. Older Mac keyboards (the Plus and earlier) have a Backspace key instead. Some terminal programs and services treat them differently.

delimiter *interface*: A character used to separate items of information. Tabs, commas, and returns are the most popular delimiters, but some applications allow you to specify whatever you want. Delimiters are most important when importing and exporting data from one application to another. For example, if you save an Excel spreadsheet as a text-only file and import it into a word processor, the data from each cell will have a tab character after it, and each row's data will be followed by a carriage return. Tab-and-return delimiters are also commonly used in database import/export. One thing to remember: a delimiter character should not appear elsewhere in the data.

DES *communications*: (Data Encryption Standard) A way of intentionally scrambling your data so that it can not be understood by snoops but can be unscrambled by anyone with the right password. DES was developed by the Federal government, and is in common use in the U.S. but cannot yet be legally exported to foreign countries.

desktop *interface*: 1. The area of your screen behind all your windows. 2. The adjective added to certain types of computing work (desktop publishing, etc.) which can be accomplished by a personal computer.

Desktop file *system software*: A file on every Mac disk which contains a catalog of the different items on (or once on) that disk and other important information for the Finder. Rebuilding this file (by holding down the Command and Option keys while starting up) purges it of all information not currently needed, liberating space on the disk, and may speed up operations minutely. It also erases all comments you've added to the Get Info... text boxes.

Desktop Manager *system software*: A technique used by AppleShare and System 7 and above that divides the Desktop file's information into two files, resulting in much faster access to that information.

dialog box *interface* : A message box that appears on your screen when the Mac needs you to give it further instructions or information. Dialog boxes usually have one or more buttons that allow you to respond to the message displayed.

DIF *applications*: (Data Interchange Format) An older file format (developed for use with VisiCalc) used to exchange spreadsheet-type data between applications. Its modern equivalent is SYLK.

digital *industry*: Information represented as discrete numeric values, such as 0 and 1. The opposite of analog. In digitization, which is what a scanner does, the flow of information is sampled at regular intervals and converted into numeric values.

dimmed *interface*: When a button, menu item, or icon is unavailable, it appears gray rather than black. On the desktop, a dimmed icon represents a disk, document, folder or application on a disk that has been ejected but not dismounted (by moving its icon into the trash can). You can select and open dimmed disk and folder icons, but you can't open the documents and applications in them.

DIN-8 *communications*: The small, round connector for printer and modem cables which fits into the small, round printer and modem ports on Macs made since the Plus. DIN stands for "Deutsche Industrie Norm".

dingbat *output*: A traditional printer's term for ornamental characters like stars, bullets, little boxes, hearts, diamonds, tiny flowers and snowflakes. The Zapf Dingbats font (designed by famous German typographer Hermann Zapf) is built into most PostScript LaserWriters.

DIP *hardware*: (Dual Inline Package) A kind of chip that has two rows of connectors. DIP SIMMs are RAM SIMMs using DIP chips, which are taller than normal SIMMs and may not fit under larger hard drives.

directory *interface*: 1. The list of the contents of a folder or disk, ordered by name or icon or date, etc. 2. The first few sectors on every disk, containing information about what files are on the disk and the size, location, and type of these files. The list of where the parts of all files are located on a disk is called a file allocation table. When a disk is damaged the problem is often due to a garbled directory.

directory dialog box *interface*: The dialog box the Mac puts up when you want to Open or Save an application or document. You use it to navigate to the correct folder, then select the desired file.

disc *storage*: The correct spelling of "disk" when referring to compact discs.

disk *storage*: A round piece of plastic with magnetic stuff in it where you store information you want to keep around after you turn the computer off. Comes in hard and floppy varieties.

Disk Tools *system software*: This disk comes with your system disks and has several items that can be somewhat useful when you encounter disk trouble.

dismount *storage*: Causing the computer to give up all claim to a volume (a floppy, hard drive, cartridge, etc.) and remove it from the desktop. You dismount a volume by dragging its icon to the trash can or choosing Put Away from the File menu. A cartridge drive must be dismounted before its cartridge can be removed.

Display PostScript *output*: Extensions to normal PostScript that adapt it to drawing graphics on a computer screen.

dithering *display*: Mixing colors you do have to provide the illusion of more colors than are available by sacrificing resolution. A process commonly used in printing to reduce the number of colors needed for a particular print job. Also used with black and white images to give the illusion of gray when seen from a distance.

document *system software*: A file on the computer containing information to be acted upon (as contrasted with an application which does the acting).

Dogcow *interface*: The mythical mascot of Apple's Developer Technical Services, whose name is Clarus. He says Moof! When flipped horizontally he says !fooM. Go to Page Setup under the File menu to see Clarus (you may have to click on the Option button). If you still have an Imagewriter, you won't see the dogcow.

DOI *interface*: (Document-oriented interface) An approach to computing that eliminates large applications that do everything their own way, and replaces them with small universal tools (such as text editing or numeric tabulating) that each do a particular operation on any document from any computer. Used in the Newton and OpenDoc.

DOS *system software*: (Disk Operating System) The software instructions that tell a computer how to act like an IBM PC; the System and Finder for those machines. The most common flavor is MS-DOS (made by Microsoft) although there are others.

dot matrix printer *output*: A printer that uses dots to create the text and image on the page. This term is most commonly used to refer to impact dot matrix printers which use small metal pins striking the ribbon and paper to create text and images.

double-click *interface*: To click the mouse twice quickly in succession without moving it. This usually tells the Mac to open or launch whatever was double-clicked. It also enacts the default option in dialog boxes.

download *communications*: Transferring a file from a remote computer to your computer, using a terminal program and a transfer protocol.

downloadable font *output*: Descriptions of fonts that are not built into a printer but are kept on a hard disk (connected to either the printer or the Mac) and sent to the printer as needed. This process takes time and makes printing slower. Virtually all downloadable fonts in the Mac world are written in the PostScript language.

dpi *output*: (dots per inch) A measure of resolution on a printer or scanner. The more dots per inch the device is capable of producing or reading, the more detailed and smooth the resulting output. The StyleWriter prints at 360 dpi; the LaserWriter family of printers print at 300 dpi, the ImageWriter IIs print at about 150 dpi; the standard Mac screen is 72 dpi, and typeset-quality print is around 1000 dpi.

drag *interface*: With the cursor over an object, press and hold the mouse button pressed. Then move the mouse and watch as the object moves with the cursor.

drag-and-drop *interface*: Mac users have been dragging and dropping files and folders into the trash can for years. System 7 enlarged upon the idea. For example, you may drag and drop a document's icon onto the icon (or alias) of an application, and if the application is able to, it will launch and open the document. More recently, some applications have implemented drag-and-drop as a shortcut for cutting and pasting.

DRAM *interface*: (Dynamic Random Access Memory) The most common kind of RAM, the one people mean when they just say "RAM," except some PowerBooks and the Mac Portable that use Static or pseudo-Static RAM.

drive *storage*: A device that moves a storage medium and reads it or writes to it. Drives either spin disks or transport tapes. There are floppy drives into which you insert a floppy disk; there are hard drives that are sealed inside the computer or the external box they come in. There are also removable media drives, including those that have a large slot into which you insert a hard disk cartridge, tape drives, DAT drives, CD-ROM drives and optical drives.

driver *system software*: A piece of software which controls communication between your Mac and some peripheral device. Drivers usually need to be in the same folder as the System in order to be used; under System 7 they live in the Extensions Folder inside the System Folder. The most common drivers are those needed for printing. Scanners, CD-ROM drives and removable media drives also require drivers.

DVORAK *interface*: An alternative arrangement of the keys on a keyboard. DVORAK (named after the guy who invented it) is nonstandard, but allows more rapid typing than the standard QWERTY layout, some say.

email *networking*: (electronic mail) Text messages sent from computer to computer over a network or over phone lines.

Easy Open *system software*: Short for Macintosh Easy Open, system software that helps applications convert documents and indicate what types of documents they can open.

echo *communications*: Local echo is when the computer you're using displays what you're typing. Conversely, remote echo is the action of having the receiving computer send what it has received back before showing it on screen. A simple, but useful way to confirm that communication is happening correctly.

Echomail *communications*: Public message conferences on a BBS which are shared and distributed among other BBS's as part of an Fidonet network.

edition *system software*: A special file whose data can be shared by other documents (called subscribers) under System 7's Publish and Subscribe function.

eject *interface*: Causing the computer to push a floppy disk out of the disk slot. This action may or may not dismount the disk, which is what happens when the computer forgets all about it. You'll know if a disk is dismounted because its icon disappears from the desktop; otherwise it is only dimmed. Choosing Eject Disk from the Special Menu ejects a floppy but doesn't dismount it; do this when copying from one floppy to another. Dragging the icon to the trash can is the preferred way to dismount and eject a disk. If the disk won't pop out, press command-shift-1. If all else fails, straighten out a paper clip and poke it into the little hole beside the slot.

ELF *display*: (Extremely Low Frequency) A type of radiation given off by almost any electric device, but potentially dangerous amounts come from power lines, heavy machinery and some video monitors. The best prevention is to sit at arm's length from your monitor and stay away from the back or sides of one—that's where the radiation is highest. Shop for low-ELF displays.

em dash *output*: A dash (—) as wide as the character "m" in a given font. You get this special dash by holding down the Shift and Option keys while typing a hyphen.

em space *output*: A space as wide as the letter "m" in a given font, achieved by holding down the Option key while hitting the Space bar.

emulation mode *system software*: Software running on hardware for which it is not primarily written, such as DOS software running on Macs or 680x0 software running on a Power Mac. Not all features may work properly, and speed is degraded.

en dash *output*: A dash (–) as wide as the character "n" in a given font. You get this special dash by holding down the Option key while typing a hyphen.

enter key *interface*: Performs functions similar to the Return key.

EPS *output*: (Encapsulated PostScript File) A graphic file format composed of two parts: a simple bitmapped image (a 72-dpi PICT file) that the computer reads and displays on the screen and a complex PostScript code that a PostScript printer reads. EPS files are called "device-independent" or "resolution independent". This means they will print at whatever resolution the printer happens to be. The same graphic will print at 75 dpi on the ImageWriter II, at 300 dpi on the LaserWriter, at 1240 or 2400 on a Linotronic.

error control *communications*: Modem-based techniques which check the reliability of characters or blocks of data at hardware level.

Ethernet *networking*: A set of rules (protocol) for exchanging information which can accommodate high speeds (10 megabits per second, about five times as fast as LocalTalk).

EtherTalk *networking*: Apple's implementation of Ethernet.

event *programming*: Some action made by a user or by software that the software wants to know about. Like a bored dilettante, Mac software sits around waiting for events to happen. When you click on something, or hit a key, that sends an event to the Mac and it's off and running.

eWorld *communications*: Apple's very own online information service, debuted in June,1994. It replaces AppleLink, which was used to communicate with software developers, BBS's , and vendors. Apple is using a revamped version of America Online's software and bundles the eWorld software with new Macs.

Extension *system software*: A file that modifies the behavior of the Mac Operating System. Extensions are sometimes small programs that can make your Mac do strange and wonderful things. They also take up RAM. They live in the Extensions folder inside your System Folder and load right after the OS when you start your Mac—you see a parade of icons at the bottom of the screen. Occasionally Extensions can cause misbehavior. You can troubleshoot by moving them out of the Exten-

sions folder one by one and restarting, until the problem goes away. Even better, install only one at a time and give it a few days to reveal any antidigital tendencies. This System 7 term replaces the terms INIT and StartUp document from System 6.

FatBits *interface*: An eight-power blowup of a screen bitmap. The term was coined by Bill Atkinson, to describe the magnification feature in the original 1984 MacPaint, which was activated by holding down the Command key while choosing the pencil tool. Almost all bitmapped graphics programs written since then include the same shortcut—it's a Mac tradition.

fax *communications*: (short for facsimile) Hardware that sends a digital image of a document over communication lines to a similar device. Originally a fax scanned a printed document and a paper copy was recreated at the other end. With fax modems documents may remain in digital form.

fax modem *communications*: A modem capable of exchanging images with a fax machine. Typically, such modems are at least Group III-compatible and come with software that makes sending faxes as easy as printing.

fiber optics *networking*: Transmitting information encoded upon light beams that pass through thin strands of glass or plastic. Because light has a very high frequency it has an enormous bandwidth upon which to impress signals, hence it can carry much more than copper wires with much higher efficiency and speed. Light has the added advantage of being immune to magnetic interference. Right now your cable-TV may be carried to your home (or at least your street) on fiber optic cabling.

field *interface*: A discreet piece of information in a database, such as the Zip Code in an address book. A database contains records, and each record is made up of fields. In a program such as FileMaker, you can format the display of each field's information and specify the type of data, for example to make sure there are the right number of digits and no letters in a phone number. Very similar to a cell in a spreadsheet.

file *system software*: A self-contained single set of digital information on disk or in memory. A file is either an application or a document, anything from a brief letter to a QuickTime movie to a gargantuan application like Excel.

file editor *utility*: A software utility that allows you to open and change the resource and data forks of a document or application. Not for the faint of heart.

file format *system software*: The particular structure that a document (spreadsheet, graphics, text, etc.) is saved in. Text is a standard file format for words and numbers, and many applications can read text documents. Text file formats include ASCII (text only) and RTF (Rich Text Format), in addition to the particular format for your word processor. MacPaint and TIFF are standard file formats for bitmapped graphics, and EPS is a nearly standard file format for object-oriented graphics. Different applications use different formats and many can read and translate each others'. A document's file type is a four-letter code indicating its file format.

file server *networking*: A computer that saves and retrieves files on a network. Often, one Mac and its hard drive are dedicated to the job of being a file server.. File server software controls who gets to read and use what, and how many people get to do it at the same time. Examples: AppleShare, System 7's file sharing.

file sharing *networking*: Using files on another Mac via a network. It can be as simple as two Macs sharing a printer, or as complex a network as you can create.

filename *system software*: The name of an application or document. It can be up to 31 characters long, but can't contain any colons (:) because those are reserved for pathnames.

filter *system software*: A small piece of code (module) used by an application to convert a document created by another application into a file format that it can read or modify the content of an image. Common use: Photoshop filters.

Finder *system software*: Always-running application that organizes the contents of and keeps track of changes to all files on a disk. It creates the desktop; in fact the desktop and Finder are almost synonymous. You use the Finder to find files, to copy and delete them and move them around, and to launch applications.

firmware *hardware*: Software that lives in chips, such as your Mac's ROM, and can't be changed. As the Mac has evolved, System files are instructed to ignore some portions of the firmware and substitute replacement code. The next generation of ROM chips contain the new code. Thus a great deal of compatibility is maintained.

Fkey *system software*: A miniature program, similar to a desk accessory, which is run by holding down the Command and Shift keys and hitting a number. An Fkey can be installed semi-permanently as a resource in your System or added temporarily with utility programs. Your Mac comes with one, Command-Shift-3, which takes a picture of the screen and saves it to disk.

flame *communications*: An online expression of opinion that is strongly worded and often quite unpleasant. Real-time chats have relatively few flames, but discussion groups (where people post messages to be read later) can degenerate into vicious "flame wars" which can go on for some time. A thoughtful article by John Seabrook about being flamed appeared in the June 13, 1994 New Yorker magazine.

flat-file database *application*: A simple database that is essentially one table that can't be linked to another. Example: FileMaker.

floating point *programming*: Mathematics in which an essentially unlimited number of digits after the decimal may be used. Mathematically speaking these are "real" numbers (as opposed to integers); you will want to have a coprocessor if you need to do a lot of floating point calculations for applications such as 3-D modeling.

floppy disk *storage*: A round piece of plastic with magnetic stuff in it where you store information you want to keep around after you turn the computer off. Standard Mac floppy disks have a hard plastic cover with a sliding metal door (for use by the computer—not you), these are also called 3.5" floppies to distinguish them from 5.25" floppies used by the old Apple II series and IBM-type computers. Regular Mac floppies can hold 800 kilobytes (the original standard was 400 kilobytes). The FDHD, or SuperDrive, floppy drive in Macs made since the later SE's can handle the older Mac disks and newer ones that hold 1.44 megabytes and can even read 3.5" DOS disks.

floppy drive *storage*: The mechanism that reads and writes floppy disks.

flow control *communications*: A mechanism that compensates for differences in the flow of data to and output from a modem or computer. Generally two choices are available: software flow control (sends control-key signals to tell the other system to start and stop) and hardware flow control (uses special signal wires).

folder *interface*: A place to hold documents, applications, aliases and other folders on a Mac disk. Folders have icons on the desktop and hold virtually unlimited number of files. You move items into a folder by dragging the item's icon onto the folder. The easiest way to open a folder is by double-clicking on its icon. To put a file back into its folder, select it and choose Put Away from the File menu.

font *output*: A digitized set of characters in a single typeface design. A digital font can be any size unlike old-fashioned typography where each size is considered a font. Plain (or Roman), Bold, Italic, and Bold/Italic are the traditional styles within a font family. Fonts are either bitmapped fonts or scalable. Scalable fonts come in two varieties, PostScript and TrueType.

font id *output*: Each font has a name and an id number to identify it to the computer. Unfortunately, given the thousands of available fonts, a time will come when you have two fonts with the same id and/or name on your system and your printouts won't look at all right. Worse, some programs renumber fonts when they encounter conflicts, which can really mess things up when you take your documents to another computer to print them. Modern programs refer to fonts by name only, which helps clarify things, and programs like Suitcase can help resolve conflicts.

format *storage*: (verb) The process of erasing everything on the disk and checking the medium for physical errors. This must be done to new disks before they can be used by the computer. Sometimes called a "low-level" format.

fragmentation *storage*: The scattering of information on a disk into lots of little pieces. This can become a problem on a hard drives. A seriously fragmented disk appears slower because the computer has to search many places for information. Eventually a disk can become so fragmented it will lose data. Utilities can be used to defragment a disk and, although this may take some time with a hard drive, it is a good idea if you use your Mac a lot. A similar condition can occur in the computer's RAM (weird things will begin to happen), in which case it is best to quit the applications and restart them.

Freeware *industry*: Software that some nice person creates for themselves and then puts out

into the world at no cost to others. Often available on BBS's, through user groups and from friends.

front end *communications*: Software (and rarely hardware) that communicates with other software and sometimes hardware. The purpose of a front end is to either limit access to the actual system being used or to improve the interface. A common example is a client/server setup on a BBS or the Internet; we know a guy who uses a PowerBook as a front end to a Cray!

FTP *communications*: (File Transfer Protocol) The Internet's protocol for moving files from one computer to another. Also the name of the application which moves files using file transfer protocol.

full-duplex *communications*: Simultaneous, two-way exchange of information on a network or phone line. It is sometimes used to refer to the suppression of online local echo and allowing the remote system to provide remote echo.

full-height *storage*: A hard drive mechanism that is over three inches tall is full-height. Disk drives with the largest capacities usually come in full-height sizes only. Full-height drives do not fit inside Mac SE family or Mac IIcx family computers, and they fit in Mac II family computers only if the hard drive mounting bracket is replaced with a bigger one. Even still full-height drives may not fit on top of DIP SIMMs in a Mac II.

function key *interface*: A key at the top of an Apple Extended or Adjustable keyboard that carries out some operation when pressed. Most function keys are application-specific. Big in the blue world, but discouraged in Mac software where the graphical interface is supposed to make them unnecessary. See FKEY.

gateway *networking*: A connection between computer networks that translates the information from one network's format to the other's. A gateway allows messages from one information service or BBS to be carried by another.

genlock *display*: The ability to synchronize two video signals—for example, a video image with a computer-generated title—on the same screen.

GeoPort *communications*: Serial port capable of high-speed communications, with the assistance of a communications module. Found on the AV and Power Macs.

Get Info *system software*: A function of the Finder (in the File menu) that displays useful information about any file on the Mac, such as its size and creation date.

GIF *communications*: A Compuserve graphic format with 1 to 8 bits per pixel. It is compressed and works on different computers, but few applications can read it.

gigabyte *storage*: A unit of measure, technically 1024 megabytes, which is roughly one billion bytes - 1,073,741,824 to be precise. Impress your friends with this useful knowledge.

glossary *self-reference*: 1. A list of terms used in a particular discipline and their meanings. The better ones are cross-referenced. 2. A very useful feature of word-processors where you list frequently typed words or phrases and key strokes that will cause the computer to substitute the glossary entry as you type.

Gopher *communications*: A menu-based system for exploring Internet resources.

grabber *interface*: The little hand icon with which you can move your document around in its window. First seen in the original MacPaint, the grabber has become a standard tool in most Mac graphics programs.

graphical user interface *interface*: The interface we all know and love, developed at Xerox PARC and more recently copied by Windows. This type of interface uses pictorial representations of real-world things on the screen and gives you a mouse or other pointing device to interact with them. Nickname: "gooey" (GUI).

graphics tablet *interface*: A flat panel used with a special pen (called a stylus) to move the cursor around the Mac screen, especially in graphics programs. More advanced models are sensitive to the amount of pressure you're applying and alter the line weight accordingly.

grayscale *display*: Some Mac screens are really grayscale rather than plain old' black and white. On a black and white screen or on printed material, gray tones are simulated by black dots that give the illusion of gray when an image is seen from a slight distance. On a grayscale monitor, however, the same image will display in actual shades of gray. The number of bits per pixel determines the number of values of gray that can be differentiated; for example, 8 bits permits 256 shades of gray. A TIFF file can be saved as a grayscale document, albeit a much bigger file.

greek *output*: Nonsense text used to simulate the finished appearance of a document without distracting you with its content. This term also means the gray lines that stand in for text when a document has been reduced on the monitor.

Group III *communications*: The standard for facsimile transmissions (fax machines). Group III-compatible fax machines or fax modems send data at 9600 baud, at a resolution of 200 dots per inch, and can send some gray-scale information at their option. Group III is the overwhelming fax standard in the US, but less so in Europe.

half-bridge *networking*: A combination of hardware and software connecting a network to telephone lines to send data beyond the physical limits of the network.

half-duplex *communications*: In telecommunications, signal flow in both directions, but only one way at a time. This term sometimes refers to the activation of local echo which causes a copy of sent data to be shown on the sender's display.

half-height *storage*: A hard drive that is about one and a half inches tall. This size drive fits inside all Macs.

halftone *output*: An image that is composed of solid black dots of various sizes at equal spacing, which creates an illusion of various shades of gray. This is how continuous-tone images, such as photographs, have traditionally been reproduced by printing presses, which are not capable of generating true grays.

handshake *communications*: The exchange of information between to devices (usually modems or printers) to determine whether conditions are right for further communication. A printer may send a handshake to tell the computer to pause while it digests the information is has just received.

hard copy *output*: The printed version of what you have in the computer.

hard drive *storage*: The machinery that permanently encloses a disk together with the disk itself. The disk is a round piece of hard plastic coated with a magnetically sensitive surface. Most hard drives have more than one disk inside, stacked on a single shaft, with a read/write head for each surface. The machinery spins the disk and reads its contents very quickly. Hard drives come in 2.5", 3.5" and 5.25" diameters, and can hold from 20 megabytes up to gigabytes.

hard return *output*: A carriage return that will always end the current line regardless of where it is on the page. In a word processor, a hard return starts a new paragraph.

hard space *output*: A space that looks like a space to you but not to the computer. The sentence will not be broken by word wrapping at a hard space. Type Option-Space.

hardware *hardware*: The parts of the computer or any peripherals that you can bang on. The monitor, keyboard, modem, scanner... all the things you can touch are hardware. As opposed to software.

Hayes command set *communications*: A set of instructions for controlling modems developed by Hayes Microcomputer Products and informally standardized in its 1200 baud modem. Virtually all telecommunications software and hardware support this set of commands to some degree. Also called the "AT commands set" because each command is preceded by the letters "AT."

head crash *storage*: What happens when the read/write head of a hard drive contacts the disk surface, or even when a piece of dirt gets in between them. Very bad. You can't replace your divots on a hard disk.

heap *programming*: The free memory that is allocated to the different applications you are running at any one time. The heap is governed by the Memory Manager, a vital part of the Macintosh Toolbox. Sometimes when the computer seems to pause, the Memory Manager is moving blocks of data around to compact the heap and open up large contiguous empty blocks.

hexadecimal system *programming*: A number system consisting of sixteen integers from 0 to 9 and A through F. This system, aka base-16, dovetails beautifully with the binary system since a pair of hexadecimal numbers can represent discreet values from 0 to 255 in base-10, the same as two bytes can. Hence 01 hex equals 00000001 binary and 1 in base 10, while 61 hex equals 01100001 in base-2 and 97 in base 10, and is used to represent the letter a. Hex is much easier for us humans to read than a mosaic of zeroes and ones. You may have seen these strange little numbers if your ImageWriter ever hiccupped and printed codes.

HFS *system software*: (Hierarchical File System) The way the Macs (starting with the 512E) keep track of the contents of folders.

hierarchical menu *interface*: A sub-menu that pops up when you select a specific menu item. Hierarchical menus are used to provide many choices within a category without bringing

up a dialog box. Menu items that lead to sub-menus are designated by a black triangle, on either side of the menu, pointing sideways.

high-level language *programming*: Programming languages that are closer to natural speech such as HyperTalk and BASIC. They are easier to program but often result in bulky, slower programs.

highlight *interface* : To make something visually distinct from its background by changing or inverting its colors. Objects that are selected or chosen are highlighted.

hint *output*: Techniques developed along with outline fonts that let any printer accurately render serifs, stems and any other character components at any type size or orientation.

hot spot *interface*: The one pixel in the cursor that actually shows the mouse's location on screen, and the part of the cursor that must be aimed accurately. On the arrow cursor, the hot spot is the tip of the arrow.

HyperCard *system software*: An application for creating databases, utilities, presentations, and other kinds of applications. If you have a Mac, you probably have it (or at least its sibling, the HyperCard Player) so stop reading this glossary entry and go play with it for a while. Documents created with HyperCard are called "stacks" (of cards, get it?).

hypermedia *industry*: Simply the extension of the hypertext idea to cover non-textual information, like pictures and sound (not much of a intellectual leap).

hypertext *industry*: A concept articulated by Ted Nelson in the 1960's, in which any piece of textual information on a computer can be connected to any other. Users can jump from one piece of information to other related pieces quickly and thereby learn things in a non-linear, semi-random sequence. Users should also be able to create these links between pieces of information. Parts of the hypertext ideal are present in some Mac applications, notably HyperCard.

I-beam *interface*: The cursor shape that looks like the edge-view of an I-beam. When you want to enter text, position the I-beam cursor and click. The insertion point (a flashing vertical bar) appears where you clicked, and you're ready to go.

IAC *programming*: (InterApplication Communications) The process of exchanging information and instructions between applications. A whole suite of IAC capabilities is a part of System 7, including Publish and Subscribe (automatic updating of information shared between different kinds of documents) and Apple events, which is the sending of commands from one application to another.

icon *interface*: A small picture representing something. On the Macintosh, icons represent documents, applications, devices and sometimes processes. For example, a disk icon represents a physical disk but the Trash Can represents the action of throwing something away.

IGES *applications*: An older file format for CAD documents, standardized on mainframes and minicomputers. Most CAD programs can read IGES files, although DXF is more often used in the Mac world.

image backup *storage*: Full or global backup where everything is copied.

image processor *output*: An application that takes images—often scanned or captured photographs or video—and edits them. You can edit your sister's ex-boyfriend out of a family snapshot, or add yourself to Rick's Bar in Casablanca. As this technology becomes undetectable, photographs are becoming inadmissible evidence in court and advertisements are more enticing than ever. It lends a new twist to Groucho's joke, "Who are you gonna believe, me or your own eyes?"

Imagesetter *output*: A very high resolution laser-based printer that prints on photographic paper and is so costly you go to a service bureau to use one. These machines can create output at up to 3,600 dpi!

ImageWriter *output*: Apple's original Mac printer. ImageWriters, now out of production, were impact dot matrix printers and came in three varieties: the original ImageWriter, slow and problematic; it was replaced by the bestselling ImageWriter II which was a real beauty in its day, capable of 144 dpi resolution; and the Edsel-like ImageWriter LQ wide-carriage printer.

import *applications*: Bringing a file created by one application into a document created by another. To successfully import something you need to know if the application doing the import is capable of handling the file format of the incoming document. Many programs use special filters to convert formats, and there are file conversion programs such as DeBabelizer. You can almost always import a plain-text file, and tab-and-return delimited databases go to and fro quite easily. It gets more complicated with graphics.

incremental backup *storage*: A type of backup where only those things which have been added or changed since the last backup are copied.

indent *output*: White space between the margins on a page and a body of text. Normally used only as a first-line indent, either inside the margins like you learned in typing class or outside as a hanging indent. Most indentation is accomplished with margin settings since word processors givereach paragraph its own ruler. Not really a character (no ASCII value), but it's almost one.

INIT *system software*: Small chunks of code that load right after the Operating System and add features to it. INIT is the pre-System 7 name for Extension.

initialize *storage*: The process of erasing a disk's directory so that new data can be written over the old. Since initialization doesn't remove the data, it can be recovered with a disk utility if the disk is initialized by mistake.

inkjet printer *output*: A type of printer whose print head squirts droplets of ink through tiny nozzles onto plain paper. This amazing technology made the ImageWriter nearly obsolete, and made very low cost 300 dpi printing available to most users. One problem: the ink can smear, even after it's dry (if it gets wet).

input device *input*: Any device through which you get information into or control the computer. This term includes keyboards, mice, data sensors, etc., but usually excludes things like disks and modems.

insertion point *interface*: The place where what you type will next appear on screen, identified by a flashing vertical bar. You can move the insertion point by clicking somewhere else in the text; you can get rid of it by clicking outside the text area.

Inside Macintosh *programming*: A series of technical manuals by Apple (published by Addison-Wesley) that describe in great detail the inner workings of the Mac Toolbox (the immense collection of code routines that most programs call upon to do things), the operating system and other basic elements of Mac hardware and software. Its examples are written in the Pascal language, since that's what the Toolbox is written in. The complete series runs in a number of books (recently revised) totaling over 2,000 pages and costing hundreds of dollars. It's hard to read, but it can be done!

installer *system software*: Software that automates the process of putting an application or even a new operating system onto your hard drive. It's still OK to drag simple programs onto your desktop like always, but with huge, complicated applications the files may be split between floppies or the installer may know where some special files or resources need to go.

interface *interface*: Broadly, the way any two things communicate with each other. In this glossary interface is short for "user interface", which is the way a computer appears to the user, and the rules by which they communicate. The Mac (and Windows on a DOS machine) has a graphical user interface, nicknamed "gooey" (GUI) because it makes use of pictures and images to convey meaning. Most other computers use a command-line user interface, called "clooey" (CLUI) which uses specific typed commands to convey instructions.

interlace *display*: A kludgy trick to work around the limitations of the NTSC video system, which is the standard in the United States. NTSC consists of 30 frames per second at 525 lines per screen resolution. That is low resolution compared to Europe or Japan which use up to 1,000 lines of resolution in the video signal. In order to "fill out" the image and minimize flicker, one-half of the image is drawn every 1/60 second, first the 262.5 odd numbered lines, then the evens. Couch potatoes are digging in until HDTV comes along. Computer displays are non-interlaced—a major reason why they cost more—and the Mac display runs at 66 frames per second.

interleave *storage*: A way of optimizing the efficiency of a hard drive by spreading out chunks of data so that as it spins (very fast, you know) the computer can absorb (or dispense) the information in a continuous stream. Remember that disks are divided into tracks, and each track is divided into sectors. With a slower machine like the Mac Plus, the data is interleaved at a 3:1 ratio, that is, written to every third sector on the disk. If it were written to contiguous sectors, the hard disk would have to go around an extra complete revolution after each sector was accessed because the machine wouldn't be ready for the next sector. There is just enough time

if the drive lets two sectors go by, so the 3:1 interleave is set by the driver software. Older SE's need a 2:1 interleave. Newer Macs are fast enough to use a 1:1 interleave, which is really no interleave at all!

Internet *communications*: "The Internet" - The international telecommunications network formed by thousands of networks connecting a half-million academic, industrial, and government computers that exchange messages constantly. The Internet uses the UNIX operating system which is powerful but very user-unfriendly. Software is becoming more available to make it less painful to Mac users. You can get onto the Internet via an institution you work for or belong to, or you can sign on to a service like UseNet, or you can gain access through an online service like Delphi or America Online.

internetwork *networking*: Aka internet; A group of networks joined together with bridges, routers, gateways, etc. that are capable of communication with each other.

interpreter *programming*: A program like HyperCard or BASIC that takes a program written in a high-level language and translates it "on the fly" to machine code that the processor can carry out. Interpreters are very convenient to work with since you can interrupt the process at any point to make changes or debug. However, since the translation takes substantial time, your program runs much more slowly under an interpreter.

interrupt switch *programming*: The button on the programmers switch without the triangle. When you press it, it interrupts whatever is going on and puts you into a mini-debugger window, where if you know what you're doing you can look directly at the contents of memory and do other programmer things.

invisible file *system software*: A document or application which is on a disk but whose icon is not shown. It is not counted as an item, and cannot be selected in any standard way. Such files can still be accessed by applications and will be seen by utilities. The desktop file is invisible. Any file can be made invisible.

IPX *networking.* Novell NetWare protocol.

ISDN *communications*:(Integrated Service Digital Network) A worldwide standard for digital telecommunications. ISDN features two channels running at 64 kilobytes per second plus a third low-bandwidth channel..

ISO *industry*: (International Standards Organization) The really big organization that slowly works out standards for telecommunications for the whole world.

ISO/OSI *communications*: (International Standards Organization/Open Systems Interconnect) A set of rules, still under development by the ISO, to standardize communication between different types of computers. Universal conformity to these rules promises easy exchange of data between any two machines.

IWM *storage*: (Integrated Woz Machine) The chip that controls the disk drive in your Mac. You probably don't need to know this, but it's a fun name for a chip.

JPEG *output*: (Joint Photographic Experts Group) A graphic file format used for compressing large bitmapped graphic images. QuickTime uses JPEG to compress images to as little as 1/20 their original size. However, there is trade-off: JPEG is called "lossy" because when you decompress an image, you don't get back the exact original. Repeated cycles of compression and decompression can significantly degrade an image, and should be used with care.

Kermit *communications*: A telecommunications protocol developed at Columbia University and widely used on UNIX machines. It can be used on a wide variety of computers from mainframes to micros. Kermit's big claim to fame is that it works across eight-bit and seven-bit machines and it can transfer batches of files at a time. While not terribly efficient, it is sometimes a necessity for transfer involving different systems. Not recommended for PC to PC transfers.

kern *output*: To adjust the spacing between two characters. Typefaces are designed with specific space around each letter, but some combinations, such as WA look awkward unless brought closer together. Kerning can be done in any amount, but small amounts are best.

kerning table *output*: Special instructions for adjusting the spacing between specific pairs of letters in a typeface. This table, if it exists for a given font, is stored in that font's FOND resource.

Key Caps *system software*: A handy DA that shows the layout of the keyboard and how each letter looks in any one of the installed fonts. You can see the capitals by holding down the Shift or Shift/Lock keys and the other characters that are available when holding down the Option key and the Option-Shift combination.

keyboard *interface*: The input device that reminds your grandma of her old Smith-Corona typewriter. After the Mac Plus, all Macintosh keyboards have a numeric keypad. An enhanced, or extended keyboard has a row of function keys across the top in deference to fugitives from the blue planet. The time-honored key layout is called QWERTY, but some pioneering types use the more efficient DVORAK layout. Other developments include the curved Maltron keyboard, and a keyboard which separates into two parts so you can hold your hands more naturally. Advocates claim these last two help avoid the dreaded carpal tunnel syndrome.

kilobyte *storage*: 1024 bytes, exactly 2 to the 10th power. Kilo- is Latin for thousand.

kludge *programming*: 1. Awkward, makeshift and non-intuitive. Used to describe applications or methods of getting things done . 2. A work-around that effectively solves a problem, usually in an innovative way.

LAN *networking*: (Local Area Network) A bunch of computers connected via cables and software, allowing hard drives and other devices to be shared. LANs typically have 50 or fewer computers hooked together in the same building, but variations do exist.

laser printer *output*: A great leap forward in printing technology that allows us civilians to produce high-quality graphics that look like they were done by professional printers. The output of a laser printer is a page whose image is composed of extremely small, evenly spaced dots of ink at resolution of 300 dpi (600 dpi is now available). It may have come from the marriage of a dot-matrix printer and a photocopier, but really it's a thing unto itself. The laser beam electrically "etches" the image upon a statically charged drum which then picks up charged powdered ink. The ink is then handed off to the paper and made permanent by a hot roller. Amazing.

launch *interface*: To run, or start, an application.

layer *interface*: A system built in to object graphics programs in which each object behaves as if it were drawn on a piece of transparent film. Objects do not obliterate others that they overlay, and any object can be put in front of or in back of any other. Draw programs go a step further, providing layers with their own names and characteristics, each of which can hold individually-layered objects. You can then hide or show these super layers as you work on the drawing. Some advanced bitmapped graphics applications such as Photoshop have their own layering features.

LCD *display*: (Liquid Crystal Display) A screen whose circuitry can cause individual pixels to be transparent or opaque. The screen itself is transparent and requires some sort of backlight for adequate visibility. They're also impossible to repair, so if more than a few pixels are bad the factory has to dispose of the screen. The most common type of LCD display is called "passive matrix". This type is easier to manufacture, hence cheaper. It's also slower and harder to read due to lower contrast. The better type of LCD is called "active matrix" and has a transistor for each pixel. These displays have a higher contrast and wider viewing angle, but they're more expensive and harder to make.

leader *output*: A small character such as a period, hyphen or underline that leads your eyes from one column of information to another, such as in a table of contents. Many applications let you attach leaders to tab stops.

leading *output*: (Pronounced "ledding") The space between two lines of text, usually measured in points (72nds of an inch). The name comes from the strips of lead that printers used to put between lines of type. On the Mac, leading is usually measured from the top of one capital letter to the top of another on the next line.

LF *communications*: (Line Feed) An invisible character that instructs the printer to move down to the next line. On character-based computer displays, the line feed is used for the same purpose. On the Macintosh it is not used and often has to be removed from word-processing files transferred from other computers.

ligature *output*: A typographic nicety: one character that is actually two characters combined together. For instance, when you type the letter f next to the letter i, the hook of the f bumps into the dot of the i. The ligature for f and i is one character. Every PostScript font on the Mac includes the common ligatures such as those for fi and fl. Certain other fonts, like the Adobe Expert collections, contain many more ligatures.

line spacing *output*: The distance from the baseline of one line of text to the baseline of the next, measured in points (1/72nd of an inch). This term is a more computer-like replacement for the printer's term "leading".

Lisa *industry*: Macintosh's grandmother, also later called the Mac XL. A Mac precursor.

list box *interface*: A window or dialog box that contains a list of things (or even a series of icons or pictures) that you can select from.

localization *programming*: Adapting software to another country, culture, or language by rewriting the menu names and menu items, default settings, and anything else necessary to make the application understandable and appropriate.

LocalTalk *networking*: Actual name for the cables which Apple sells to connect Macs together, commonly called AppleTalk. It has been largely superseded by hardware that uses standard telephone connectors.

lock *storage*: To protect a file or disk (or other storage medium) from being changed, written to or erased. Protection can be achieved physically, by sliding the write-protect tab on a floppy disk to where you can see through the hole, or in software, by clicking the checkbox named "Locked" in the file's Get Info window.

log off *communications*: To quit a multi-user computer, BBS or online service.

log on *communications*: To get access to a multi-user computer, a BBS or online service, generally by identifying yourself with a name and password.

lpi *output*: The number of lines in a halftone image. Halftone images are composed of solid dots of various sizes at equal spacing, which creates an illusion of various shades between black and white (gray tones). This is how continuous-tone images, such as photographs, have traditionally been reproduced by printing presses, which are not capable of generating true grays. Resolution when defined by the number of lines (of dots) per inch, does not readily translate into dots per inch on an electronic output device such as a LaserWriter, because these are digital devices with dots all the same size. In fact, sophisticated algorithms are required to translate from lines per inch (halftone) to dots per inch (electronic). PostScript is an example of such an algorithm.

lossless *storage*: Compression without data loss Example: StuffIt

lossy *storage*: An adjective to describe a compression scheme, typically for a bitmapped image like a captured frame or photograph or a video sequence, that loses a little bit of data every time a file is compressed. Lossy compression algorithms like JPEG squeeze files up to ten times tighter than lossless compression like Compactor.

MacBinary *communications*: A special format for storing Mac programs on other computers. The Mac document or application is converted into a highly specialized form of text for storage on other machines, and then converted from text back into a Macintosh file when transferred back to a Mac. Most telecommunications programs do all this automatically.

machine language *programming*: Computer instructions at the lowest level - the language of the processor itself. Serious 0's and 1's. This code is almost always the end result of a program written in a mid or high-level language, then turned into machine language by an interpreter, or the duet of a compiler or assembler and then a linker.

MacinTalk *system software*: System extension converts text to speech. Incompatible with many Macs these days, largely replaced by PlainTalk.

MacPaint *applications*: The original painting program for the Mac 128, developed by Bill Atkinson. Also a black-and-white graphics file format.

macro *interface*: A series of commands, mouse movements, and keystrokes that are recorded and played back (actually, reenacted). Macros are used to automate complex or repetitive tasks. They are created typically by having the computer record a series of actions as you go through them (this is called a "watch me" macro) or by writing out instructions in a special programming language. The languages used for making macros are usually not as powerful as traditional programming languages, and so they are often called "scripting" languages, and the macros are called "scripts."

magneto-optical drive *storage*: A combination of optical and magnetic storage technology. The disk itself is magnetic, but a laser beam is used to encode the surface. These drives have much greater capacity because the light beam can be focused much tighter than a magnetic field.

mail merge *output*: A document combined with a database, usually for the purpose of making form letters. For example, a letter would have "holders" in place of name, address and title, and a database containing that information could be merged with that letter to create a series of "customized" letters.

mainframe *communications*: Big computer you log into remotely.

marquee *interface*: A selection area indicated by a rectangle of dashed lines that move around the boundary, featured in the Finder and lots of graphics programs. The result looks kind of like marching ants, or like the chaser lights on a theatre marquee. Hence the name.

mask *output*: The act of covering up a portion of an image either to avoid seeing it or to protect it from some process you intend to perform on the unmasked portion. This term is also used as a noun for the thing itself.

megabyte *storage*: 1024 kilobytes or, precisely, 1,048,576 bytes or 2 raised to the 20th power. Roughly a million bytes or about 600 double-spaced pages of text.

memory *hardware*: Where information is stored. It comes in two varieties, volatile and nonvolatile. Volatile memory lives in chips and is dependent on a continuous electronic current and can be easily lost (RAM is volatile memory). Nonvolatile memory does not depend upon current (e.g. a floppy disk). Memory is measured in groups of bytes (kilobytes, megabytes, gigabytes, etc.).

menu *interface*: A list of commands which appears on screen so you can select commands from your mouse. The Mac uses pull-down menus which are accessible at the top of the screen, as well as pop-up menus in some dialog boxes. Choosing a menu item results in immediate action unless the item ends with three dots in which case a dialog box listing more options will appear.

menu bar *interface*: The horizontal strip usually visible at the top of the screen which contains the titles of menus. If the menu bar is not visible, press command-space.

microcode *hardware*: Machine-language instructions that tell the CPU how to handle complex instructions such as those that take more than one clock cycle and/or use a lot of different parts of the chip. A high-overhead feature of CISC architecture, virtually eliminated by RISC chips.

MIDI *output*: (Musical Instrument Digital Interface) A hardware standard and a protocol for exchanging information between computers and electronic musical instruments.

minicomputer *hardware*: Bigger than a microcomputer, smaller than a mainframe.

MIPS *hardware*: (Millions of Instructions Per Second) A common, if somewhat misleading, measure of a computer's processing power. A Mac IIfx can process about 8-10 MIPS, a Quadra 700 does 16 MIPS. Macs don't usually get rated in MIPS.

MNP *communications*: (Microcom Networking Protocol) A set of hardware error protection protocols (MNP Levels 1-4) and data compression techniques (MNP Level 5) developed by Microcom. It makes use of CRC and retransmission of defective blocks by checks performed within the modem. It is strictly an American standard and is considered inferior to v.32 and v.42.

mode *interface*: A state in which you choices are limited. In general, Mac software tries to avoid modes and let you choose any command at any time. Dialog boxes are a willful intrusion of modality because they occur when specific information is needed before the program can continue.

model *programming*: A graphic or mathematical representation of an idea, whether a scientific problem or a three-dimensional object. The earliest kinds of modeling were used for weather forecasting (and bomb blasts). In fact, these studies fostered the emergence of chaos theory. Graphic modeling is used to create architectural views and fantastic visual effects for Hollywood movies.

modem *communications*: (short for modulator/demodulator) A piece of hardware used for communication between distant computers. It translates digital computer information (bits and bytes) into analog noises (hisses and chirps) and sends these noises over standard telephone lines to another modem, which does the reverse.

modifier key *interface*: Any key that has not character associated with it, but which changes the behavior of the keys. The modifier keys on the Mac are Caps Lock, Command (Apple on some keyboards), Control, Option, and Shift. When using modifier keys, you hold those keys down and then tap the character key that it modifies. For instance, the keyboard shortcut for Paste is Command-V. A few applications also recognize the Num Lock key as a modifier.

Moof! *output*: Moof! is what the Dogcow says.

motherboard *hardware*: A piece of fiberglass onto which the most important chips fit, including the CPU which runs your computer. Also called a "logic board".

mount *storage*: In the old days, "mounting" meant taking a reel of computer tape and mounting it on the tape drive's spindle so the computer could use it. Nowadays it means

making any volume (a floppy disk, SyQuest cartridge, hard drive or even a disk partition) available to the computer. Usually this happens without your having to do anything—when you insert a floppy it's mounted automatically—but sometimes it's necessary to use a software utility such as SCSI Probe. With a cartridge drive it is necessary to insert the cartridge before you can mount the drive.

mouse *interface*: A little hand-held rolling device that moves a cursor around a computer screen and comes with one or more buttons. Moving the mouse cursor and clicking the button is one way of controlling a computer.

MultiFinder *system software*: An advanced version of the Finder under System 6 that supports having more than one application open simultaneously. You can then bounce back and forth between applications and the desktop. MultiFinder really only works on computers with more than 1 megabyte of RAM. You can also switch back to the regular Finder if you need to. With System 7 the Mac is always in a multi-application mode.

multimedia *multimedia*: Any combination of graphics, video, animations, text and sound. A leftover word from the 1960's (you might enjoy reading "The Electric Kool-Aid Acid Test") that's all the rage in the '90s. Some of it is pretty good, I hear.

multi-tasking *programming*: The ability of a sophisticated computer to calculate separate problems at the same time. Multi-tasking is used on large computers to handle multiple users and is being introduced into small computers to allow a single user to continue working even when the computer has to spend time on something else. On a non-multi-tasking computer, when the computer has to figure something out the user has to wait.

munge *programming*: 1. To destroy, break, waste, corrupt or render incomprehensible. When this happens to one of your files, it's munged. Some say the term means "mashed until no good", but I can't account for the final "e". Hey, this is a serious lexicographic issue. 2. (Munger) The name of a TextEdit routine in the Mac Toolbox that replaces a block of text with another.

nanosecond *hardware*: One billionth of a second, or the time it takes light (or an electronic signal) to travel one foot. In this realm, the distance between chips on a circuit board becomes an issue. The speed that RAM chips are able to accept read and write operations is measured in nanoseconds. With speedier processors you need faster RAM chips to keep everything flowing. A 68030 (a relative slouch in these days of 120 MHz PowerPCs) needs RAM chips that run at 80 ns or faster, but older Macs can't take advantage of the speed and can use slower (cheaper) chips.

native mode *system software*: Software specifically written for the hardware it is running on, thereby taking full advantage of the capabilities of that hardware and running at maximum speed. PowerMacs run native mode applications faster than they can older programs which run in (680x0) emulation mode.

navigate *interface*: Getting around on and inside the desktop of your Mac. Most often you'll use the directory dialog box to navigate through folders to find the file you want, and it can be somewhat confusing. In a directory dialog box clicking and holding the mouse button on the name of the folder (above the list box), gets you a path menu showing all the folders that the current one is nested in. Third-party utilities such as Super Boomerang can aid your navigation. In the Finder (System 7), Command-clicking on a window title also gets you a path menu. Navigation is also an important concept in Hypertext.

nested *interface*: When folders are stored inside other folders they are said to be nested.

netmail *communications*: Ostensibly private e-mail which is transmitted by a user calling one BBS to another user calling a different BBS. Main usage in FidoNet BBS's.

network *networking*: Computers connected together in order to exchange information. Usually this is accomplished with cables but sometimes with modems and telephone lines. Really, when you connect a printer to your Mac you have created a very local network.

NiCad *power*: (short for nickel/cadmium) The most common type of rechargable battery. There is a lot of talk about the "memory effect" of a NiCad battery (where the battery begins to refuse more than a shallow charge and eventually goes bad), and you'll hear about completely draining them after every few uses. The latest poop is that it is unnecessary to drain NiCads beyond the point at which their charge affects the machine that's using them (the normal recharge point), and that with batteries made up of more than one NiCad cell (a multiple of 1.5 volts), when you completely drain them—with a light or a resistor—you run the risk of having one cell go below zero volts, get a reverse charge and die, rendering the whole package useless. By the way, they are also an environmental problem, so look for a battery recycler in your neighborhood.

node *networking*: A device that is attached to and is capable of communicating with a network.

noise *communications*: Any unwanted data mixed in with the good stuff you're after. In telecommunications it is static in the phone line or satellite link. In graphics it can be odd bits of dirt on your image.

Note Pad *system software*: An Apple desk accessory. You can write notes in it and they will be retained when the computer is turned off.

NSA *industry*: (National Security Agency) You are probably expecting some left-wing, Berkeleyesque snipes at this federal agency, but the NSA is in this glossary only because they possess the largest concentration of computing power in the US, and quite possibly in the world. Just thought you might want to know.

NTSC *display*: (National Television System Committee) This name is most commonly used as an adjective for a kind of video format, notably the standard for broadcast video in the US. NTSC IV video has two interlaced fields per frame and 30 frames per second. Wags say that it stands for "Never Twice the Same Color". Other standards are PAL (Britain) and SECAM (France). Some day HDTV will replace this fifty-year-old standard, but the programs will probably still be low-grade!

NuBus *hardware*: A set of rules developed by Apple for expansion cards that plug into slots inside the computer. NuBus cards are generally more intelligent and speedier that earlier expansion cards. They are used by most Macs with slots, but second-generation PowerMacs will substitute the PCI bus standard.

NuBus card *hardware*: An expansion board that adds hardware functionality to your computer. You can get video cards, accelerator cards, clock cards, cards that automate industrial processes or interface with scientific measuring tools, or whole computers on a card. They plug into NuBus slots inside most Macs; some.

null-modem cable *communications*: A cable for connecting two devices through their serial ports in which the wires carrying information (two and three) are crossed, so the information coming out of one devices goes into the other. This type of cable is used to connect a Mac to an ImageWriter and can be used to connect two Macs directly without modems.

num lock key *interface*: A special key, usually at the upper-left corner of the numeric keypad, that switches the function of the number keys from cursor movement to numbers.

nuPrometheus League *industry*: A bunch of crazy guys — most likely disaffected Apple employees — who decided to give away some of Apple's ROM source code in the Summer of 1989. As of this writing they remain anonymous and apparently unrepentant, though an investigation was conducted by the FBI.

object graphics *output*: Graphics in which you create discreet elements and then arrange them rather than creating the entire image as one complete thing (analogous to the difference between a collage and a painting). Each object is defined by mathematical formulae and lives on a separate, transparent layer. Contrast to bitmapped graphics. Because the resolution of object graphics is "device independent", they print at the resolution of the printer. Thus a drawing may look jagged on the Mac screen but print perfectly on an LaserWriter. MacDraw was the original object graphics program and programs were considered to be either "draw" or "paint" type, but modern applications include features of both.

object-oriented programming *programming*: A development technique where code is divided into small pieces and can be reused by other code for efficiency.

OCR *input*: (Optical Character Recognition) A process whereby hardware and software look at printed or typed words and interpret them as words rather than as pictures. OCR technology has become remarkable better and soon may be actually convenient. OCR's methods require high-powered personal computers (or larger), and that is not likely to change.

OEM *industry*: (Original Equipment Manufacturer) The company that actually makes the hardware that other companies buy and resell under their own labels. You need to know the OEM usually only when purchasing hard drives but then it is important. SyQuest is a big OEM.

off hook *communications*: The modem's way of picking up a telephone receiver. "Off hook" produces a busy signal on the phone line.

offline *communications*: The state of not being connected to another computer. Used to describe your computer when it is performing actions that do not depend upon being connected to another machine. A printer can be offline if it's turned off but still connected.

on hook *communications*: The modem's way of replacing a telephone receiver after it has lifted it "off hook". The phone can ring when it's "on hook".

online *communications*: Connected to another computer, usually a network, a BBS or an online service. Any device that is connected and ready to be used is online.

online service *communications*: A company offering a service for a regular fee. Some of the popular ones are CompuServe, America Online, Delphi, GEnie and eWorld. You can read the latest news, download software, engage in real-time conversations, post messages, opinions and classified ads, send and receive e-mail, do research, meet people, it's really too wonderful. To get connected online you need an account with the provider, a modem and communications software (some services provide the latter).

operating system *system software*: Software which provides the means by which your computer runs applications, copies disks, runs hard drives, prints documents, and so on. On a network, the operating system allocates the computer to each user in an equitable manner. The Macintosh's OS is the System and Finder and other stuff in the System Folder, and the programming in the ROM chips, called the Toolbox.

optical disc *storage*: A disc (not disk ... tsk) that is read and written to using light instead of magnetism. Their great advantage is that since the light beam is smaller than the magnetic flux path, they can hold much more data—as in a hundred times more! CD-ROMS are the most popular kind. Optical discs that behave just like floppies are not yet a reality, but two types come close: the WORM (write once, read many), used for archiving, and the magneto-optical disc, which is a combination of technologies as the name implies.

outline font *output*: Fonts that uses mathematical descriptions of each character rather than bitmapped images. Outline fonts can be viewed and printed at any size and at any resolution. The two types of outline fonts in the Mac world are PostScript and TrueType, although the math is different. When an outline font is printed, the equations are interpreted and a bitmap is created (rasterized) at the resolution of the printer.

owner *networking*: The user who created an folder on a file server. In AppleShare and System 7's Publish and Subscribe, only the owner can open folders she creates unless she gives access privileges to others.

packet *networking*: A series of bytes sent as a group over a network. A packet includes data plus a source and destination address and possibly notes about rejoining the data with other segments sent in separate packets. Networks break data into packets so that lots of computers can share the lines nearly simultaneously.

parallel processing *industry*: More than one processor working on the same problem at the same time or working on separate parts of a problem at the same time. A more powerful alternative than a single processor (which most computers use), regardless of how fast that single chip may be. Surprisingly, it uses cheaper hardware. Some schemes, called massively parallel processing, use thousands of processors. Programming for this environment is very difficult.

PARC *industry*: (Palo Alto Research Center) A research lab run by Xerox where the basic ground rules of the graphical interface were developed almost twenty years ago. These first rules were then implemented in Xerox's Star computer, developed by their Office Products Division. The Star was one of the inspirations for the original Mac when Steve Jobs toured the center and became enamored with the interface. PARC also developed laser printers, Ethernet, PostScript and object-oriented programming.

parity *communications*: Error checking at a basic level, where every byte has some self-checking number attached to it. Parity checking can be used in hardware for maintaining information in RAM chips. Telecommunications programs make use of more efficient "block" checking (or more advanced algorithms) although parity must still be matched in a session for transfer to take place correctly. Host communication in the BBS world omits parity checking (no parity). If you are using 8-bit data, use "no parity" or "ignore parity".

partition *storage*: A subdivision in memory or on a hard drive. Partitions are areas that are treated separately even though they are on the same drive physically. They are technically called "volumes." You'll even get a separate icon on the desktop for each partition. In RAM, partitions are simply amount of memory reserved for use by particular applications. You can change the size of an application's memory partition in its Get Info box, accessible from the desktop.

Pascal *programming*: A language created by a Swiss computer scientist named Niklaus Wirth and developed at UC San Diego that was popular at the time the Mac was being created. It's much harder than HyperTalk, but yields faster programs. The Mac's operating system and Toolbox were written in Pascal, but lately Apple has begun using the language C instead.

Paste *interface*: Taking whatever is in the Clipboard and transferring it into the current selection. The contents of the Clipboard can be text, pictures or anything.

patch *programming*: A term for a minor modification to existing software.

pathname *programming*: A list of names that tells you where an application or document is. The first part of the pathname is the name of the volume (disk or other device), followed by the sequence of nested folders which lead to the file itself. The parts of a pathname are separated by colons (:), which is why you can't use a colon in the name of a folder. The entire pathname can be up to 255 characters long. As you navigate your way to the file, you move along the path.

PCI *hardware*: (Peripheral Component Interconnect) A new type of expansion slot and protocol which will replace NuBus starting with the second-generation Power Macs.

PCL *output*: (Printer Control Language) A set of commands by Hewlett-Packard used to control its LaserJet and DeskJet printers. PCL has evolved over time; to the current Level 5. While not a PostScript replacement, it is becoming very sophisticated.

PDS *hardware*: (Processor Direct Slot) A slot that accepts expansion cards and connects them directly to the processor chip. These cards can enhance CPU performance or provide video signal access among other functions. PDS cards from different Mac models may not be compatible.

peripheral *hardware*: Any hardware that attaches to the computer. Modems, scanners, CD-ROM drives and printers are all peripherals.

pica *output*: A typesetting measurement. 1 pica equals 12 points, 1/6th inch or about .167 inch. Type size and line spacing is measured in points, line length in picas.

PICS *multimedia*: An old standard for compiling Mac-created animation files (as a series of PICT images), superseded by QuickTime.

PICT *output*: A file format for storing pictures. PICT files can contain either bitmapped or object graphics. PICT files can be read by many applications. Screen shots created by Command-Shift-3 use PICT images, as does the Scrapbook. PICT2 is an extension of the PICT format that can handle more colors at higher resolution although files are usually labeled PICT. Unfortunately, PICT files are of limited precision and reliability. PostScript is far better for most printed graphics.

PIM *applications*: (Personal Information Manager). Software that converts your Mac into a very expensive name-and-address manager, calendar, or the like. See also Newton.

Pink *system software*: Code name for the operating system of the future (1995), being jointly created by Apple and IBM through their Taligent joint-venture. Theoretically it will work on many different platforms.

pixel *display*: The smallest dot that can be displayed on the screen or a printed page. On the 9" Classic screen, each pixel is 1/72nd of an inch on a side. On a LaserWriter, one pixel is 1/300th of an inch on a side. Pixels on color monitors are composed of three spots, red, blue and green.

platform *hardware*: A buzzword for a computer and its peripheral devices (like a printer or disk drive) which together can run software.

PMMU *hardware*: (Paged Memory Management Unit) A circuit that controls sections of RAM, necessary for multi-tasking and 32-bit addressing under System 7. The 68551 is a PMMU chip that you can install into a 68020 Mac that has a socket for it, such as a Mac II. This circuit is part of the 68030, 68040 and PowerPC processors.

point *output*: The unit of measure that typesetters have used for many years to measure the size of type and space between the lines. There are 72 points in one inch, and 72 dots per inch on the original 9" Mac screen. That was not an accident.

pop-up menu *interface*: A menu that doesn't pull down from the menu bar but which otherwise acts like a menu. Pop-up menus sometimes show up in surprising and unconventional places.

port: 1. *communications* (noun) A small plug on the back of the computer into which you connect cables. The Mac makes this easy by giving you a picture above the port as a clue to what should go into the socket. Types include serial, parallel, SCSI, ADB, MIDI and many more. Each port has its particular protocol for information transfer. 2. *programming* (verb) Rewriting an application so it runs on a computer system for which it was not originally written. A good port adapts the application to the new computer; a bad port makes your computer look like another brand.

PostScript *output*: A popular programming language for defining complex graphics at any resolution, developed by Adobe Systems. This is the page-description language the LaserWriter printers use to print high resolution graphics and text. It has become an industry standard. If you are using 37-point outline type and it looks crummy on the screen, it will still print nice and smooth on a PostScript printer. This type of printer has a built-in PostScript processor that does the work of scaling and rasterizing the font. By contrast, with TrueType the Mac's processor does all the work of scaling the font for both the printer and screen. PostScript has been updated to PostScript Level 2, but the original version is installed on millions of machines so don't worry about compatibility. PostScript clones (compatible systems) also exist.

PostScript Fax *output*: Adobe's fax protocol produces superior output on plain paper from compatible printers. Supports CCITT Group III protocol and LZW compression.

PostScript Level 2 *output*: Adobe's second generation of its page-description language released in 1994. It features better handling of color, wider selection of fonts, faxing, higher-resolution output and compression and decompression.

PostScript printer *output*: A printer that can interpret the graphics and fonts that are written in the PostScript language. Not all laser printers can read PostScript. Just because a printer has high resolution doesn't mean it is PostScript (for example, the Apple StyleWriter). Usually if a printer is not a PostScript printer, it is a QuickDraw printer.

Power Mac *hardware*: Generic model name for Macs using the PowerPC processors.

power supply *hardware*: The box in the computer (outside, for PowerBooks) that converts line voltage (AC power) to low-voltage DC needed by the computer's components.

power user *programming*: Once you start using keyboard commands, install a few extensions, create a macro or two, and start throwing around words like SCSI and PostScript, you can consider yourself a power user. Say words like bandwidth, Apple events, and 32-bit clean in mixed company and you will really get respect.

PowerPC *hardware*: Processor chips developed jointly by Apple, IBM and Intel for the next generation of Macs and others. The PowerPC family is a RISC chip which should run much faster and use less power (and cost less) than the Motorola 680x0 family used in Macs from the beginning. Initial models include the 600, 601, 602 and 603. The 603 is expected to be used in low-end desktop Macs and portable Power Macs.

PRAM *hardware*: (Parameter Random Access Memory) pronounced "PEE-ram". A small amount of memory maintained by a battery or two that remembers the date and other Control Panel settings. If this information gets messed up, it can really confuse the Mac. You can rebuild the PRAM by "zapping" it. Under System 6 you zap it by holding down Command-Option-Shift while selecting the Control Panel from the Apple menu. Under System 7, hold down Command-Option-P-R at startup and wait til you hear it ping and reboot. The batteries in the Mac 128 through the Mac SE/30 are removable, but many of the ones in later Macs are soldered in.

preferences *system software*: Files that are created by most software applications (and the Finder) to store default settings for the options you may choose as you customize the program's environment. Under System 6, they are stored in a variety of places, but System 7 gives them all a home in the Preferences folder inside the System Folder. If your program starts acting strangely, one remedy is to throw the preferences file into the trash, forcing the program to create a fresh one.

printer *output*: Hardware that prints the information in the computer onto paper.

printer driver *output*: A small file that allows your Mac to talk to a printer. Several come with your operating system disks, but others are also available which work with specific programs or printers. Sometimes on a network where a printer is shared, different users will have different versions of the printer driver. This can cause a "laser war" as the printer resets itself differently after each job.

processor *hardware*: A "computer-on-a-chip" that calculates things—as opposed to memory chips which store things. Processors are made up of incredibly vast and small electronic circuits containing thousands of transistors and other components. Two types of processor architecture are CISC and RISC.

programmers switch *programming*: The little piece of plastic with two tabs that came with your computer if you have an older Mac. It mounts on the case and can bail you out when the computer freezes. Apple told you not to install it unless you were a serious programmer, but they lied. The button with the triangle is the reset switch; the other one is the interrupt switch.

protocol *industry*: Any set of rules for exchanging information.

public domain *industry*: Any created work, including software, that the public has every right to copy and use in any way they see fit. The authors retain no rights or liabilities, either because they've relinquished them or because they've been dead for a while. Often used incorrectly to describe copyrighted, Publicly Distributable software for your computer.

Publish and Subscribe *system software*: A new technology by Apple, built into System 7, that allows an application that supports it to make a document's data available for use by other documents - including those by other applications. The way it works is that you "publish" special files called "editions" (really, you just save them) that contain data you expect to update from time to time. You then cause other documents to "subscribe" to the editions and when a new edition comes out, you may choose to have the subscribers incorporate the new data. This system is useful on networks where more than one person is using data from a single document.

QuickDraw *system software*: A set of software routines built into the Mac's ROM (read-only memory) for drawing graphics either onto screen or onto a printed page. 32-bit QuickDraw is a full-color extension to QuickDraw.

QuickDraw printer *output*: Not really a type of printer, rather any printer that cannot read PostScript. A "QuickDraw printer" relies on its printer driver to use the QuickDraw routines in the Mac's operating system to recreate what it sees on the screen. That's the raison d'etre for Adobe Type Manager. ATM makes Type 1 PostScript typefaces clear and relatively smooth on the screen; thus, when they print to a non-PostScript printer, they look good on the page. Apple solved the problem another way with the creation of TrueType fonts, which print beautifully on an ordinary printer. The trick is that the Mac does the work of scaling and rasterizing the image.

QuickDraw GX *system software*: An updated, more powerful set of routines for typesetting and 3-D graphics due out in late 1994 (as part of System 7.5) that will take the form of a System Extension. Under QuickDraw GX, PostScript Type 1 fonts will be treated as equals with TrueType. It promises to be a major improvement in the way the Mac handles all kinds of graphics in any and all applications.

QuickTime *multimedia*: An extension from Apple that enables third-party applications to record and playback sounds and movies. QuickTime cleverly adjusts the playback speed according to the capabilities of the hardware in your Mac. It has the JPEG compression and decompression code built-in and makes it available for graphics applications as well. The QuickTime extension is part of System 7 (drop it into the System Folder to install it), and runs only on Macs with at least a 68020 processor.

QWERTY *interface*: The standard arrangement of the keys on a keyboard. QWERTY (named after the first six characters on the top row of keys) is awkward and makes typing difficult. Typewriter keys were laid out this way to purposely slow down typing so the keys wouldn't jam.

radio button *interface*: A button allowing you to select one option from among many. Named for the push buttons on your car radio.

RAM *hardware*: (Random Access Memory) The temporary memory in which a computer stores information while it's running. Ordinary RAM is volatile—it loses its content when the power goes off. RAM is also extremely fast. Under System 7 you can get a good idea of how your Mac's RAM is allocated at any one time by choosing "About This Macintosh" from the Apple Menu when you're on the desktop (aka the Finder). You can change the amount of RAM reserved for each program in the Get Info window, also available from the desktop.

RAM cache *system software*: A special area of RAM which can be used to store informa-

tion which your Mac's processor needs frequently. The info most recently used gets stored in the cache; the computer looks there to see if still has the info you are requesting or has to go get it more slowly from the main RAM or the hard drive.

read-only *storage*: A file or a disk is read-only when you can look at and print its contents, but cannot save changes to it. Often you may think you can, because the file lets you select and edit text, but you won't be allowed to Save. Locking a disk or file will make it read-only. CD-ROMs are read-only. Certain parts of the Mac's inner workings are read-only, such as the ROM chip.

ReadMe *applications*: A small file on most new software disks which describe what's on the disk, how to install it, and give details of any last minute changes. Apple's ReadMe documents are in Teach Text format, others often use text-only format. A variant on the term is Read Me First.

record *applications*: One set of related information in a database. In an address book, all the information about each person (name, address, phone and so on) comprises one record. The individual components of a record are held in fields; every record in one database has the same fields (filled or empty). A record is analogous to a row in a spreadsheet.

redraw *display*: When you move an object across the screen, scroll, or change windows, all or part of the screen has to be redrawn. The Mac has to figure out where everything has moved to and redraw them in their new places. This can take a lot of time with complex text or color images (hello Photoshop). Some applications allow you to delay redraw. You can also force a redraw in various ways. Other applications let you work in a lower-resolution mode to speed redraw. As processors become faster and stronger this issue will diminish.

refresh rate *display*: The speed at which the video screen is redrawn. Faster is better. The original 9" Mac screens refresh at 66 Hz (66 cycles per second), which is much faster than most TVs. Most good monitors refresh at 70-75 Hz. Of course, a fast video redraw still has to wait for software to come up with a new picture for it to draw, which is where processor speed matters most.

region *programming*: Any arbitrary set of pixels treated as one object. You don't need to know this, but Bill Atkinson's patented method of handling regions is one of the most important pieces of QuickDraw.

relational database *applications*: A database application where more than one file can be linked together, such as a customer list and an order list linked by a customer number. You can program all kinds of fancy functions; for example, as you type in the customer name the address and other info automatically pop into the right fields on the order form. Relational databases are made of files and produce output called reports. They are a must for serious business work. These applications, such as 4th Dimension, are harder to use and cost more than flat-file databases, but they are very powerful.

render *display*: The creation of a simulated three-dimensional object by taking a model and adding surface textures and lighting effects such as reflections and shadows. Needless to say, this takes a lot of computer muscle and time. The dinosaurs in Jurassic Park were rendered on monster workstations from Silicon-Graphics, although they were modeled on Macs.

ResEdit *programming*: (Short for resource editor) A program from Apple which allows you to modify resources graphically. You can edit icons, menus, dialog boxes or get deep into the hexadecimal world of software. The current version is ResEdit 2.1.1, which handles resources in System 7. Not for beginners or the faint of heart. BMUG publishes "Zen and the Art of Resource Editing", an excellent primer. Always always always work on a copy of the resource.

reset switch *programming*: The button with the triangle on it that is part of the programmers switch. Use it as a last resort if the Mac freezes. It's better than turning off the computer. But if you're using System 7 try a force-quit first by typing Command-Option-Escape to get back to the Finder, where you should then restart the computer.

resident font *output*: Fonts that come built into the ROMs in a printer. With resident PostScript fonts you also get a disk with the bitmapped screen versions to put on your computer.

resolution *output*: A measurement of the clarity and sharpness of a screen or printed document. Resolution is measured in dpi (dots per inch). The greater the dpi the higher the resolution and the smoother the graphics and text will be. A Classic Mac screen has a resolution of 72 dpi, which is the standard upon which software is written. Some monitors deviate from 72 dpi, so documents may look larger or smaller that they will print out. Check the application's ruler. A LaserWriter has a resolution of 300 dpi while a Linotronic can go up to 2540 dpi. Resolution in halftones is measured in lines (of dots) per inch, which must be converted to dpi by a sophisticated algorithm such as PostScript.

resource *programming*: One of Mac's greatest innovations when it came out in 1984. Resources are small chunks of program code that can be used over and over by applications. Every element of the Mac interface which we have come to know and love is a resource. Menus, icons, cursors, keyboard layouts, and many other things are resources. System software is largely composed of resources. Programs written for the Mac usually "borrow" system resources in order to generate their own interface. Any file or program running on the Mac has the potential to contain its own resources, in a section of the file known as the "resource fork". There is a parallel portion of the file called the "data fork" where the actual numeric and textual data lives.

resource fork *programming*: A part of an application where the programming instructions specific to that application are stored. The resource fork is composed of separate resource packages, like volumes in an encyclopedia. A document can also have a resource fork, if it really wants one.

restart *system software*: A command in the Finder's Special menu that performs the shutdown that you normally do at the end of the day, then immediately reloads the operating system and Finder like it was the next morning. You should restart the computer after you've installed a new extension or Control Panel since those things are activated as the computer boots up. You should also restart if the computer is acting funny or if you've had a freeze or other system crash from which you've been able to get back to the desktop (by pressing Command-Option-Escape). Restarting is much easier on the machine than turning the power off and back on.

return key *interface*: Just like on a typewriter, the Mac's Return key ends one line and starts another. Weirdly called "carriage return" by some people who seem to not realize that computers don't have paper carriages. In dialog boxes, typing Return will often perform the default action, such as opening the selected file in an Open… dialog. In telecommunications, you sometime must type Return at the end of every command in order to send it, and often insert a return character after every 80 (or fewer) characters. A return character is often used as a delimiter (separator) of whole records in a database or lines in a spreadsheet when exporting.

RGB *display*: (Red, Green, Blue) A type of monitor that accepts separate signals for red, blue, green and black. Your VCR combines its video information into a composite signal, which reduces the quality of the image due to its limited bandwidth and the need to combine and separate the color information. An RGB monitor, relieved of those burdens, is capable of higher sharpness and purer colors.

RIP *output*: (Raster Image Processor) The computer inside PostScript laser printers that convert the graphics instructions into high-resolution bit maps before the printing engine places those bitmaps on the page. When a non-PostScript printer has to print a Type 1 PostScript font, ATM software rasterizes the font inside the Mac. With TrueType (System 7), the Mac's processor and software accomplish similar RIP chores.

RISC *hardware*: (Reduced instruction set computing) - Processor architecture that runs much faster by relying on a reduced set of simplified instructions. The goal is that one CPU instruction can be performed every clock cycle. Although more instructions (therefore longer programs) are necessary to carry out complex processor tasks, RISC still is faster because the bulk of all computing is simple instructions. Apple's new PowerPCs are RISC processors, and it is the prospect of greatly increased speed (as well as lower cost) that drove the decision to change from the CISC Motorola 680x0 line.

ROM *system software*: (Read Only Memory) The instructions and data built into the chips of your computer that cannot be changed. This data differentiates your machine from other computers (which have different instructions and data). The Macintosh ROMs have grown with each generation - the original Mac has 64 kilobytes, the Mac Plus has 128K, the Mac SE and Mac II each have 256K (the ROMs are different in these two - the Mac II truly has 256K of instructions and data, the Mac SE has only about 170K —the rest are pictures of the designers). The newest Macs have 1024 K of ROM. Every computer has some kind of ROM, at least to tell it what to do when the power first comes on. Even your

microwave oven has a ROM chip. Maybe your washing machine, too.

router *networking*: A combination of hardware and a software-referee that divides a busy network into smaller networks (called zones) and keeps the information in those networks separate except when necessary. Routers are used when the amount of information being transferred over the network it too large to be easily carried to all parts of the network.

RS-232C *communications*: A standard for communication between computers and peripheral devices. The Mac uses RS-422A (which is different but fully compatible) to connect some devices. The types of connector over which RS-whatever travels can vary substantially.

RS-422A *communications*: A Mac standard for communication between computers and peripheral devices via a serial port. RS-232C is different but fully compatible. This standard is used with a variety of physical connectors.

RTF *output*: (Rich Text Format) A file format by Microsoft that encodes all manner of text formatting information (from text fonts and styles to paragraph indentation to footnotes) amongst the text to be formatted. An RTF file consists entirely of ASCII characters so it may be transmitted easily to any type of computer (hint: blue ones) that has software capable of interpreting RTF. Many word processors contain RTF writers to create RTF files, and RTF readers to reformat text from elsewhere.

run-time version *programming*: Software that allows a document to be run independently of its original application. Many applications (from programming languages to databases) allow users to write programs, but won't run without the parent application. A run-time engine (the code that accomplishes this feat) removes the dependency and allows documents to run alone.

SANE *programming*: (Standard Apple Numeric Environment) Apple's implementation of the standards for mathematical computation developed by the IEEE (Institute of Electrical and Electronic Engineers). Using SANE results in highly accurate, predictable, reproducible math. It takes time, though. Some applications have their own routines that are much faster, with the trade-off being that they are less precise.

sans serif *output*: A typeface without serifs (the little bars at the ends of letters) such as Helvetica. Sans serif typefaces look clean but are harder to read at small sizes.

save *storage*: Storing information so that it is not lost if you turn off your computer (or if there is a power failure or system crash). Normally you save to a disk or some other medium.

scanner *input*: A piece of hardware that minutely scans an image, reading dark, light and colored areas as a stream of digital data. You put a photograph, a drawing or even a three-dimensional object on the scanner, close the lid and push a button and the machine sends a copy of it to the computer. It's sort of like a copier. Some scanners are handheld and you roll the little machine over the top of the image. There are also video scanners that can input live stuff. The scanning software usually offers you several file format options. Unless you have a clear idea and a good reason not to, always save scanned images as TIFFs.

Scrapbook *system software*: A desk accessory from Apple into which you can paste text or pictures for use later. It is different from the Clipboard because it saves the information to disk, so it stays around after you shut the computer off. A graphic that you put into the Scrapbook will be converted to PICT format, so make sure that this is OK.

screen dump *system software*: A picture of the screen in PICT format under System 7, bitmap (MacPaint) format previously. A way to capture pictures of icons, windows, menus, etc., and an indispensable tool for writing articles about things Macintosh. Holding down Command-Shift-3 takes a picture of the screen at that moment, producing a screen dump.

screen saver *silly software*: A utility program that prevents screen burn-in by creating animated effects while you are not working. Effects range from moving patterns to flying toasters. If you leave an image on the screen for an extended period of time, it will eventually burn in and leave a permanent shadow.

script *programming*: A user-definable set of instructions for use by an application. Two common script systems are the HyperTalk programming language used by HyperCard and AppleScript for Apple events. Really a high-level programming language, but the term "programming" scares novices.

scroll bar *interface*: A rectangular bar that may be along the right or bottom of a window. If the scroll bar is empty, the window is showing the entire document. If the scroll bar is active, the window is showing only a part of the document. An active scroll bar is shaded and contains a scroll box in the middle and a scroll arrow at either end. Clicking or dragging in the scroll bar causes the view of the document to change.

SCSI *storage*: (Small Computer Systems Interface) pronounced "scuzzy". A standard for connecting computers and peripheral devices which allows information to be exchanged very quickly. The standard also allows for some communication between devices without the main processor doing anything, although this capability is not used often. The physical SCSI connectors have either 50-pins (the industry standard) or 25-pins (the Apple standard). A revision called SCSI-2 now exists.

SCSI ID *storage*: A number from zero to seven that identifies each device connected via their SCSI ports. The Mac itself is seven, and internal hard drives are usually zero. The ID is also called the SCSI address.

SCSI-2 *storage*: A revised version of the SCSI protocol that can handle 16 or 32 bits at a time. The result is a substantial increase in speed.

sector *storage*: The smallest subdivision of a disk (or other storage medium) ranging in size from 512 bytes on a floppy up to thousands of bytes on a hard disk. The computer reads and writes nothing smaller than one sector, for the sake of speedy operation. A bad sector cannot hold information accurately.

selection *interface*: The information affected by the next command. Selected text is usually highlighted, graphic objects sprout handles, icons switch to inverse video. The text insertion point is also a selection.

selection rectangle *interface*: An area of the screen shown by a rectangle of dashed lines that is created when you push the mouse button down, hold it and then drag the mouse. A selection rectangle is available in the Finder and most graphics programs. A variation is the lasso tool, which snaps tight around the edges of the selected objects when you release the button, as opposed to the rectangle which retains its shape.

serial transmission *communications*: A way to transfer information in sequence on a single channel, as opposed to in parallel. Usually there is also a return channel.

serif *output*: The little ledges or other embellishments on the ends of letters which make them easier to read.

server *networking*: One-half of a two-part software system. The other half is the client software. Your computer is the host and others log on as its clients. This relationship is used on the Internet and BBS's such as Planet BMUG. A file server, by contrast, is a networked computer used as a central hard drive.

Shareware *industry*: Publicly Distributable software that you can use for a time to determine whether you like or need it, and then pay for. Try before you buy software, usually not marketed through traditional channels but available from users groups, bulletin board serves, and friends. Shareware is generally pretty cheap ($5 to $20) and you really should pay it to encourage other people to create nice things for us.

SIMM *hardware*: (Single Inline Memory Module) A small plastic strip holding memory chips which fits into a Mac (except the Portable and PowerBooks) and gives it more RAM.

single sided *storage*: An obsolete description of a floppy disk that has two sides but where only one side has been tested by the factory. Original Macs used only one side of the disk to store 400 kilobytes and you might have some of those old disks laying around. The existence of a button offering to initialize a disk as single-sided is an extreme example of backwards compatibility.

SingleFinder *system software*: A passé term for the normal Finder as opposed to MultiFinder under System 6.

size box *interface*: The small box in the lower right corner of most windows which allows you to change the size of the window when you click on it and drag. Some applications will not let you drag with complete freedom; they restrict the window size.

slot *hardware*: The place you plug a card into inside the computer. Usually there's a long thin connector with numerous metal contacts that match traces on the edge of the card. Different Macs take different types of cards, so be careful.

smart quotes *output*: Curly "quotation marks" (and apostrophe's) that face in opposite directions at either end of the quotation (as used here). The mark of distinction. Many word processors and other applications have a checkbox in the preferences section to always substitute smart quotes from the plain

ones the Mac keyboard supplies. If yours can't do this, use the left and right brackets in combination with the Option and Shift keys to get what you want. Experiment!

snd *programming*: A file format for sounds on the Mac. It comes in two varieties: snd 1, for sounds used by the Mac II; and snd 2, for sounds used by HyperCard. HyperCard 2 can use both formats.

SneakerNet *networking*: The world's simplest network: none! Just put data ona floppy or other media and carry it between machines. Often the network of last resort.

SNMP *networking*: (Simple Network Management Protocol) - Invented in the late 1980's to manage the Internet, it has become a de facto standard for network management. Although included by Apple in its TCP/IP and AppleTalk packages, real Mac implementations are just beginning to come into the marketplace.

soft hyphen *output*: A hyphen that is invisible unless the word falls at the end of the line, in which case the computer will break the word and show the hyphen.

soft return *output*: A feature of some word processors and page layout programs that forces a line break but doesn't start a new paragraph. This is what the computer does when it wordwraps.

software *applications*: Hardware is the stuff you can touch. Software is the invisible stuff, the programming, the energy coursing through the chips that makes the computer work. Software includes the applications, the documents and the operating system, in memory or stored on a disk or drive.

software piracy *industry*: Making copies of commercially-sold software you did not purchase, also known as stealing. The term "pirate" typically refers to those who addictively collect software simply for the pleasure of having lots of it.

special character *output*: Generic term for non-alphanumeric characters which have special characteristics, either for enhanced typography or for some purpose special to the computer.

spooler *output*: Software and/or hardware that takes over a task so that the CPU is not tied up. Most often associated with printers where the spooler intercepts the data being sent to the printer and stashes it in RAM or on disk and sends it to the printer at a slow rate the printer can accept. That way you can resume using your computer more quickly. Apple uses the term "print server". The term comes from an old IBM acronym, "Simultaneous Peripheral Operation On Line".

spreadsheet *applications*: An electronic ledger used primarily for calculating numbers. Spreadsheets are made up of cells arranged in rows and columns. Cells can hold data or formulas that take information from other cells, do calculations on it and display the result. Some spreadsheets , such as Microsoft Excel, also have relational database capabilities, do fancy graphing, page layout and even some word processing.

SQL *networking*: (Structured Query Language) Database protocol for interapplication communication.

stack *programming*: A document created by HyperCard. It works as a series of cards (hence the term stack, as in stack of cards) and is meant to be viewed by others on the computer. As you flip through the cards, you are apt to find anything: sounds, animation, music, and ways to interact. Many CD-ROMs use HyperCard stacks as front ends for navigation and control.

stand-alone *programming*: A program that can be run on its own. A correctly written and compiled program is a stand-alone, as is a demo program with a run-time engine.

start bit *communications*: The very small piece of information used by a computer to signal that it is about to send a larger piece information. It is needed in situations where sending a known amount of information takes an unknown amount of time, such as when using a modem to communicate over phones lines.

Startup Disk *system software*: 1. A Control Panel that you use to designate which disk the Mac will use to start up (load and run the operating system and the Finder). This situation exists when there are multiple hard drives containing System Folders connected a Mac. The startup volume's icon will appear in the top-right corner of the desktop. 2. (lower case) Any floppy or hard drive that has a System Folder on it that you can use to get your Mac started.

startup volume *system software*: The disk or drive whose System and Finder the Mac uses to boot up. The startup volume always puts its icon in the top-right corner of the desktop. You can change the startup disk by using the Startup Disk Control Panel.

stationery pad *system software*: A document which instead of being opened by its application is copied, and the copy is opened for you to work on. Useful for standard formats you would like to reuse. You can make any document a stationery pad via the Get Info box accessible from the Finder. Many programs allow you to save a document as a stationery pad.

stop bit *communications*: When the computer has stopped sending a larger piece information it sends this very small piece of information. It is needed where sending a known amount of information takes an unknown amount of time.

StuffIt *communications*: A Shareware file compression utility written by Raymond Lau when he was in high school and used by virtually every Mac telecommunicator to reduce the size of files before spending time uploading them. The plain version is known as StuffIt Lite. Stuffit Deluxe is a more advanced version sold commercially. It has more features than StuffIt Lite, but both use the same compression format and algorithms. Names of files compressed by StuffIt should be tagged with a ".SIT" suffix, so others will know how to uncompress them. StuffIt can also decompress files compressed with PackIt, an older utility (those files end with the ".PIT" suffix).

style sheet *output*: A list of the text styles and format settings you have applied (or intend to apply) to each single paragraph. You can then apply the same style wherever you wish. Best of all, if you make a change in the stylesheet the change is automatically applied to all paragraphs having that style. A wonderful feature of better word processors and all page layout programs.

suitcase *system software*: 1. A file for storing fonts or desk accessories. In System 7 if you double-click on a suitcase, it opens up to a window with an entry for each font size, and you can double-click each one to take a look at it. In System 6, if you double-click on a suitcase you'll launch the Font/DA Mover where you can create suitcase files. In that program you can click on the name of a font to see it displayed on the screen. System 7 does not create suitcases, and it handles fonts and DAs singly. Under System 7.1 a new folder called the Font Folder lives in the System Folder. You drag fonts into that folder to install them. 2. Suitcase II, by Fifth Generation Software is a utility that works quickly and efficiently with a large number of fonts, DAs, sounds and fKeys.

SWIM *hardware*: (Super Woz Integrated Machine or Sanders Woz Integrated Machine) A floppy-drive controlling chip which can read IBM's PS/2 formatted disks.

SYLK *applications*: (Symbolic Link) A file format used to transfer information to and from spreadsheets and databases.

synchronous *communications*: A kind of information exchange controlled by timing, usually possible only with computers connected directly to each other. Synchronous transmissions are more controlled and more efficient.

SysOp *communications*: (System Operator) The person responsible for setting up and maintaining a BBS or online service.

System 6 *system software*: The culmination of Mac operating system development prior to the introduction of all-new System 7 in 1991. Some users prefer System 6, which is faster for some tasks on some Macs. System 6 takes up less RAM space than System 7 so it is better on 1 megabyte Macs. It supports multiple applications with MultiFinder. INITS come first and Font/DA Mover is used for resource management.

System 7 *system software*: Apple completely rewrote the operating system in 1990. System 7 has many improvements over previous systems. Among them is the ability to have as many programs running side by side—not yet true multi-tasking—as RAM will allow, and 32-bit addressing which allows access to far more RAM than the previous limit of 8 megabyte. The System Folder was organized and improved greatly: Fonts are installed by dragging them into the Fonts Folder under System 7.1. DA's live in the Apple Menu Items folder, where you can put aliases of the icons of your applications too. INITS, now called Extensions, live in their own folder inside the System Folder. System 7 supports Bubble Help, TrueType fonts, Apple Events and Inter-Application Communication. Most older applications run fine under System 7, but some have had conflicts and had to be rewritten for deep technical reasons.

System and Finder *system software*: The two main pieces of software required to operate a Mac. These two inseparable friends are almost always kept in a folder called the System Folder. There have been multiple revisions and upgrades to these; the latest versions are System 7.1 and Finder 7.1. You must have a System and a Finder (or a Finder re-

placement like Servant, PowerStation or Oasis) on any disk you use to start the Mac. You should have no more than one System and Finder on a hard drive.

System Folder *applications*: The loss of control of the Mac when something goes seriously wrong. Either you will see a very polite but disturbing notice on your screen with a picture of a bomb about to explode and an error code number, or things will just stop working. This disaster is most often caused by software. There are several remedies. Under System 7, you may be able to do a "force quit" by holding down the Command and Option keys and pressing the Escape key. Next, if you have the Programmers Switch installed, try hitting the reset button (with the triangle on it). If you succeed in getting back to the Finder you should choose Restart from the Special Menu to eliminate any lingering symptoms of the problem. If all else fails, you have to turn the Mac off and on again to regain control. Newer Macs allow you to execute a "warm boot" which means to restart the Mac without turning the power off. If your computer cannot even boot up because of a hardware problem, you may hear the dreaded "Chimes of Doom".

tab *output*: On manual typewriters literally a metal tab that momentarily stopped the travel of the carriage, used to create alignment inside the margins. Computers have expanded the function of the tab character. Now you can specify the alignment the text will take at the tab—right, center, left or decimal point—or attach leaders for better readability of tables. The tab key is also used to move from field to field in a database or where there are multiple text boxes in a dialog such as Page Setup. When exporting from a spreadsheet or database the tab is often used to delimit (separate) the cells in a row or fields in a record. You can see where the tabs are in a word processor by choosing a menu item such as "Show Invisibles" or "Show Paragraphs". A most useful character.

Taligent *industry*: A joint-venture by Apple and IBM formed a few years ago to oppose a common enemy, Microsoft. So far it has brought us the PowerPC chips (not a bad start) and soon will come the Pink operating system (or whatever code name it has these days).

tape drive *storage*: Hardware that encodes large amounts of data onto a type of cassette tape. Too slow to replace a hard drive, but relatively cheap backup.

TCP/IP *networking*: (Transmission Control Protocol/Internet Protocol) A set of rules for exchanging information between very different computers on a network. It has become a de facto standard.

TeachText *system software*: A very small 36K, word processor that comes with System software and allows you to read text documents. The Read Me documents on software disks are in TeachText format. TeachText for System 7 can view PICT documents and QuickTime movies. TeachText comes on many software disks, so it's easy to get more than one copy on your hard drive. You have no reason not to get rid of the duplicates.

tear-off *interface*: A menu or palette that you can drag down from the menu bar and leave floating on screen for access. Typically a torn-off menu or palette becomes a windoid.

telecommunications *communications*: The exchange of information in digital format (as opposed to voice) over phone lines.

telecommute *communications*: Working at home and sending your work to the office via your modem and fax. Hey, it's the lifestyle of the '00's !

terminal emulation *communications*: Telecommunications software that makes your computer impersonate a dumb terminal for the benefit of the other computer. A dumb terminal is just a screen and keyboard and little else.

termination *storage*: A kind of electronic shock-absorber that goes at the beginning and end of a series of peripherals (external hard drives, scanners, etc.) that are connected to a SCSI port using a single cable path. The rule of thumb is that the first and last device in a SCSI chain must be terminated to prevent the data from echoing back upon itself and getting jumbled up. Hooking up a SCSI chain can be tricky. The computer has an internal terminator, so that takes care of one end of the chain. But some peripheral devices have an internal terminator (to be switched on and off) and some don't and sometimes you have to dismantle the case to find out. An external terminator that looks like a connector without any wires may be necessary. A worse problem is that sometimes you have to rearrange the SCSI devices and terminators until everything works. That should keep the techies in business. One vital hint: be sure to turn off the power before disconnecting or connecting anything!

text box *interface*: The place(s) in a dialog box where you can type names, etc. Usually identified by a thin black outline and insertion point (flashing vertical bar).

text editor *applications*: An application or desk accessory that allows you to type letters and numbers, but which doesn't enable you to specify much formatting. The documents created by these are usually in text-only format.

text-only *storage*: A document which contains words but no formatting and which can be read my many different applications, even on other types of computers. A text-only file consists of ASCII characters only.

thesaurus *applications*: A compilation of words linked to each other. Synonyms and antonyms are linked, as are words similar in meaning. The granddaddy of them all is Peter Mark Roget's Thesaurus, first published in 1852, and unequalled since. There are electronic thesauri, but check out the original to enjoy a stupendous accomplishment. A thesaurus can also be a set of terms used for indexing or classification or a list of keywords.

third-height *storage*: A hard drive that is only about one inch tall — a perfect fit for laptops.

TIFF *output*: (Tagged Image File Format) A graphics format used for saving or creating high resolution bit maps and gray scale images. TIFFs were invented for scans. TIFFS can have from 1 to 24 bits per pixel and are often compressed. If the image is straight black-and-white, with no gray areas, save it as a line art TIFF. If the image has gray tones, such as a photograph or pencil or charcoal drawing, save it as a gray-scale or con-tone TIFF. Halftones only apply to gray or color areas. A halftone breaks a gray area into dots that a printer can print. If the image is solid black-and-white, you don't need any sort of halftone. If your scanning software can create special effect halftones that you want to use, or if your printer is non-PostScript compatible, save as a halftone TIFF. If there is no special effect halftone that you need, don't bother saving it as a halftone - let the PostScript printer halftone it for you on the way out. Yes, all PostScript printers can take any gray or color and break it into lines per inch. An Apple LaserWriter halftones at 53 lpi; a Linotronic 300 halftones at 105 lpi.

tilde *output*: The little squiggly accent you see over the letter n in some Spanish words. Obtained on the Mac by typing Option-N and then immediately typing a plain n. This is how many diacritical marks and accents are typed on the Mac.

title bar *interface*: The space at the top of a window containing the name of the window, a close box and usually a zoom box. Clicking on this and dragging moves the whole window. Under System 7's Finder, Command-clicking on the title in the title bar gets you a menu of the hierarchy of folders in which the window is nested.

toggle *interface*: Change from off to on, selected to unselected, or vice versa.

Token Ring *networking*: A set of rules, developed by IBM, for exchanging information between computers that are connected with cables. Token ring networks can operate at speeds of 4 or 16 megabits per second, which are many times faster than normal AppleTalk networks. The token is actually a packet (like a small envelope) that is passed from computer to computer around the ring. If a computer has nothing to say, it passes the token on to the next computer. This strategy eliminates data collisions, which is what happens when two computers talk at the exact same time.

TokenTalk *networking*: Apple software that lets Macs connect to a Token Ring network.

Toolbox *programming*: A collection of programming routines built into the Mac ROMs. It is the Mac equivalent of the IBM PC's BIOS but is far more complex. As the Mac has evolved since 1984, some toolbox routines (including additions to, replacements of and improvements upon the ROM routines) are provided in the System file.

trackball *interface*: A captured ball that can be spun continuously in any direction used to move the cursor around the screen. It also has one or more buttons associated with it.

trackpad *interface*: A small, flat rectangular pad that Apple developed to replace the trackballs in PowerBooks. It uses capacitance-sensing like the touch-sensitive buttons in elevators, and has 387 points-per-inch sensitivity. Like the mouse, it is a relative-motion device - when you raise your finger and put it back anywhere on the pad, the cursor stays put.

TrueType *output*: Outline font technology co-developed by Apple and Microsoft and introduced with System 7. TrueType fonts produce smooth characters in any size or style on both the printer and the screen. Unlike

bitmaps, TrueType fonts don't come in specific point sizes. Unlike fonts, TrueType fonts are not composed of two parts. With TrueType, the Mac's processor does all the work of scaling the font for both the printer and screen, unlike PostScript, where the printer's processor does the work. TrueType is standard in the Windows operating environment. TrueType's biggest drawback is that is not part of a complete graphics language like PostScript.

Type 1 font *output*: There are two distinct formats for PostScript fonts: Type 1 and Type 3 (Type 2 was a proposed font technology that never made it). At first, Adobe Systems, Inc. had a monopoly on Type 1 fonts; they used a secret algorithm to produce them and wouldn't let anybody else have the algorithm, so everybody else had to make Type 3 fonts. Type 1 fonts are PostScript, and they are especially designed to print well at "low" resolutions (like 300 dpi). They print fast and clean on PostScript printers, and they can be scaled with Adobe Type Manager (ATM) to appear very smooth on your screen. In 1990 Adobe decided to publish the secret algorithm so that everyone (meaning font manufacturers) could create Type 1 fonts.

Type 3 font *output*: Typefaces that are made without Adobe System's proprietary technology. They tend to be less expensive and they often don't print as cleanly and smoothly, nor as fast, as Type 1 fonts. They also tend to be more graphic in nature; that is, many Type 3 fonts are very decorative, with gray shades, elaborate fills and fancy shadows. Now that the Type 1 font technology is known, Type 3 fonts aren't being created much.

typeset-quality *output*: Equal to or greater than 1,000 dots per inch resolution. The resolution at which the eye can no longer distinguish the very small dots that make up the printed letters or graphics.

Unix *system software*: A powerful operating system developed at Bell Labs in the 1960's. Unix is multi-tasking, since it was designed in the days when one mainframe or minicomputer had many users. Basic Unix commands are the same on all computers, which is to its credit, but they are quite user-unfriendly. It was written in the language C, so it can be linked to lots of different computers. Apple's version is called A/UX, but very few people own it, since it's a memory and disk-space hog. Unix is the OS on the Internet, so it will be around for a long time.

update *industry*: A minor improvement in software or hardware, often just bug fixes. These ought to be free, since they are akin to warranty repair service on your car. Updates are indicated by the decimal component of the version number, as in 2.5 replacing 2.3. Hardware updates usually involve driver software.

upgrade *industry*: A major improvement in software or hardware. Software upgrades occur when the publisher issues a new version of the product and makes it available at a reduced cost to existing owners. An upgrade should include whole new features and possibly a new file structure. Minor fixes are called updates, and ought to be free. Upgrades are indicated by the integer component of the version number, as in 3.0 replacing 2.5. Hardware upgrades involve adding or exchanging existing equipment for newer, usually at full cost.

upload *communications*: Transferring a file from your computer to a remote computer, using a terminal program and a transfer protocol (for example, ZTerm and ZModem respectively).

user group *industry*: An organization such as BMUG of users of computers. They often have BBS's and some put out newsletters (boy do they!). You can join with like-minded individuals at regular meetings to hear about the latest developments, view software demonstrations, get help for problems, find out what your BBS pals actually look like (if you dare), express your views and schmooze.

utility *applications*: An application that does only a few things and which probably doesn't create a document. Most often utilities are applications which can perform maintenance functions on software and hardware (Norton Speed Disk), enhance workability (Suitcase II), or increase your computing pleasure (After Dark).

v.x *communications*: CCITT rules for transferring information over phone lines. By the way, bis (pronounced "biss") is Italian for the second version of something.

v.22 runs at 1200 baud, compatible with the Bell 212A standard used in the US and Canada.

v.22bis runs at 2400 baud. It includes automatic fallback to 1200 baud and compatibility with Bell 212A and v.22 modems. All 2400 baud modems for personal computers support this standard.

v.23 runs at 1200 baud with a 75 baud back channel. Used in Britain.

v.29 is the universal standard for 9600 baud fax machines.

v.32 runs at 4800 and 9600 baud. It includes automatic fallback to 4800 when line quality is poor. Note that the Hayes V-Series 9600 baud modem is not v.32 compatible.

v.32bis runs at 14400 baud with automatic fallback to 12000, 9600, 7200 and 4800. As line quality improves communications speed can also be increased to the next higher rate.

v.32TERBO is a non-CCITT standard for 19.2 kbps transfer, but it is not universally accepted by modem manufacturers.

v.FAST is a non-CCITT standard for 28.8 kbps data transfer.

v.34 is the protocol for 28.8 kbps modems.

v.42 is the CCITT standard for modem communication that defines negotiation for LAPM error control. It also includes support for MNP Levels 1-4 error correction.

v.42bis is an extension of v.42 that adds data compression to the v.42 correction protocols. Data transmission can be done in a number of ways since new error-checking protocols are being added on a regular basis. It can speed transfer by a factor of four, and is smart enough to not try to compress already-compressed files.

v.17 (not known if this is CCITT) an emerging standard for computer-to-computer fax transmission.

vaporware *industry*: Any computer product that is announced, and possibly even demonstrated at trade shows, but which is not released on time. Some programs continue for years at this stage. See Microsoft.

version number *applications*: The numbers after a program name which indicate its seniority. The higher the number, the more recent (and supposedly more capable) the program. Version numbers are typically given in ones and tenths, and occasionally in hundredths. It goes like this: "ProGram 1.4.3" . The 1 means its the first version to be released to the public. The 4 means they've added features and upgraded that first version four times, but not overhauled it. The 3 means they've updated this, fourth revision of the first version, three times because of bugs or incompatibilities. Before software is released to the public, it's version numbers are prefixed by a letter. Apple follows this pattern: D for development (the earliest versions), A for alpha testing (still working on major bugs or features), and B for beta testing (most features working, still smoothing out rough edges), and sometimes FC for "final candidate" stage.

video card *display*: The card that controls the video display on your screen. You can get different kinds of video cards for different kinds of monitors that display different levels of grayscale or color. Basic video output is built in to the motherboard on most Macs, but for a better video display you need a separate card. Some cards plug into the PDS slot, but most are NuBus cards. Video accelerators are another thing to have if your software requires frequent redraws of huge video files—programs like Photoshop—because they relieve the CPU from handling all the video display chores.

videotex *communications*: The whipping boy of the information industry, videotex used to mean any information service accessed through computers that displayed pages of textual information on demand. It has come to mean any computer-based information service that displays anything on screen. Videotex systems were once thought of as the way normal people would get around to using computers, but so far, no service calling itself videotex has made it into the big time.

virtual memory *system software*: Using space on the hard drive as faux RAM. Virtual memory, which requires a PMMU, is a feature of System 7, available via a control panel, or it can be utilized via third-party software. Some memory-hungry programs, such as Photoshop, have their own virtual memory schemes. When a program is launched, the Mac creates a swap file on disk that is equal to the memory space the program uses (the number in the box on the Get Info... window). Virtual memory is best reserved for programs you occasionally run that need more RAM than you have. You should buy enough real RAM for your day-to-day needs.

virus *applications*: A bit of code written to do such things as: corrupt your System file, lock you out of your own machine, eat your applications and documents; they can even wipe out the contents of an entire hard drive. Viruses have sub-species named for the way they operate, such as worms and Trojan horses.

Viruses travel from computer to computer via floppy disks, networks and modems. You don't always know you have a virus; they often have delayed reaction time, so that you continue using the sick application until one day it eats itself. You'll know you have a virus when things start acting funny on your computer. Windows may not function properly, printing might not work right, files may be changed, programs may be "damaged". If you can suspect a virus, get virus-protection software and disinfect your hard drive and every single disk in your house and office. Then never let anyone put a disk into your computer without checking it first. The best package is one called Disinfectant. It will kill any virus (except HyperCard script viruses since they don't live in the resource fork), and it comes with an INIT that quietly checks any disk that you put into your machine. It is Freeware (yes, that's right, it's FREE), written by John Norstad at Northwestern University. He rewrites the program every time a new virus is discovered. The current version is 3.5 . Disinfectant is available on many BBS's, from user groups and friends, and by mail from BMUG.

volume *storage*: All or part of a hard disk, floppy disk, tape drive or other storage device. If it appears on the upper right hand of the desktop and you can store files in it, it's a volume.

VT-100 *communications*: The lowest common denominator of computer terminals from the olden days. A screen and a keyboard. 80 characters per line on the screen with mandatory carriage returns after each line. Most telecommunications programs can emulate this type of terminal. Help, I'm stuck in the 1960s!

WAN *networking*: (Wide Area Network) Computers that are connected together across long distances and can exchange information. The computers need not be connected constantly to form a WAN. Nobody ever says this word, but people do write it.

WildCard *applications*: Code name for HyperCard.

windoid *interface*: The little windows used in some applications which have only a thin, light gray bar at the top and which float on top of the main application window. Tear-off menus typically become windoids.

window *interface*: The rectangular area that displays information on the desktop and through which you view documents. Every application (and every document) has its own window. You can open or close a window, move it around on the desktop, scroll through it if the document is larger than the window, and sometimes change its size and edit its contents. When windows are stacked slightly offset below and to the right of each other, they are said to be tiled. Some programs let you tile the windows automatically. It's been whispered that a very few insiders can create round windows on the Mac.

word processor *applications*: An application that lets you type on a computer and which has additional features including a choice of multiple fonts and styles, paragraph formatting and tab stops. A more powerful word processor has other helpful features such as automatic pagination, footnoting, indexing, style sheets, spell-checking, etc. My favorite is: no more white-out! If you want to get the most out of your word processor, read "The Mac is Not a Typewriter" by Robin Williams.

word wrap *output*: The automatic moving of words from one line to the next when the line gets too long for the margins. This is one of the nice features which distinguishes a computer from a typewriter. You can customize the word-wrap of a document by putting in hard and soft returns and soft hyphens.

workstation *hardware*: Bigger/faster/more expensive than a microcomputer, smaller than a mini.

wristwatch *interface*: The shape of the cursor when the computer wants you to wait while it does something.

WYSIWYG *interface*: (What You See Is What You Get) The state when the display on your computer screen matches the image on the printer page, more or less.

XCMD *programming*: (Short for external command) A kind of resource that can be inserted into an application to extend the application's capabilities by giving it new commands. Originated in HyperCard but now used in other programs like MacroMind. A program called CompileIt! by Tom Pittman (Heizer Software) can convert HyperTalk scripts into XCMDS and is a wonderful way to begin to learn the Mac Toolbox and get a taste of Pascal.

XFCN *programming*: (Short for external function) A kind of resource that can be inserted into HyperCard stacks to extend their capabilities by giving them new functions. They differ from XCMDs only in that XFCNs return some information when used.

XModem *communications*: A set of rules for sending documents or applications from one computer to another in small blocks over phone lines. Theses pieces can be either 128-byte or 1K. The latter is called "1k-XModem" or sometimes "fast XModem". XModem/CRC adds another level of error checking. The original XModem was written by Ward Christiansen as part of a CP/M program but was brought into the real world by Kieth Petersen. XModem and XModem/CRC are slow transfer protocols compared to many others available.

XTND *applications*: A software technology developed by Claris that makes it possible to have a set of file-format translators that work with many different programs. For example, if you have an XTND translator for WordPerfect/Mac files, any program compatible with the XTND technology can use that translator to open WordPerfect files without needing to have its own knowledge of what they look like internally. It's a simple, efficient, modular way of doing things.

YModem *communications*: A file transfer protocol developed by Chuck Forsberg that is similar to XModem except that it uses 1K chunks, allows for multiple-file transfers, and includes much better error-checking. Recommended over XModem for speed, reliability and features. Called "Modem7" by some people. Note: a number of communications programs incorrectly use the term YModem but actually send using 1k-Xmodem. This practice is not proper and will result in failure when used with true YModem transfer.

YModem/G *communications*: A variation on the YModem transfer protocol that does not check the information being received for errors. Rather, it expects the hardware to do the error checking. It should be used only with "reliable" phone lines and modems supporting MNP or the US Robotics ARQ hardware error-checking methods, or v.42/v.42bis. YModem/G is among the fastest protocols, with the exception of newer versions of ZModem. If your modem supports MNP or ARQ, YModem/G should be your usual choice.

ZModem *communications*: Another telecommunications protocol by Chuck Forsberg. It is a "streamlining" protocol which sends variable size blocks of data with CRC-32 error checking, but does not wait for acknowledgment from the receiving computer. It assumes data is OK unless a repeat request is sent for a specific block. Slightly slower than YModem/G and 1k-XModem/G, ZModem should be considered when MNP is not available, or another batch transfer protocol cannot be used. ZModem has the unique capability to resume file transfers that have failed.

zone *networking*: One part of a large network. Zones are networks connected to other networks, but the information moving around the network stays inside its zone of origin unless it is addressed to a device in another zone.

zoom box *interface*: The little box in the upper right corner of most windows which, when clicked initially under System 6 expands the window to fill all or most of the available screen. Under System 7 it will expand the window to show as many of the items contained within it as it can. When clicked a second time, this box contracts the window back to its previous dimensions.

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