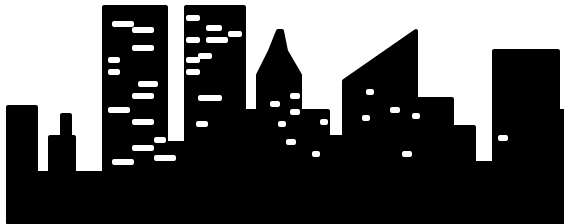


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The Editor's Soapbox

When the moon is in the seventh house...

Many realize that we have entered the Age of Aquarius and that the sun and the planets are perfectly aligned, - a portent, they claim, for profound change!

Those who use the Internet would say that the promise of the Age of Aquarius is being fulfilled and that change upon change, has already become reality. What we rarely discuss, or even more rarely contemplate, is how sweeping the changes will be or how pervasive the impact upon our daily lives.

The new toys of multimedia, Internet voice, big screens and cheap RAM provide legitimacy to the persistent mantra of up-grade, upgrade, and still more, upgrades! My computer has developed a mind of its own. Everytime I run regclean there are inexplicable displays on the monitor of *no!* in animated and colorful caps. The error messages become almost human pleas for help and often times a strange voice from the sound system wails off-tune "Don't lean on me"!

I admit to being weak and unable to resist the multimedia advertisements and confess to enjoying the amusing creations trumpeting IBM and Sprint. At the very least, a new art form has been born! As a commentary on our society, collective concerns and interests, there are few artifacts that do a better job than the daily onslaught touting computer hardware and software, - on and off the net. Further, when one succumbs, or caves in from overload, we become a willing party to a unique shopping experience!

I would think many times before dropping several hundreds of dollars on a fashion peripheral like a scarf or costume jewelry, but have no problem grabbing a few more sticks of memory, in case! I admit to giving up rationality four years ago when I re-placed a perfectly adequate 386 just to run WindowsNT ver.3.1, an incomplete operating system at best, and it's been an in-exorable downhill slide ever since.

What has inspired this deep and public exploration of self? Intel released the new MMX chip a few week ago along with the confession that this would depress the price of lower end CPUs. When I purchased my Pentium 133MHZ about a year ago for almost \$300 I didn't consider it low end or do I now! I found, to my delight, that my vendor now prices this item at \$155 when I ordered still another. Further, I confess to knowing more than a few individuals, suffering from the same malady, who have already installed 256 Meg of RAM. To do that at today's prices requires an investment of just \$158 per

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EDITORIAL BOARD

Herb Chong, Gregg Hommel, Lois Laulicht, Paul Williamson.

SUBMISSIONS and REQUESTS

Email :
editor@windowwatch.com
lois.laulicht@channell.com

Editor: WindoWatch
Valley Head, WV 26294

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Lois B. Laulicht and CCC of WV
Valley Head, WV 26294

A Lick with the Promise Coming Soon!

Word 97: First Impressions

© 1997 by Jack Passarella

Introduction

My Developer Edition of Microsoft Office 97 arrived in the mail amidst workplace chaos. Frantic network installations combined with an assistant's bout of pneumonia almost kept me from sinking my teeth into two weighty manuals and a whole suite of new applications. Well, to be honest, in the last two weeks I've only managed to lodge a molar or two into one of the manuals and one CD. Those developer's tools will have to wait just a little while longer.

If I'm known for one thing here at [WindoWatch](#), it's probably for my Microsoft Word articles. Although I'll have a few things to say about Office in general here and in other articles, this time out my focus will remain close to Word, specifically its latest incarnation, Word 97.

Beyond the Splash Screen

The first thing you notice about each version upgrade is the new splash screen. In case you're wondering, this one appears to be smaller, with a gray-blue and white and a notice that Word 97 is a Microsoft Office Family Member. Next you notice that Microsoft changed the appearance of the toolbar buttons and... they added cartoons.



(Super Dog)

Yes, cartoons. In the wake of Microsoft Bob’s descent into obscurity, Microsoft strikes again, giving you enough Office Assistant toons to fill a Saturday morning lineup on Fox Television. Actually, there are nine of them, but I’m sure the third party vendors are ready to crank out assistant theme packs any day now. And they’re all here to help you work smarter... with maybe a chuckle now and then. Well, I’m sure that’s their design purpose. Depending on your personality and disposition, your first thought will be either, “Gawd, that’s annoying!” or “Gee, isn’t that cute.” After witnessing their humorous, event-driven animations, your next thought — regardless of personality or disposition — will be, “How much of my system resources are these things using?”

Assistant Gallery

Microsoft Office defaults to loading Clipit, the animated paper clip assistant. If you want to change Assistants, keep your Office CD handy, you’ll need it in the drive to load any of the others. Once you load one, it will stay on your hard drive. Other than the paper clip, you can choose

from a dog, a cat, a bouncing red happy face, a Hoverbot, Mother Earth, Will Shakespeare, Al Einstein or the puzzle-pieces Office logo. The Office Assistant takes the place of the innocuous but less power-hungry Tip Wizard 'toolbar' that would monitor your work habits and suggest better ways to get the job done. A light bulb or lightning bolt icon would appear to alert you to a new Tip Wizard suggestion. All in all, the Tip Wizard was helpful, but far from entertaining and only remotely interactive.

The new Office Assistant appears in a small window, its title bar blank except for the "X" close button. *Bug Alert! I just right-clicked on the Assistant's title bar to Choose Assistant, so that I could review the gallery and write down what or who each assistant is supposed to be. As I was clicking on the Next and Previous buttons, my Windows 95 system locked up, which proves, if nothing else, that Word97 is not bug free. This was the system killing variety of screen freeze that requires a poke at the Reset button. No ALT+TAB or CTRL+ALT+DEL to the rescue. Of course, my attempts to duplicate the bug failed, which makes the bug a 'quirk' I suppose.* You can click on the Assistant's title bar to get a menu of choices, help with the current task or to search for an answer.

The Assistant window has three basic modes: modal, modeless, and AutoDown Mode. Modal means that you must react to the window before you can proceed. Example: replace existing version. Believe me, you're used to this type of 'wait a second' message. The messenger has just never been Super Dog before. Modeless just sits around, monitoring, now and then using the old light bulb icon to let you know it has a tip. You can safely ignore this type. The AutoDown mode offers a

context-sensitive tip on the fly and generally just goes away if you ignore it.

The best feature of the Assistant is that, if you are a developer of add-in products for Office, you can program your help system into this user-friendly alert and help system. You can program the balloon dialogue text, bullets, list boxes, text boxes, etc. You can even control the animation. Be warned: there are thirty-four different animations.

The Real Story?

What's up with these Assistants? My own opinion is that Microsoft's share of the corporate market for software suites is reaching a saturation point. Since these humorous Assistants are so out of character, I have to assume their design is to broaden the appeal of Office. I expect the Assistants to get prominent exposure on computer showroom floors and in future Microsoft television ads. Just to get the attention of the technophobic couch potatoes. Even though Microsoft Works is sufficient for most home users, I don't expect that to slow the onslaught of the marketing mavens in Redmond.

I have spoken to about a dozen people regarding the Assistants. The first instinct of almost all of these folks was to immediately shut them down. Real Office pros have no use for the frivolous or entertaining in their workday software. I decided to take a more patient approach. What do the Assistants really have to offer a new or experienced user? Does Super Dog earn his weight in dog biscuits?

For most users, the animation will probably grow old quickly, just like the novelty of a new theme pack for Microsoft Plus. I have to admit I chuckled the first time I sent a message in Microsoft Outlook and

watched Super Dog fly into the air, dragging a mailbag along with a startled mailman. I even smiled the first time Einstein (a.k.a., the Genius) had his cartoon thought bubble turn into hard copy when I sent a job to the Laser printer. If nothing else, the animations make the work environment seem less tedious. I just wish there were a way to turn off the event-driven animations after they had palled. The idle animations are just plain annoying and belong in video games. I don't need the distraction of Einstein rocking back and forth on his heels as I'm typing my email. Microsoft's solution is to offer you the Office logo Assistant, which is limited to a 'spin' animation when it has something meaningful to tell you. Be warned: the Assistants also come with sounds. For example, Super Dog barks to get your attention, Einstein writes in his pad. These, fortunately, you have the ability to turn off. *Note: you have the option of turning on Office sound effects when you install the suite. I said 'sure' just for the experience. I must say, however that I find all the binks and beeps and bonks that accompany such tasks as delete, to be a little intrusive. Again, individual tastes will rein.*

The tips are on the order of what the old Tip Wizard would have told you. Yet, I must admit there is a higher level of interactivity here than anything you would get from the Tip Wizard. You can select from radio buttons, enter a search question, type in a text box, etc. You need to be your own judge. If you want the Assistant without the distraction, choose the Microsoft logo. (This should also be system friendly for those with less than cutting edge technology on their desktops.) One caveat: I have noticed the light bulb tips sometimes seem to have nothing whatsoever to do with my current task. The tips often seem random in nature and, of course, when I click on them I wonder why the assistant 'interrupted' me in the first place.

If you decide to close the Assistant, you still have access to it by clicking on the Office Assistant button on the toolbar. The button is to the far right, a question mark inside a cartoon dialogue box. The F1 key will serve as well.

Toolbars... uh, Command Bars

I mentioned that Microsoft tinkered with your toolbars. This probably has something to do with visual ergonomics, but don't quote me on that. The buttons are now flat by default. They respond to what's known in the programming business as a MouseOver event by protruding, as if they were magnetically attracted to the mouse cursor overhead. When you click on the button, the button depresses. It's a new look, but definitely not worth the price of admission. Another feature mimics the Internet Explorer toolbar: double vertical bars can be clicked-and-dragged to slide the toolbar around.



But wait, Microsoft didn't stop there. If you do a TOOLS, CUSTOMIZE, you have the option of animating your menus. Your choices are Unfold, Slide, Random or none, which is the default. The slide animation mimics what Microsoft introduced in Encarta 96. The menu slides down from the menu heading, like window blinds dropping. *Unfold* is rather bizarre: you see the left edge of the menu options first, then the remainder of the drop down menu seems to untwist itself. I have mine currently set for

slide, because I like the effect. However, slower systems are probably better off foregoing this particular bell and whistle.

Note: the toolbars and menus are part of a combined object now known as a Command Bar. Go figure.

The top-level menu choices haven't changed, but their contents have. AutoText and Page Numbers are now on the INSERT menu where they belong. Under the VIEW menu, you have a few more choices. In addition to Normal, Page Layout and Outline, you now have Outline Layout and Master Document views. The subtleties of these escape me for now. Templates has moved to the TOOLS menu, and is now called Templates and Add-Ins

I have always turned off the rulers, finding them to be largely unnecessary and generally screen-cramping. I still have them turned off, but they have a unique feature, which reminds me of the AutoHide setting of the Windows 95/NT 4 taskbar. When your cursor nears the edge of the screen the rulers slide (no pun intended) into view. To get the full effect, leave the VIEW RULER option unchecked, but in TOOLS OPTIONS, click on the vertical ruler checkbox.

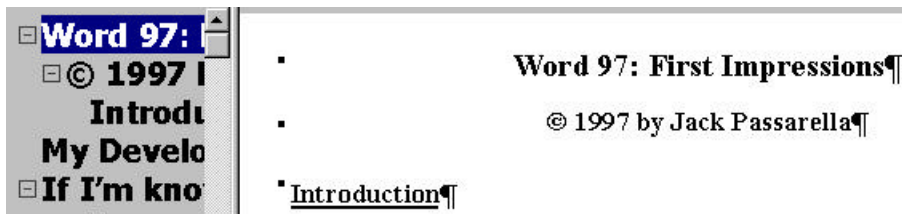
You can now enter a "comment" from the INSERT menu. This appears to be a suped up version of an annotation. The menu item icon looks like one of those sticky, yellow Post-It notes we all have plastered around our desks. Selecting Comment from the menu brings up the annotation window. But after you enter text and close the window, the cursor position is colored yellow. When you move the mouse cursor over the yellow spot, the text of the comment pops up like a ToolTip. **Note:** Excel for Windows 95 added this pop-up feature for Notes, except the note 'notation' in the cell is a tiny small square. This is in the user-friendly

category and beats double-clicking to view an annotation in a separate annotation pane.

Speaking of toolbars or Command Bars, the Microsoft Office toolbar has apparently been demoted. It is not even installed in the 'Typical' installation. You have to go hunting for it under 'Custom.' If you do install it, it will load automatically in the StartUp group, but how's this for low self-esteem: Whenever you close the Office toolbar, it asks if you want to remove it from the StartUp group.

A Worthy Addition: Document Map

Under that self-same VIEW menu, is a new choice: Document Map. This is a handy way to view your document. It manifests as a left vertical pane or frame, if you're used to the HTML world. It presents an outline of your current document.



Like Outline View, you can set the level of Headings that you see. The gee-whiz factor is that you can click on any of these milestone markers and instantly hop to that point in your document. For those of you with older systems, you can view the Document Map in Normal View as well.

You can adjust the width of the pane with the mouse, and scroll along it when the summary becomes longer than the screen display.

One ‘bug’ manifested. My custom Heading 3 styles fell lower in the outline hierarchy than some ‘normal’ paragraphs. I haven’t puzzled this out yet. I was able to correct it by selecting the offending paragraphs and reapplying the normal style. It seems like this feature needs some sort of refresh option.

Yet Another: WYSIWYG Style List Drop-Down

If you are used to selecting styles from the Style List Drop-Down box, you are in for a pleasant surprised. Previously, the only additional information you received from that drop-down list was a symbol to distinguish a character style from a paragraph style. Now you actually get a WYSIWYG representation of what each style looks like. Not only do you see the actual font and characteristics such as bold, italics, underline and color, you get a small icon showing the alignment and point size. Now this is the good stuff, all you Word stylists out there.

Normal	Times New
Heading 1	14 pt
Heading 2	12 pt
<u>Heading 3</u>	12 pt
Heading 4	10 pt
Normal	12 pt
<i>Body Text</i>	12 pt
Comment Reference	8 pt

And a Missed Trick: Font Drop-Down List

You're probably thinking: "Microsoft probably took this opportunity to make the Font drop-down list box display WYSIWYG fonts." Sadly, you would be wrong. My educated guess is that displaying all the installed fonts would cause a performance black hole. When you use the Style drop-down, it is responsive, almost instantaneous. However, if you hold the SHIFT key as you click on the Style list, there is a noticeable pause as all the available styles are generated in WYSIWYG format. Extend that reasoning to a system with several hundred fonts and you probably have a scenario where the average user assumes his system is locked up and reboots the machine.

Still, Microsoft could have given us an option, maybe a dialogue box to select a couple dozen of our commonly used fonts to discourage us from twisting the system into knots.

Avery Wizard

Office lets you install the Avery label wizard into your applications, but on both my Windows 95 home system and Windows NT 4 work system, the installation bombed near the end. The Avery icon did show up under the TOOLS and HELP menus, as well as on the standard toolbar, so it doesn't appear to have hindered the actual Wizard — other than turning Super Dog temporarily purple — but I haven't tinkered with that particular tool enough to vouch for it.

A Colorful Background

You now have the dubious ability to change the background color of your Word window. I experimented with a nauseating green and promptly switched back to plain old white. I suspect this feature has something to do with support for web documents.

Let Me Summarize for You

Word now boasts the ability to AutoSummarize your words of art. I was skeptical at first and remain so. I elected to have it summarize this article and place the summary in a new document. What Word seems to do is grab every heading along with a sentence or two from the text between the headings. I chalk this one up to marketing smoke and mirrors. Your satisfaction may vary.

Tables on the Drawing Board

One of the new features, which promise to be useful, is the table drawing ability. You can draw rows and columns in a table with a little pencil. You can erase lines with a little blackboard-style eraser. I proved a little ham-handed with the eraser, more so than with the pencil, but a little practice should take care of that. For those of you who have trouble drawing straight lines, don't worry: Word extends straight lines in the general direction of your mouse movement.

Finally, Word lets you align text vertically in table cells. You can also rotate text in 90-degree increments. The table toolbar also comes with an AutoSum button, similar to the function that has been available to Excel users for years. All of this amounts to a big improvement in creating tables in Word.



What the HTML is My Hard Drive Doing?

I had read the hype about Office being Internet-aware and web-compatible. And I noticed right away the Insert Hyperlink button on my Standard Toolbar. While I haven't had a chance to create/edit an HTML document in Word, I did load two of my web pages just to take a look around the new file format support.

I made the mistake of loading my longer web page first. It's about fourteen pages long and has about 100KB of graphics, maximum. This was on my Pentium Pro 180 with 32MB of RAM. I waited over five minutes while the document loaded into Word. The shorter page loaded in a little over two minutes. This is intolerably, inexcusably slow on that type of system. I had a frightening flashback to my 486SX days. But I'm better now.

The good news? Word displayed my background GIF, as well as the graphics and table. It even recognized the transparent property of the GIFs. It does not display animated GIFs, however. Also, you can switch to what amounts to a View (and Edit) Document Source window, but this took a long time to switch between.

Bottom Line? While I would give the display of HTML a B+, the load time was so bad I can't consider Word as my primary HTML editor. I gave up any thoughts of using Word as my Outlook email editor because of the sluggish load time. But the HTML loads make the email window appear downright snappy in comparison.

Word Art and Office Art

Along with HTML WYSIWYG support, Word Art (INSERT, PICTURE, WORDART) sports a major quality upgrade. I suspect this improvement was designed to work along with web page design, to produce graphics and impressive 3D logos. While, I may not use Word as my HTML editor, I know I will take advantage of the new art tools. More on these in future articles.



Grammatically Yours

Okay, I can't avoid this any longer. Another gee-whiz feature in Word 97 is the on-the-fly grammar checker. You might recall that Word for Windows 95 introduced the wonderful on-the-fly spell checker: a wavy red line appears under your typos, misspellings and double words. If you take care of these as sprout up like unsightly weeds, you virtually eliminate the need for an end of document spell checker.

Well, hot on the heels of that innovation, comes the on-the-fly wavy **green** line grammar checker. How is it? Well, not as revolutionary as

the spell checker, that's for sure. Everyone can agree on proper spellings. But grammar—especially in the world of creative writing—is subject to vast interpretations. As a rule, I loathe grammar checkers. Granted, Word offers you the ability to customize what rules get checked, but I've never met a grammar checker I really liked. Haven't we all seen how grammar checkers reduce the most inspiring speeches in human history to what amounts to corporate bland-speak? Sure I've intentionally made style choices most grammar checkers and English teachers would disapprove of, but I've also let a real flub or two unintentionally pass by because of my intransigence in this area. *Make no mistake about it: the grammar checker misses a few flubs of its own. For instance, the use of its versus it's was incorrectly flagged.*

From that intractable position, I've decided to leave the wavy green line grammar police on the payroll for a little while longer. Even in this article, a couple of subject-verb disagreements flared up. Here and there a mislaid comma was apprehended.

File Format Advisory

Be warned that Word's file format has changed to accommodate HTML and embedded hyperlinks. Although you can save in Word 6/95 format, the documents—by intention or design?—are saved in RTF (i.e., rich text format) with a DOC extension. This is bound to create havoc in mixed Word environment workplaces. You can install converters on the older versions of Word to read Word97 format, but I haven't tried this yet so be wary.

Free-Wheeling Documents

If you purchase the version of Office that comes with the IntelliMouse or purchase the mouse (this is the one with the little gray wheel between the two buttons) separately, you will be able to scroll through your document with ease. All Office applications support the wheel, as does Internet Explorer 3, Windows 95 Explorer and Windows NT 4 Explorer. I have the 'rolled' wheel set to scroll in three line increments and the 'clicked' wheel set to simulate a double-click, which appears thus far to be an ergonomic boon. It may also be the best solution for anyone who has trouble setting a double-click speed they can live with.

By using the wheel-button as a double-click alternative, I lose the ability to have CTRL+wheel-click zoom my document view. But I find the need to double-click far greater than my need to zoom my document. Score: Ergonomics 1, Gee-whiz Feature 0. You might think that rolling the wheel versus clicking it would present a sensitivity problem. But I find the pressure needed for roll increments as opposed to that required for a regular wheel-click to be easily distinguishable.

I have noticed certain Word 97 dialogue boxes with scroll bars completely ignore the wheel's scroll function. Once you get comfortable with using the wheel to scroll through documents, folder contents and web pages, it is slightly jarring when it doesn't work. So much for Office's complete compliance with the wheel standard...

I have noticed a slight difference in the aesthetics of the wheel's scrolling feature between the various Office applications. In Word and the various versions of Explorer, the scrolling motion is best described as jerky or digital, whereas in Outlook, the motion is smooth, a gliding scroll more analog in nature. Of course, the folks who brought us

Outlook also invented their own new-fangled, oversized vertical Command Bar.

A Model Object

Finally, and of significant interest for Word developers, WordBasic has finally been replaced by Visual Basic for Applications, version 5 if you're counting. Old WordBasic macros are pseudo-converted, but the more flamboyant variety will probably implode on impact. WordBasic becomes just another property in the grand VBA scheme of things. Even if old macros work as converted, they aren't optimized and should probably be translated into VBA5. You can continue to use WordBasic in its new VBA property sense, but secretly you'll know that your macros would work better in the new native tongue. Microsoft also notes that WordBasic will not be improved one iota to accommodate any new commands. It's a programming language stuck in time.

The WordBasic programmer has to reconcile himself to the idea that macros can now be stored in documents or templates, that macro text itself can't be hidden from view or editing, but that an entire programming 'project' can. Finally, I find it somewhat amusing and slightly disheartening that every comparison between WordBasic and VBA macros shows that the VBA macros to be considerably more obese. Is this an indication how each version of Office seems to be more bloated than the last?

Look at these examples from Appendix B of the *Microsoft Office 97 Visual Basic Programmer's Guide* on the WordBasic versus VBA equivalents for the bold statement/function:

WordBasic	Visual Basic for Applications
Bold 1	Selection.Font.Bold = True
Bold 0	Selection.Font.Bold = False
Bold	Selection.Font.Bold = wdToggle
X = Bold()	x = Selection.Font.Bold

I'm sure you'll agree that WordBasic is a trifle more concise.

To quote the text “The object model in Word 97 is extensive, encompassing approximately 180 objects.” Though it is daunting at first, you will find a graphical representation of the Word object model in the help system to ease your understanding. Note: VBA help is not installed in a *Typical* installation.

Converting Word to a model VBA citizen was necessary to truly integrate the entire Office suite. Finally, each application uses the same programming language. Creating a macro or a form—the decrepit old Dialog Editor is history!—launches the VBA5 IDE (i.e., integrated development environment) in a separate window. Microsoft avows that this separate application ‘environment’ shares memory space and resources with the Office application that launched it. I remain skeptical.

If you have only worked with WordBasic macros, the IDE window system is rather intimidating. I suspect the first time it rears its multi-windowed head on a new user's system will be the last. If you were leery of WordBasic macros, the VBA IDE will have you checking under the

bed twice as frequently. You can, however, continue to record macros. This is, unfortunately, just as inefficient as it ever was. Who knows? That might even be comforting.

There are some benefits to the whole VBA IDE. If you used the old Excel VBA, you no doubt witnessed the syntax checking, color coding, etc., that was sorely missing in WordBasic. You get all that and more. Microsoft extends AutoCompletion to the macro language. And after you enter the dot separator in the new commands, all the available methods, properties, etc. pop up for easy selection. That should help cut down on the amount of typing needed to apply bold to your text. For the recovering WordBasic programmer, Word Help does provide a conversion chart, something akin to a Spanish-English/English-Spanish dictionary.

I must admit I'm excited about the possibilities of creating engaging dialog boxes with the new Forms feature, which allows for the inclusion of ActiveX controls. Since I have been reading up on VBScript, which also makes use of ActiveX controls, the pieces seem to be falling into place. Much like that Microsoft Office puzzle logo. But more on the new macro language and forms in future articles.

Conclusion

That's the surface of what you can expect from Word 97. There are indeed some major changes to the program. Some of the most hyped developments will probably turn out to be the least appreciated; while improvements the Microsoft marketing machine gave short shrift to will pay for themselves day after day. My worst experience in an admittedly short period of time has to be the painfully slow HTML loads. On the

other hand, the Document Map is a pleasant surprise; as is the WYSIWYG style drop-down list and the three-dimensional Word Art.

I certainly feel that Word 97 is worth the street upgrade price of \$79. Performance seemed not much better or worse than the previous version on my home Pentium 75 with 24MB RAM or my office Pentium Pro with 32MB RAM. (*Unlike Outlook, which appears more sluggish than the Exchange client it replaces — and surpasses, at least in terms of functionality.*) Whether the entire Office suite is worth the combined upgrade price is another question. *Windo Watch* plans to tackle that very question in a separate article. Based upon what I've experienced so far, each individual application, and so the one most critical to you, will probably warrant the price. So you need to decide how many pieces of Office are critical to you.

Jack was asked to do a first impressions piece of Word 97 and he did so with a thoroughness we have learned to expect from him. As most of you already know, Jack Passarella does Word with skill and wit. He is employed by a commercial printing establishment and is a contributing [Windo Watch](#) writer.

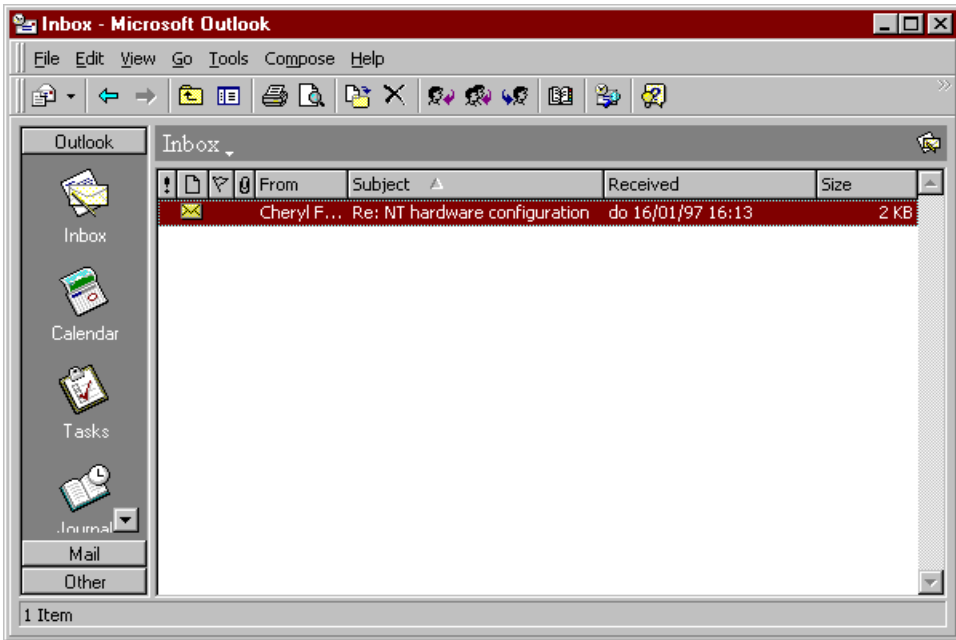
Microsoft Outlook: The New Universal E-mail Client?

Copyright 1997 by Stefan Assmann

With the release of Office 97, Microsoft not only updated its key programs, -Word, Excel, PowerPoint and Access, but also introduced a new component to the suite, called Outlook. Outlook is a PIM or Personal Information Manager. With this program, you can maintain a contact list, read / write / send / receive e-mail from a variety of sources (provided the proper service has been installed), make quick notes, schedule your appointments, maintain a task list and, finally, maintain a journal of all your activities.

Outlook is such a daunting program, that one article will simply not suffice to describe all the possibilities (and caveats!) of it. Therefore, I'll make a series of it. This first part will discuss the e-mail part of the program in detail, focusing on the Internet Mail service.

After having installed either Office 97 or Exchange Server 5.0, you're ready to begin. From the start menu, select Programs / Microsoft Outlook. You'll be greeted with a screen similar to the following:



We'll skip the description of the brand new interface for now, as this is a common feature of the entire Office 97 suite and will be described later. On the left-hand side, you'll notice a vertical icon bar. If you press an icon, the screen on the right-hand side and the top toolbar change accordingly. Right now, I'm in *e-mail mode*, the mode we're going to discuss here.

E-mailing in Outlook should be very straightforward and easy, according to the manual. Just press the *compose* button, the left-most one on the toolbar, and you're ready to go. You can use colors and various font attributes like type, size, bold, italic and such. When

finished, press the *send* button and the message will be sent.

Sounds easy, doesn't it? Almost too easy. Whenever something sounds too easy, I get suspicious. And for good reason in this case. You may write and send all you like, but when not properly configured, your messages will never get away, as our dear NT editor found out to her dismay.

What the manual doesn't tell you, is that you have to configure the e-mail component before you can do anything with it. This is a two step process:

- install the proper service
- configure it

Let's take this one step at a time, shall we?

You may wonder what a *service* is. A service is a piece of software that plugs into Outlook and enables you to connect to some e-mail system, be it the Internet, Lotus Notes, CompuServe, MSN or AOL. Outlook comes with a few services, but you'll have to integrate them with Outlook first. Here's how:

- open the tools menu
- select services

The following dialog box will appear:

WW



Here all the installed services are listed. In this case, I have installed Microsoft Fax, Exchange Server and Internet Mail. To add a service, just press the add button and a list of available services will appear. Just select the one you want, wait a few seconds and the service will be added (you might be asked to provide the CD-ROM). If you can't find the service you want, you might have a look on the CD-ROM with the browse option. Also, if you install some kind of e-mail service, be sure to install the *personal address book* and *personal folders* items as well,

otherwise you won't be able to do very much. Luckily, these are installed by default.

After having installed the required service(s), it's configuration time! From the displayed list, double-click the service you want to configure and press the *properties* button. A dialog box will come up with the appropriate options for the particular service. Let's configure the Internet mail service as an example: if the service has been added, double-click it to display its properties page, otherwise add it and then double-click it.

As you'll see in the following, the configuration is very straight-forward. The only problem that might arise is which server to put into the *Internet mail server* box if your ISP operates with two separate mail hosts like mine. Well, it's very simple.

The screenshot shows a Windows-style dialog box titled "Internet Mail". It has two tabs: "General" and "Connection", with "General" currently selected. The dialog is divided into two main sections: "Personal Information" and "Mailbox Information".

Personal Information:

- Full name:** Stefan Assmann
- E-mail address:** Stefan.Assmann@club.innet.be

Mailbox Information:

- Internet Mail server:** pophost.club.innet.be
- Account name:** year2811
- Password:** masked with asterisks (xxxxxxx)

Below the "Mailbox Information" section are two buttons: "Message Format..." and "Advanced Options...". At the bottom of the dialog are four buttons: "OK", "Cancel", "Apply", and "Help".

In this box, you'll have to put the name of the POP3 host, i.e. the name of the server you send your mail to. Of course, sending mail is only half the fun, being able to receive mail would be nice too, no? I thought so. Unfortunately, Microsoft didn't make this very clear. But do not despair! Reading the help files (Does anyone else read those but me?) provides the answer: just press the *advanced* button and enter the name of your SMTP server there.



there.

At this point you'll have to choose whether to work off-line or on-line. If you're connected to the Internet via a dedicated line, you can press OK now, and exit and restart Outlook. If, however, you're connected to your ISP via DUN (dial-up networking), you will change Outlook's default behavior of connecting to your ISP each time the program is started (unless you're as rich as dear Bill). To do this, simply select the *connection* tab and set the necessary options

Press OK a few times to come back to the Outlook opening screen and exit and restart Outlook. You're now ready to e-mail me your reactions to this article!

Before we try this however, I still have a few points to make. Tips & Tricks, if you'd like to call it that. Here we go:

If you want to transport your e-mail and address book to another computer, there's nothing simpler. All Outlook information is kept in two files: the first has a PAB extension (stands for personal address book), the second has a PST extension.

Be sure to compress your data once in a while. Whenever you do anything in Outlook, the PST file will get larger. To reduce it in size, select the tools menu, go to services / personal folders, select its properties and select compact.

If you have multiple e-mail addresses, you can use them all with Outlook. When you start Outlook, it'll ask you which profile you wish to use. To implement this, you'll have to create a profile for each e-mail address. A profile is the combination of services saved under a certain name. You can add as many profiles as you wish, and each profile can contain any number of services. To create another profile, do the following:

**Go to control panel and select mail and fax (win 95) or mail (NT)
The default profile will be shown with the services it contains.**

Push *show profiles*.

You'll see a dialog box with the name of your profile (probably *default Outlook* or something similar).

Knowing you, you'll probably want to select *add* and configure everything over again. As I'm kind of lazy, I do it differently. Just select *copy* and select the name for the new profile. A new profile will be created with most of the services already configured. All you have to do now is to change a few options in the Internet mail connector and your profile is ready to be used.

You can use Word in combination with Outlook to have the almost perfect e-mail editor, - an expensive one at that ! Just be sure to have the WordMail option installed when installing Office 97, using the custom installation for this. This option requires the ultimate in hardware, however, unless you like to become a caffeine addict in record time.

So, you like what you see and want to go using this beauty right away? Can't blame you, but be prepared for the following:

Outlook, like Office 97, requires moderately hefty hardware. Microsoft may try to let you believe that a fast 486 with 16MB will let you run Office, but the company doesn't tell you *how* it will run, does it? Well, one word: *Slow!* Users of Office 97 should have a fast Pentium and loads of RAM, the more the better. 32MB is a good starting point, but Outlook will still run like a dog, especially when using WordMail (see above).

The e-mail component described above still leaves much to be desired. Here's the rundown:

Having to exit and restart Outlook just to get your mail for your other addresses is bothersome to say the least.

Rule-based mail filtering, both incoming and outgoing, is only an option when you're connected to an Exchange server. However, Microsoft is reportedly working on a wizard for standalone users as well. Check the Office homepages for this.

Most extensions written for exchange (a.k.a. windows messaging) won't work under Outlook. Fine examples of this are the extensions Deming provides, most notably its preview add-on. Deming is working on an extension compatible with Outlook.

Outlook is still full of bugs. The nasty ones may have been ironed out, but the other ones remain. One example: when using WordMail, you can use everything Word provides, as long as you don't want to change the color of selected text.

In later installments, I'll talk about the other nice things you can do with this nifty program, answer questions that may have come up, and show you a few other neat tricks. I'll be back!

Stefan Assmann although new to [WindoWatch](http://www.stefan95.net), is not new to the World of Windows. He regularly beta tests a range of Windows applications. By profession he is the Chief Accountant at Burgmann BVBA, a Belgian subsidiary of a German based multi-national making all kinds of seals for the industry. A visit to his homepage will show you some of what this chap is about <http://www.stefan95.net>

Offered to the group by CHRISTOPHER GREAVES

“This statement best viewed with Internet Explorer Version 396 or higher.

WASHINGTON, D.C. (AP) - Senate Majority Leader Ray Noorda (P-Utah) today demanded that the Department of Justice order Micro-soft and Netscape to cease development of new Internet browsers, saying the ever-escalating battle for Internet dominance had sapped the American economy of its vitality.

In an impassioned speech before the Perotista-controlled Senate, Noorda, once a key figure in the information technology industry, claimed American workers and shoppers are so consumed with downloading new browser versions, Netscape plug-ins and Microsoft ActiveX Controls that they no longer have time to produce anything of value or to consume products. “We have been transformed from a nation of thinkers and doers to a nation of downloaders worried about whether we are keeping up with the technological Joneses,” Noorda said.

Noorda's comments came only a day after Netscape released Version 407 of its Navigator browser, which includes the ability to listen to AM radio from any laptop. Version 407 had just completed its 37-hour beta trial, while versions 408, 409, 410 and 411 are in develop-ment. Microsoft, which has been criticized of late for slipping behind

Netscape in the browser race, vowed to deliver Version 405 of its Internet Explorer 'before the next major religious holiday,' though company spokesman Jim Manzi declined to specify which religion the company was referring to.

Mark Gibbs, author of IDG Books bestselling Deleting Old Browsers for Dummies, said the continuing instability in the Internet market has virtually halted development of new applications. "How can you build to a platform that only lasts 51 days?" asked Gibbs. "The only apps being developed now are crossword puzzles and 3-D, rotatable crossword applets."

According to research firm International Data Corp., the average PC user now has sixty-two browsers installed. That has significantly limited the usefulness of the desktop machine because each "browser/operating system/object bucket/API repository" consumes a minimum of 1G bytes of storage and requires 256M bytes of RAM to operate (somewhat less if the touch screen option is disabled). Intel Corp. recommends the use of at least a 757-MHz Decadium processor to support current browsers. "There is no capacity left to run any other application," said IDC Chief Executive Officer Bob Frankenberg. "Our PCs, in essence, are simply containers for browsers."

In the late 1990's, it was hoped that the browser model of accessing information would actually allow for the development of simpler, less expensive desktop devices that would rely on applications and data housed on Internet servers. But the dream of the so-called Internet

device died with the release of Internet Explorer Version 231, which cracked the 800M byte storage requirement and supported some 257,462 ActiveX, DirectDraw, VB, DirectX, VisualX++ and InActiveX Controls.

“It's a shame, really,” said former Oracle CEO Lawrence Ellison, who was a vocal proponent of the Internet device idea at the time. "We could have been freed from the Web of Microsoft control, no pun intended. But Bill outmaneuvered us again,” added ‘Big Larry’ Ellison, who now runs the Used Cars 'R' Us operation on the Auto Mile in Redwood City, Calif.

In response to Noorda's call for federal intervention, the Justice Department issued an electronic press release available on its Web site www.bookem.gov

“We firmly believe the free market is the best arbiter of whether development should continue on Web browsers and servers.”

Herman Hollerith's Tabulators: Part 2

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Herman Hollerith was a successful and wealthy man in the 1890's. He had just finished an astounding job completing the 1890 census in America and, despite underhanded opposition in Austria, completed their census and the Canadian and Norwegian ones too. No country with pretensions to having a modern census could hope to complete it in a timely manner without the help of Hollerith's tabulators.

Even so, Hollerith was smart enough to know that there was only so much to be made doing census machines for governments. He had to begin selling to business too. He would, however, find that selling to private enterprise to be much more complicated than selling to governments. Rail barons and census wars, these two things would occupy much of the rest of Hollerith's life.

By the middle of the decade, America was going through a deep depression. Money was tight everywhere, and Hollerith wasn't getting as much business as he wanted. There was going to be a time in the not too distant future where Hollerith's company would be in trouble if he didn't find another source of income. He turned to the railroads.

Hollerith's machines had continued to evolve in the years after the census. Typical census questions were ones that had yes or no answers.

He adapted some of his machines to track numbers and do sums so that he could complete a census of American agriculture. Many parts were electric, but there were still mechanical parts and sometimes fussy in their operation. Hollerith had to convince American businesses in general and railroads in particular that they needed his machines to do business.

The 1880's and 1890's were the years of the rail barons. The railroads of the time were huge companies and through them channeled the lifeblood of one of the most vigorous nations on the planet. The larger companies had thousands of cars and engines and hundreds of stations. Millions of people traveled by rail each year, yet all of the paperwork to record and track everything was sorted and managed by hand. Those in charge had virtually no idea of what happened in their companies, how much money was owed, or even if their company was still solvent, for weeks after something changed. Like many businesses, however, the owners and managers had always done business this way and were strongly opposed to change. Hollerith learned enough about how railroads did their accounting to believe that he had a better way. He was unable to convince any of them at first.

Hollerith had to change his methods before he could take on the job of handling railroad accounting. The most important change he made to his system was how a punched card looked. The new card was exactly the size of the paper money in use at the time, exactly 6 5/8 by 3 1/4 inches. The punches were arranged in vertical columns across the width of the card. There were eighty columns of twelve rows. Printed on the cards were the numbers that corresponded to each row position. There were

lines up and down the card for each group of columns as required by the users. Thus it took little training for a human to read the card directly. His tabulators could be set up to accumulate totals from one set of columns, compare data from one field to another, and do some conditional processing to decide what fields to sum from. This form of the punched card has existed to the present day. Although few people now used punched cards for their intended purpose, many people still find the cards extremely useful because they fit in a man's shirt pocket and allow one to take notes with them.

Hollerith had difficulties with his first attempts to get railroads to use his tabulators. The first attempt, with Richmond and Danville, failed utterly. They wouldn't even consider using his machines. He tried next with the New York Central and the Pennsylvania, offering the use of his machines to prove that they could do the job before they had to pay. The New York Central was the first to agree and Hollerith couldn't afford to run two such jobs at once, so he worked with them. It failed miserably. Hollerith was perhaps distracted by his efforts to help with the Russian Czarist census in Europe, but nonetheless, the machines and Hollerith were tossed out after three months.

Hollerith was both stubborn and desperate. Even though he was nearly out of money, he redesigned his tabulators to be more electrified. Some included improvements were the use of magnetic detectors instead of mercury and dedicated adding machines for each field on a card. He managed to talk Central to run another test, entirely at his own expense. He would run the machines for one year free of charge. At the end of one year, if Central was still dissatisfied, he would remove his

machines. They could place an order any time they were satisfied with their performance. To finance this experiment, Hollerith sold most of his belongings, laid off almost all of his workers, and borrowed money from his mother-in-law.

What saved Hollerith's bacon during this trying time came in the form of an unlikely group called the Library Bureau. It was formed by the American Library Association to provide supplies and consulting services to libraries to improve their services. The deal was that the Bureau would pay for some new machines and royalties provided that they marketed, operated and maintained them for their customers, some of whom were not libraries. They became the first computer service bureau. One of the Bureau's first customers was the Traveler's Insurance Company. That deal, along with a request for machines from the French government to help their census created the income to keep Hollerith's company afloat.

New York Central was quick to recognize how valuable Hollerith's machines were to their business. In August of 1896, they struck a deal with Hollerith to rent his machines for \$5,000 per month. Hollerith agreed to maintain and supply the machines and, through the Library Bureau, supply the peripherals to handle the punched cards. They also agreed to buy new cards from Hollerith. However, the other railroads remained unconvinced. They were still not interested in using his machines for their record-keeping. It would take a few years before they would see the error of their ways.

Hollerith was saved from financial disaster by this arrangement, but was not out of the woods yet. His family had grown and he needed additional backing to keep his business running. In December, 1896, he incorporated in the state of New Jersey under the name of The Tabulating Machine Company, the world's first computer company.

Friends and acquaintances bought stock in the newly formed company and although Hollerith wasn't the CEO, he was the majority shareholder. Within six months after the date of incorporation, the company paid off its debts and issued a dividend. It also terminated its contract with Library Bureau. The company was going to strike out on its own.

By this time, it was necessary to prepare for the next census in 1900. The new head of census, William Merriam, could not give the job to Hollerith outright, but he did arrange for Hollerith to compete against the old chips system that was second best in the 1890 census competition. The chips had no chance. With contract in hand, the Tabulating Machine Company contracted to Taft-Pierce to build the parts for the machines. During this time several improvements were made to them. For the first time, a typewriter keyboard was used to activate the hole punches. Automatic feeders, sorters, and counters were added to the stable of machines. With this hardware, the 1900 census was completed with a far more complex set of questions with due dispatch.

Just after the census work was completed, the Tabulating Machine Company bought Taft-Pierce to ensure reliable parts manufacturing and delivery. Hollerith also set up an experimental accounting system for Taft-Pierce to prove that his machines could handle the burden of

automatic accounting processing. Two other companies who adopted Hollerith's tabulators soon after 1900 were Pennsylvania Steel and Marshall Field. Slowly, new customers were convinced of how automated auditing and accounting methods could improve their businesses, but there was no rush to embrace the new technology.

It was about this time that the railroads had their comeuppance. In 1902, the Interstate Commerce Commission ordered the railroads to provide more information than ever about how their businesses operated. The railroads were nearly unanimous in their protests. It was impossible to supply the information and have time to run a business, they said. The lone exception was New York Central. No problem, he said with a smile; we'll have the numbers. The other railroads were outraged and terrified. It was clear that New York Central knew a lot more about their business than they did about their own. In one fell swoop, it became impossible to operate a railroad in America without using Hollerith's tabulators. Almost overnight, the Tabulating Machine Company acquired more business than it could keep up with from companies who, less than a decade ago, saw no need to change how they kept track of their business. Just at this moment of success, though, there was trouble brewing in the wings.

Simon North had just been appointed superintendent of the 1910 census and he was distinctly unhappy with having the Tabulating Machine Company as the sole provider of equipment for the census. Although he signed a contract with the Tabulating Machine Company, he believed that Hollerith was overcharging and that the previously well-publicized savings was just propaganda. The timing couldn't have been worse for

Hollerith. Although he was scrupulously honest about all his business dealings, there was much popular sentiment at the time of how big business was strangling the country and doing essentially as they pleased while the common people suffered. Hollerith's company was a monopoly, even though fairly run. Simon publicly criticized the way the Tabulating Machine Company's contracts and garnered much popular support for his cause. This would eventually prove Hollerith's undoing. He became obsessed with these charges and with proving North wrong. North, on the other hand, was convinced that the government was being cheated.

The 1910 census was to be the battleground for these two stubborn men. The first skirmish in the war was a counterproposal authored by North to process the census data for far less than Hollerith was asking. He also hinted that he was strongly considering using other equipment to do the processing if Hollerith didn't agree. The Tabulating Machine Company's board agreed to enter negotiations for a new price. Hollerith was extremely depressed by this and even considered moving back to Germany from where his parents had emigrated.

North won a renegotiated interim contract. The second skirmish came with the announcement that the Census Bureau itself began funding a research effort to build its own census machines. Hollerith's original tabulating machine patents would expire in 1906 and the Bureau was free to copy those designs after then. On July 1, 1905, North threw out all the Tabulating Machine Company's hardware. Hollerith was furious.

By this time, the Tabulating Machine Company had no need of the Census business except for prestige. Business was booming after the railroads started using Hollerith's tabulators and almost every major company wanted to rent his machines. Even the stock market panic of 1907 failed to make an appreciable dent in his business. Indeed, Hollerith was unable to keep up with demand most of the time.

However, Hollerith was obsessed with the census contract and was willing to go to extraordinary lengths to get it. He called in every political IOU he was owed and even went to the White House to have North's research project canceled. He failed.

North, in the meantime, was making some progress. His machines were not as fast or as efficient as Hollerith's, but they worked. Some of North's employees included disgruntled former employees of the Tabulating Machine Company and some who had a personal dislike for Hollerith. North, in essence, was trying to circumvent enough of Hollerith's patents to build a competing machine. His engineers made good progress despite the legal handicaps. One innovation that Hollerith never made was the attachment of a printer to a tabulator so that results could be printed when ready. Enter a mysterious Russian with the decidedly un-Russian name of James Powers.

Powers had worked around the New York area for various electrical firms before joining the Census Bureau. Whatever his background, he clearly was a good engineer and inventor. He starting working in North's machine shop and in short order, designed and built an electric keypunch that looked like a giant electric typewriter. It was clearly

better than anything Hollerith had and he had to respond. Hollerith went to see his lawyers about patent infringement, but unfortunately, the law did not provide for the case of the government infringing someone's patents. Hollerith lobbied to get the law changed.

Congress actually passed a law that allowed for the government to be liable for patent infringement, but President Theodore Roosevelt vetoed it. The law provided for the court of claims to settle the matter. Hollerith protested the veto to Roosevelt, who passed the letter to his Commerce Secretary. Since North worked for the Commerce Secretary, Hollerith's letter was ignored. North started building Power's machines. In 1909, a new Commerce Secretary came into office and he was not sure that North was doing the right thing. Hollerith wanted North's head and started a letter writing campaign to ask for it. In May, he got it. North was replaced by Edward Durand. Hollerith celebrated the occasion, but it was to prove to be premature.

Durand immediately ordered a series of machines based on Power's designs from a company named Sloan & Chase. He also announced that the Census Bureau would modify some of the few machines Hollerith actually sold for the new census and claim they were new machines. This was illegal as it amounted to stealing the machines and claiming they were different. Hollerith threatened to sue. This led to a meeting between Durand and Hollerith's lawyer where Durand described some of the modifications he was making to the machines. The description of the changes were sent to a leading patent attorney where he decided that the machines did violate Hollerith's patents. Durand did not agree.

Tabulating Machine vs. Durand went to trial in 1909 before a judge without a jury. He ruled that the government had right to use the machines and that the alterations did not violate Hollerith's still active patents. Tabulating Machines appealed and won a month later, but it was too late. The Census Bureau had already begun preparations for the 1910 census and could not change hardware in midstream. The Powers machines were delivered late, ran slowly. They were unable to perform as well as Hollerith's machines ten years ago and proved that Hollerith was right, only his machines could do a proper job of the census.

By 1910, Hollerith was a man in his fifties and suffering from a bad heart. His doctors told him that he had to slow down. At this time, a man named Charles Flint entered his life. Flint was a man who specialized in consolidating businesses with similar markets and building more efficient and powerful companies by merging them. In 1900, he had formed a company called International Time Recording Company of Binghamton, New York, specializing in manufacturing time clocks for workers. The firm was dominating the industry by 1911. In 1901, Flint formed the Computing Scale Company of Dayton, Ohio. It was not doing well in 1911. He wanted to merge these two with another company to help shore up Computing Scale.

Flint and Hollerith talked. Had Hollerith been of better health or if he had been younger and still in sole control of Tabulating Machines Company, he might have done differently, but Flint and Hollerith eventually made a deal where Flint bought all of Hollerith's Tabulating Machine Company shares and proceeded to form a new company. With

the addition of the Bundy Manufacturing Company of Endicott, New York, the new company became known as Computing-Tabulating-Recording Company, better known as CTR, with offices in New York,

Ohio, and Washington, DC. Hollerith retired to the Maryland shore and lived out the rest of his life on a huge farm he bought. Although he nominally was still an engineering consultant to CTR, his creative days were behind him.

In 1914, CTR hired Thomas J. Watson as its general manager. Although Watson treated Hollerith with great deference, Hollerith never really liked the man and slowly parted ways with him and the new company. CTR was becoming Watson's company and with it came the passing of an era and the beginning of a new. Many of Hollerith's ideas continued in use through the twentieth century until the 1980's when punched cards finally faded from the computing scene. Virtual punched cards still live on, as any veteran of mainframe computing will tell you. Hollerith's company still continues on today as Watson made CTR a profitable and eventually booming company based on the tabulating business. In 1924, CTR changed its name to the same as its subsidiary in Canada, International Business Machines, or IBM.

Most of the research for this article came from a recently republished book: *Engines of the Mind* by Joel Shurkin, W. W. Norton, NY, 1996, ISBN 0-393-31471-5.

Herb Chong is the author of many articles that have appeared in [WindoWatch](#). He is also the Contributing Editor of the magazine and the creator and principle contributor to the popular [WindoWatch](#) Art Gallery

Service Pack 2 for NT 4.0

Should You or Should You Not?

Copyright 1997 by Linda L. Rosenbaum

To borrow a famous quote – that is the question! Unlike most of my other articles and reviews, this time I am not going to make a definitive recommendation. I believe this decision is up to each and every individual user. I have now installed Service Pack 2 for NT 4.0, but it took quite some time before I was ready to do so. And to be perfectly honest, I still am not convinced it was necessary. Nor do I know for sure that I will not run into any unexpected side effects. But before I get into the details of Service Pack 2 and what happened upon the release of it by Microsoft in December 1996, I would like to give you a bit of background on Service Packs.

As most of you know, NT is an advanced and very complicated operating system. There have been four retail releases of NT – versions 3.1, 3.5, 3.51 and 4.0. As one might expect, particularly given the wide variety of hardware and software in the marketplace, problems are always discovered after a retail release. Rather than making the end user wait until the next retail release of the operating system (and time frame between retail releases has varied quite a bit), Microsoft releases what are called Service Packs. Service Packs contain updated components/files after the retail release and are specific to each version

of NT. One can either download the Service Pack from Microsoft (via the Internet, for example) or order it on CD-ROM for shipping and handling costs. Depending upon the size of the Service Pack (and they can get to be very large downloads) will help determine which methodology for getting the Service Pack makes the most sense to you.

Service Packs are cumulative. That means the most recent Service Pack for a specific version of NT will contain all fixes from prior Service Packs, as well as any new fixes made to the operating system. A Service Pack is easy to apply from within Windows NT and changes only those files that were originally set up on the Windows NT or Windows NT Advanced Server system.

As one might expect, care should be given when installing a Service Pack. The following is taken from Knowledge Base article Q115161 (Service Pack Upgrade Issues):

Unexpected Results

As with any modification of system software, proper care should be taken in preparing for unexpected problems. For Windows NT, this includes having the following before you make any modifications:

- _ A tape backup of the machine's data.
- _ A backup of the disk configuration.
- _ A backup of the Registry.

If a serious problem arises after you install a Service Pack, do the following:

- 1. Use the Emergency Recovery Disk. This returns Windows NT to the original condition (*as installed* format).**
- 2. Restore the Registry.**
- 3. If necessary, restore the disk configuration.**
- 4. If appropriate, reinstall the Service Pack and any additional software.**

Note that the above Knowledge Base article was last modified on October 6, 1994. I think it is as applicable today as it was back then. The above helps point out two important aspects to keep in mind when or after applying a Service Pack.

One is that if you install or reinstall an NT component from the retail version (i.e. NT 4.0 shipping CD-ROM, for example), it is necessary to reinstall/reapply the most recent Service Pack on your system. If you do not do so, the component that has just been installed might not work, or some other part of your system might not work correctly. That is because you would now have a mixture of older and newer versions of parts of the operating system that might not be able to live or cooperate with each other.

Second, it might be necessary to reinstall customized Windows NT components or drivers provided by third party manufacturers/OEMs. If

you suspect this might be necessary, I would recommend you contact the manufacturer/vendor who supplied the customized NT components to you to make sure they will still work with the Service Pack you would like to install.

Another important point to keep in mind about Service Packs is that the version of NT that is available stays the same until the next official release of a version upgrade. A build number usually describes this. For example, the release version of NT 4.0 is build 1381. In other words, Service Packs are not incorporated into the operating system purchased at your local store or mail order vendor. Hence it may be necessary to add the most recent Service Pack as soon as the new operating system is installed.

I first started using NT with version 3.5, several months before the release of version 3.51. I was aware of the concept of Service Packs shortly after we got our new system (for my husband) with NT 3.5, but did not install any of them for version 3.5 of NT. My dealer who sold us the system did not feel the Service Packs offered anything that was critical to the proper usage of our new system. In addition, version 3.51 of NT was just around the corner.

I started following the release of Service Packs more closely after upgrading my husband's system to NT 3.51 and also installed it on my own computer. I started to see that retail releases of an operating system are not always as bullet proof as one would like. I also saw that later releases of software might not work properly in the retail release of the operating system. A good example of this was with Office 95. This

came out several months after the release of NT 3.51. There were some problems with Office 95 when run in NT 3.51. Service Packs for NT 3.51 helped to overcome these problems.

As a general rule, I tend to like to have the most recent version of any third party driver available installed on my system. I tend to believe it can avoid problems and can often include enhancements. However, I am also well aware that *newer or later* is not necessarily better and that many new versions of drivers have introduced new bugs or other problems that have required yet another version to fix. - again! I have tended to extend this philosophy to NT Service Packs, notwithstanding my preference to keep up to date with the most recent Service Pack. Even so, I have also taken to not being the first on the block to install it.

Service Pack 2 for NT 4.0 was released towards the end of December 1996. As soon as I learned of its existence, I went to the Microsoft FTP site <ftp://microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/ussp2> and downloaded it. It was a large download – 15MB! I also reviewed the readme file that comes with the Service Pack, paying particular attention to the list of fixes contained in this Service Pack. They are as follows:

4.0 List of Bugs Fixed in Windows NT 4.0 Service Pack 2

NOTE: Use the Qxxxxxx number that precedes the title of the bug fix to query the Microsoft Knowledge Base to find an article about that bug.

Service Pack 2

Q78303: Intermittent File Corruption Problem

Q142653: STOP Message Occurs Calling GetThreadContext/SetThreadContext

Q142654: Winsock Memory Access Violation in Ws2help.dll Or Msafd.dll
Q142655: Stop Message Appears After Deleting ProductOption Registry Key
Q142656: Internet Explorer 3.0 on RISC Computer Cannot Connect to Host
Q142657: Data Corruption on Windows NT 4.0
Q142658: Internet Information Server Runs Out of Memory
Q142659: Internet Explorer 2.0 Fails To Check the Country Code/Language
Q149903: File Manager Performs a Move Instead of a Copy
Q156832: STOP Message when IBM Warp Client Connects to Windows NT 4.0
Q102477: Draw Can't Leave Data in Clipboard After Closing Application
Q102710: MFX Draw: 16-Bit Device Drivers Incompatible with Windows NT
Q106503: FIX: SQL Server FixList for Version 4.20aK11
Q107422: Windows NT Resource Kit Vol. 1 - 3.5 Inch Disk Contents
Q108144: FIX: SQL Server FixList for Version 4.20b
Q136032: Systems Management Server Sender Packet Size Computation
Q140955: XCLN: Error When Opening Attachment in Client for Windows 3.x
Q142625: NETBIOS Defaults To 16 Sessions on Windows NT
Q142634: Multiple Processes Are Able to Open the Same Winsock Port
Q142641: Internet Server Unavailable Because of Malicious SYN Attacks
Q142648: STOP 0x00000024 in Ntfs.sys
Q142661: Cacl.exe May Report Errors when Handling Extended Characters
Q142671: Backup Fails on Certain Directories Due to Lack of Permissions
Q142675: CSNW Sends Packets Greater Than Negotiated Maximum Packet Size
Q142687: Windows NT 4.0 Not Able to Read Some Compact Discs
Q151989: Novell 32-bit Client for Win95/WinNT Doesn't See FPNW Volume
Q152273: DHCP Server May Give Out Duplicate IP Addresses
Q152346: Some DEC TLZ06 4MM DAT Tape Drives Not Recognized by Windows NT
Q153665: SPX Data Stream Type Header May Reset Unexpectedly
Q154784: Windows NT Operating System SNMP OID Incorrect
Q155117: Shutdown And Power Off Does Not Appear on Shut Down Menu
Q155883: NT 4.0 Breaks SNA Server 2.x Server Communication Over IP
Q156091: Access Violation with Long NDS Context in CSNW/GSNW
Q156095: Replace Command with Space Character in the Path Does Not Work
Q156276: Cmd.exe Does Not Support UNC Names as the Current Directory
Q156324: Device Failure Message with Microchannel Network Adapter

Q156520: Logon Validation Fails Using Domain Name Server (DNS)
Q156524: HP PaintJet XL 300 Does Not Print Colors, Only Black
Q156608: Err Msg: ôAccount Unknown--Account Deleted
Q156735: WOW Applications Stack Fault When Launched by a Service
Q156750: AddGroupNameResponse Frame from WinNT May Cause WFWG to Hang
Q156884: Problems Saving Event Viewer Log from Windows NT 4.0 to 3.51
Q156931: STOP 0x0000001E in Nwrdr.sys
Q156958: Serial Service Won't Stop with Serial Printer Installed
Q156989: Multiple Processes Are Able to Open the Same Winsock Port
Q157279: Nwrdr.sys Fails Reading File with Execute Only Attribute
Q157289: Memory Leak Using RegConnectRegistry API
Q157621: Personal Groups Not Visible If %Systemroot% Is Read-Only
Q157673: Policy Not Updated on Workstation
Q157979: NT/RDR: "Access Denied" with Windows NT 4.0 Ntbackup
Q158142: WM_DDE_EXECUTE API Causes a Memory Leak in the WOW Subsystem
Q159075: Compression is not supported on Quantum 4000DLT
Q158994: NT 4.0 Fails to Replicate to Backup Domain Controllers
Q158387: RAS Server Cannot Use DHCP to Assign Addresses w/ PPTP Filtering
Q158587: 16-Bit Named Pipe File Open Leads to WOW Access Violation
Q158682: Shortcuts Embed Admin\$ in .lnk File
Q158706: Shortcuts Embed Admin\$ In .LNK File
Q158707: DDE Destroy Window Code may Stop 0x0000001e in Windows NT 4.0
Q108261: Windows NT Hangs on Shutdown with Certain PCMCIA Devices
Q158981: IBM Thinkpads 760ED and 760ELD May Hang During Shutdown
Q159066: A Client Crash May Prevent an NTFS Volume Dismount
Q159071: NTFS Does Not Prevent a File Deletion During Rename
Q159075: Compression is not supported on Quantum 4000DLT
Q158796: MAC Clients Connected to an NT Server May Intermittently Appear
Q149817: STOP 0x0000000A and STOP 0x0000001E in Isotp.sys
Q141375: Winstone 97 May Fail on Windows NT 4.0
Q141708: RAS Client IP Addresses Not Returned to Static Address Pool
Q142686: First Line of Print Job Lost When Printing Using Lpdsvc

Q142847: Bugcheck 0x1e Caused by Isotp.sys Driver
Q142872: Length of PDC Name May Affect Performance on a Domain
Q157494: PPC 4.0 Cirrus Driver Fails to Redraw & Fill Objects Correctly
Q148602: Running SNA Server 2.11 on the Windows NT 4.0
Q156746: Print Jobs Are Deleted When Printer Is Resumed After Restart
Q150815: Windows NT May Fail to Boot on Toshiba Portable Computers
Q152455: File Manager Can Only See 32 Volumes of NetWare/FPNW
Q152474: Window Socket Application Failure with Connection Reset Event
Q154556: Delegation Requires a Stop and Restart of the DNS Server Service
Q156578: Cannot Cancel Print Job on Windows NT 3.51 Shared Printer
Q159107: Access Violation in Addatom Inside KERNEL32.DLL
Q142903: Windows NT Ndis.sys and Netflx3.sys Performance Improvement
Q160583: Windows NT 4.0 With More Than 4 Processors May Stall and Reboot
Q159971: SetTimer() API causes Memory leak in the WOW subsystem
Q159972: WinNT 4.0 May not Return a Valid Response for SMB Search Command
Q160015: 2D Vector Performance on WinNT 4.0 Slower Than on 3.51
Q160055: Warning Event ID 4010 Generated on Windows NT LPD Server
Q160189: CSNW can't see more than 32 volumes per server
Q159095: STOP 0x0000001E in Win32k.sys When Exiting Applications
Q160328: Internet Explorer 3.0 causes NT 4.0 to Blue Screen
Q159449: DNS Server Glue data gets deleted
Q160601: Bad Parameters sent to WIN32K.SYS May Blue Screen Windows NT
Q160603: No Output from DBMON Using OutputDebugString While Debugging
Q160604: Access violation in security!SspQueryContextAttributesW
Q160606: Performance enhancements for SQL Server under Windows NT
Q160610: READ_REGISTER_ULONG Doesn't Preserve ULONG Semantics on Alpha
Q160653: NTFS Fails Assertion Under High Stress During Transfer
Q160190: RasSetEntryProperties does not save a full path script name
Q159205: HOTFIX: SFM file Type and Creator properties invalid
Q160657: 16 Bit Version of VB4 May Hang Windows NT 4.0
Q159108: SMP Full Duplex Adapter Configuration May Cause Blue Screen
Q159109: ExitWindowsEx Does Not Work With NEC Power Switch Service

Q159110: CDFS Does Not Complete IRPs Correctly
Q159111: Multiprocessor Machine Hangs Under Stress Using HALSP.DLL
Q159129: OpenGL Access Violates with Invalid OpenGL Context
Q159910: Memory Corruption on a Windows NT Alpha platform
Q159204: HOTFIX: IoCompletionPort causes blue screen crash
Q159594: Missing EE FontSubstitutes in Registry
Q159206: HOTFIX: Reactivation of paused print queues deletes print jobs
Q159311: NT4.0 RAS not releasing static IP Addresses
Q159315: NT 4.0 RAS Server does not release static IP addresses
Q159347: Using NetBEUI for RAS Connector on Windows NT 4.0
Q159447: HOTFIX: Applications testing for directory existence fail
Q159098: NT 4.0 resource Kit utility "Remote Console" client fails
Q159203: HOTFIX: Unattended install prompts for new IP if zero in address

For the latest information see:

Q150734 List of Fixed Bugs in Windows NT Version 4.0

The first group of fixes listed were actually first included in Service Pack 1. I found this list to be daunting! **In the readme, however, I learned for the first time, that Microsoft incorporated the ability to uninstall a Service Pack.** This option must be selected during the initial install phase of Service Pack 2. It also takes up a hefty amount of hard drive space. The readme file indicates that an extra 60MB is needed, but based on my experience and that of others, it seems more like 20+ MB is taken up by the uninstall directory which contains copies of the older versions of all replaced files. I decided to hold off actually installing the Service Pack. I did not want to be the resident guinea pig and I also preferred to wait until after doing a complete backup.

Much to my surprise, I quickly saw evidence of other early Service Pack 2 installers running into problems. These ranged from BSOD's when formatting floppies and in several other situations to not being

able to connect to an ISP when using DUN. It was at this point that my family and I left town for a long needed vacation...

When I returned, it seemed that either workarounds or the causes of the problems with Service Pack 2 were being discovered. Having anti-virus software running in the background was causing some of the BSOD's. The DUN/RAS problem was cured by a registry change. It was not long after that two hot fixes for Service Pack 2 appeared. That's right – a fix for the fix! Both of these hot fixes are available at ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/hotfixes-postsp2. The first is called the *Kernel fix* and it is the one that fixes the problems when running antivirus software. It is described in Knowledge Base article Q141239. The second is the *RAS fix* and fixes the problems when trying to connect to certain types of ISP's. This fix is described in Knowledge Base article Q161368. In addition a problem whereby on the first reboot after an install of SP2, NTFS.SYS becomes corrupted, necessitating a complete reinstall, was determined to be caused in certain circumstances by the way the Service Pack 2 files were zipped up for distribution. Microsoft has replaced the older .exe file with a newer version, which corrects this particular problem. The underlying files remain the same and do not include any of the hot fixes just described.

After a rereading of the lengthy list of fixes included in Service Pack 2 as well as strong encouragement from others who were using it quite successfully with both hot fixes, I decided it was time to give it a try. I did select the uninstall option and I most definitely had performed a full backup first. I also applied both hot fixes right away. I am happy to

report that so far, Service Pack 2 is performing just fine on my system and that I have noticed at least one thing it did fix. My fix was minor, but it was mentioned in the lengthy list of fixes. It's nice to see evidence of an upgrade!

During the week of January 13, 1996, Microsoft announced that it has decided to open future fixes to greater security. According to Enzo Schiano, product manager at Microsoft, as reported in the January 20, 1996, issue of InfoWorld:

“We're going to essentially do a formal beta process that will have the service pack beta released and tested by ISVs and customers, and we will get appropriate feedback to be reviewed.”

I advise any NT 4.0 user to give Service Pack 2 a close look. Measure its benefits against its potential risks. And if you do decide to install it, first do a full backup (or two or three) and make sure you also apply both hot fixes.

Linda Rosenbaum lives and works in a suburb of New York City. She is an assistant controller at the World Headquarters for a large global manufacturing company. She has two young children and a husband whose full time job is to take care of the kids. When not working, Linda can be found on a variety of online services and the Internet reading and writing about her experiences with NT, networking, and multimedia. She maintains a home network of four systems using a combination of NT and Windows 95. Linda is the NT Editor for [WindoWatch](#) and can be reached via Email at either lindar@cyburban.com or 71154.2622@compuserve.com.

A Call to Take Action!

A Fast Forward from Jon Helis

“I received the following from another list. After we determined that it was not a hoax, we recommend that it be included in the next issue of [WindoWatch](#).” Jonathan Helis, KB5IAV -Baton Rouge, Louisiana,

**From: Al Loeschman <wd5iqr@cy-net.net>
Subject: Re: FCC Imposed Charges**

I am writing you this to inform you of a very important matter currently under review by the FCC. Your local telephone company has filed a proposal with the FCC to impose per minute charges for your internet service. They contend that your usage has or will hinder the operation of the telephone network.

It is my belief that internet usage will diminish if users were required to pay additional per minute charges. The FCC has created an email box for your comments, responses must be received by March 24, 1997. Send your comments to isp@fcc.gov and tell them what you think.

Please forward this email to all your friends on the internet so all our voices may be heard.

**Thanks for your time,
Elan Amram
DTC SuperNet**

WW

The following was captured from the FCC homepage buried in their press releases.

Last December, the FCC invited people to comment on the issue by March 24 and set a deadline of April 23 for replying to those comments. After that, according to FCC procedures, the agency must issue of Notice of Proposed Rule Making, giving anyone the opportunity to suggest how phone companies and ISPs should be treated under the law. Later, the FCC would take action, issuing a regulation that has the force of law. Even then, there would still be an opportunity to file a petition for a change in the rule.

Editorial Note: This is an attack primarily upon your local ISP and the rock bottom rates you are being charged. If enough people email the FCC, their messages will not be ignored by the commissioners. I urge you let them know what your feelings are in this matter. Jon can be reached at Jonathan Helis kb5iav@intersurf.com lbl

OS/2 Voice Assist - A Brief Look

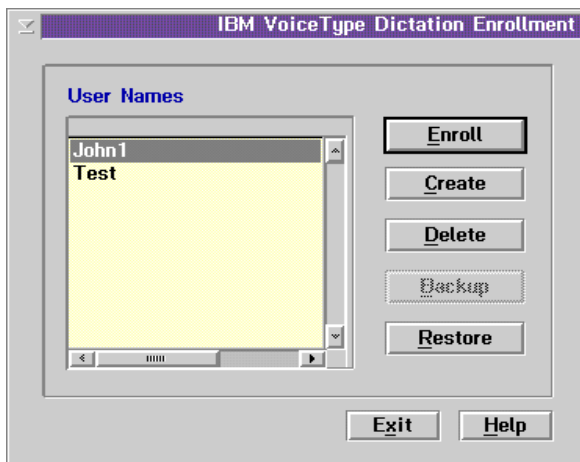
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Several issues back, I wrote about some of the features of the OS/2 Warp 4.0 beta release. Even though IBM ignored our requests for the final release version for evaluation purposes, I promised then to describe IBM's voice-activated navigation and dictation system and here it is. To the best of my knowledge, this is the first such program furnished as a part of an Operating System. (I made a similar statement about Warp 3.0 having the first integrated Internet connectivity, and a reader told me that Windows NT had that feature first. Nonetheless, I still think IBM was the first to provide as complete an Internet package with an OS.) At any rate, here is a brief overview of VoiceType.

But first, a reminder about the hardware I used. I ran the Warp 4.0 beta on a 166 MHz Pentium machine with 48 Mg ram, using Andrea's ANC (Active Noise Cancellation) microphone-headset. This unit is approved by IBM for voice assist applications.

IBM's voice assist module consists of two separate components: A voice-activated navigator, called VoiceManager, and VoiceType, a routine that makes it possible to write a document by simply dictating into a microphone. Before either component can be used, however, you must establish a User Profile. Multiple profiles can be set up. Profiles make it possible to train the program to recognize the

different speech accents and inflections of the people who will be accessing the program . You establish a User Profile by clicking on Programs | VoiceType | Voice Manager. The voice recognition software loads, and a User Profile dialog box appears.

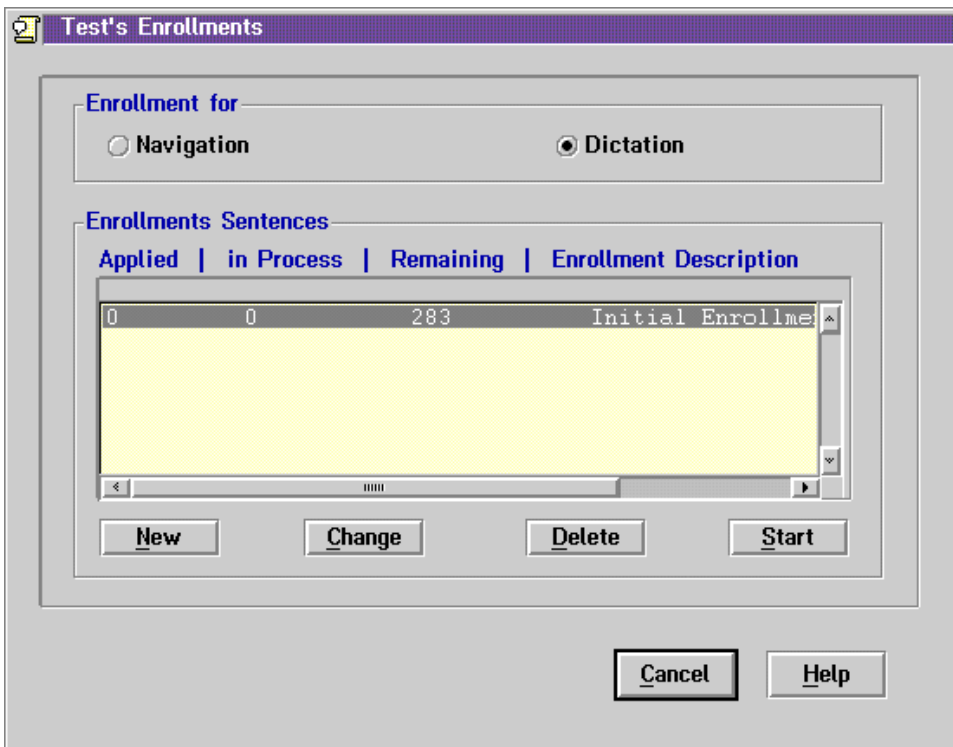


Here, you enter a name for the initial profile. An icon bearing that name is then added to the OS/2 Desktop. The next step is Enrollment.

Some users claim you can bypass the enrollment procedure, during which the software adjusts to your voice, but I found that it helps considerably,

especially for VoiceType, to spend the time needed to *train* the software. Enrollment is a two-step process.

Both Navigation and Dictation should be trained. The user has a choice of doing either a limited or a full enrollment. The difference lies in how many exercises are completed. It has been the experience of many using other Voice systems, that thoroughness of training the software directly affects the long terms success and utility of this and other voice recognition systems. There are, unfortunately, no short cuts.



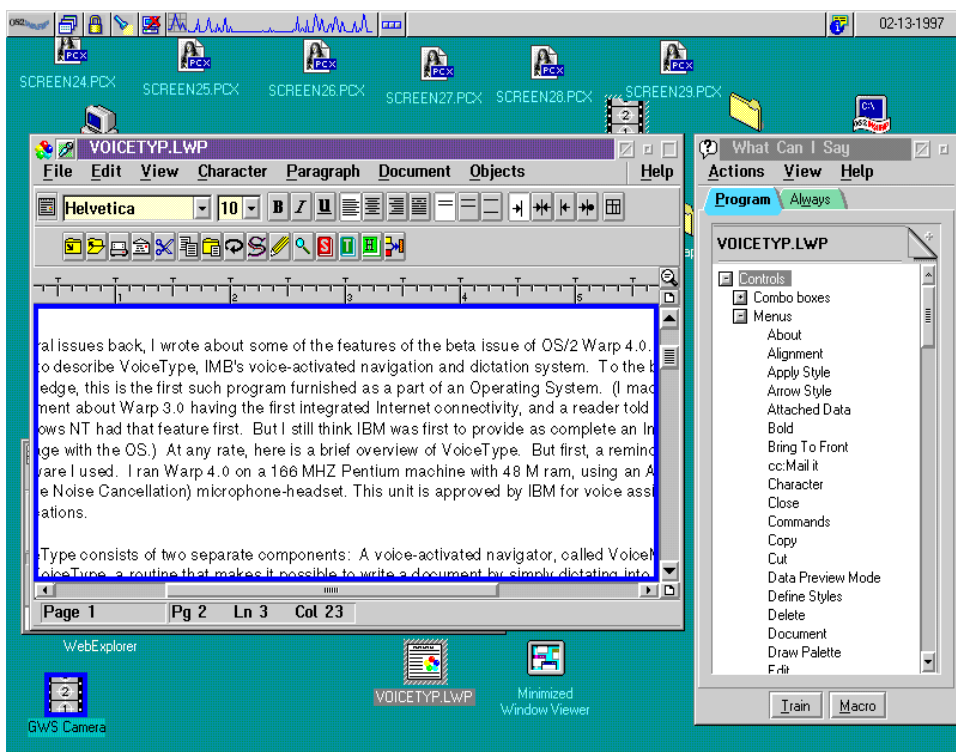
Each exercise consists of a reading a sentence shown in a dialog box - some containing quite a few words. When you finish a sentence, words the program failed to understand are highlighted in red, and another dialog pops up with advice on possible problems. Here, you can ask to have the sentence read back through the speakers, so you can spot obvious errors, such as distortion caused by speaking too loudly or unfortunate placement of the microphone. The process can be halted after fifty exercises during the Navigation learning phase.

IBM considers this an adequate sampling of the 120 exercises that make up the total. There are 283 exercises to complete for the VoiceType enrollment, and I found this to be rather time consuming. I probably spent several hours completing these exercises. I could have stopped at the half-way point, but I wanted maximum accuracy for dictation.

I discovered that mike placement is somewhat critical, as is input level. The mike should be slightly to the side of your mouth otherwise it tends to pick up breathing. Warp provides a helpful meter in the dialog box to show the recording level. You have to try and keep the input level within the central green-colored section of a bar graph display. I fiddled with these adjustments until most words were recognized on the first try. Once the enrollment is completed, Warp must compile the results, a process that IBM advises can take several hours on a slow computer.

IBM claims that the program has a 10,000 word vocabulary, with the user having the option to add as many as 32,000 additional words. Special-purpose add-on vocabularies are available for medical and legal usage. One reason a lot of memory is needed is because most of the vocabulary has to be held in memory. Additionally VoiceType has to analyze grammatical patterns to determine which word you intended when it encounters sound-alikes, such as *to*, *too*, and *two*. This required considerable processor power.

Here is how VoiceAssist works. Once a User Profile is created, clicking that Desktop icon loads the voice recognition routines. Two new windows, *What can I Say*, and *Voice Manager*, open on the Desktop. The first window changes dynamically, according to what application has *Focus*. More on this later. It shows a list of voice commands that are valid for the chosen application. For example, when the focus is on the IBM Word Processor I am using to prepare this article, some of the voice commands available are **APPLY STYLE**, **BOLD** and **COPY**. By the way, all voice navigation commands have to be spoken as a single word. **JUMP TO** is spoken as **JUMPTO**.



The *What Can I Say* Window also has a tab, that when clicked, brings up a list of words and phrases that are always available within Warp. These include global words, such as **ENTER**, **BEGIN**, **DICTATION**, and **DESKTOP**; so-called *Jump to* values, which take the focus to other Desktop Objects, such as *Drives*, *OS/2 System*, and *Toolbar*; and finally, movement commands.

Now, about focus. The Desktop Object or portion of a window that voice commands are to operate on is said to have the focus. This object is enclosed in a bright-blue border while Voice Manager is active. The focus can be changed either by clicking on another object, or by using voice commands to go to that object.

As an example, I had the focus on this article in the word processor. I wanted to open the Connections Folder, which is a Desktop Object. I said **DESKTOP**, which changed the focus to the Desktop itself. I then said **CONNECTIONS**. The blue border moved to that Object. I said **OPEN**, and the Connections window appeared. I found this whole process rather fascinating, especially when I tried it in Netscape Navigator for OS/2. I had already been spoiled, since I had opened my ISP connection by telling Warp to go to that Object and open it. I then sat back and said **DIAL**, at which point I was greeted with the familiar sounds of my modem dialing and negotiating a connection. All that remained, was to say **NETSCAPE**, **FAVORITES**, **MOVIES**, **SLEEPERS**, with suitable pauses for each command to execute, and then, after the usual delay, was the opening page of that film's Web presence. Moving to the *What's New* hyperlink was as simple as saying **WHATSNEW**. I was ushered there without ever touching the keyboard!

Yes, I am impressed by this technology. But there's more. There is also VoiceType, the dictation portion of the package. I was a bit disappointed with this software. I successfully completed the lengthy enrollment process once, but then a file corruption problem forced me to start over. I thought I had set up VoiceType successfully this time, but the text I dictated was nowhere near correct.

Upon further checking, it appears that the compilation phase of enrollment had failed. Therefore, I can only report what the program is supposed to do but can't describe it from first-hand experience.

Briefly, you can dictate text into any application that accepts clip-board input. With Voice Manager active, the phrase **BEGIN DICTATION** brings up the Quick Dictation window. Words appear in this window as you speak them. **STOP DICTATION** ends the process.

You can correct errors manually. When you are satisfied with the results, saying **SEND** places the text into the OS/2 Clipboard. For quickly generating small files, there is a VoiceType Dictation window with a minimal text editor designed for speech input. Macros can be constructed to quickly add standardized greetings. For example, you might assign *Sincerely yours, John Doe, President* to a macro that is invoked by speaking the word **WHIZZLE**.

Hopefully, this brief rundown has given you a sense of the basic features of IBM voice assisted technology. The navigation portion is exciting, and certainly holds potential for handicapped individuals.

The voice dictation part is still somewhat crude, demanding a lot of preparation time, and requiring that the user speak more slowly than is customary for dictation. It does, however, give us a peek into what we can look forward to when this technology matures. Once mastered the present state of the art seems at least as useful as much text scanning software, where users are resigned to doing a certain amount of manual clean-up.

This completes my Warp overview. I trust it has been of some interest to fellow Windows users.

John Campbell looks forward to shedding one or two of the multiple operating systems he has on his computer once he completes this task. This is his second adventure with OS/2 with a number of articles written for [WindoWatch](#) in this genre. John is a contributing writer for [WindoWatch](#). We look forward to hearing about the next mountain he climbs.

Building Your Home Computer

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Recently I had the fine experience of building a home computer for myself and my family as a Christmas present. It was about time to replace the old 386 and I had been planning it for a few months, shopping for components and waiting for prices to fall enough to meet my budget level.

I originally bought the 386 for Christmas in December 93 and paid just over \$1,500 for it, - a pretty good price at the time! For that I got a 386DX25, 2 MB ram, 85 MB HD, 3.5 and 5.25 floppies, 14" SVGA monitor, a video card with 512k ram and a keyboard. The video card was not very good and the vendor replaced it with a Trident 1 mg card.

Memory at this time was priced at \$50/mb. I used mostly DOS programs, so windows ram was not too big an issue. I never would've thought that WordPerfect 5.1 would be upstaged by anything that ran on Windows! So, I figured this machine would give me a few years of service.

I was right and I was wrong. It'll still run those DOS programs brilliantly, but not much else. It was not long until I was trying to run Windows programs and had incredible waits for anything to happen. Then along came Doom and the rest, needing 4 MB of ram so we stuck mostly to DOS. It wasn't until 1995 that I could really afford to upgrade anything, and then I got a great deal on a 400 mg Seagate drive, only \$200! And not too long after that 4mb of ram, only \$140! Now we could finally run DOOM! The kids were in heaven, for a while anyway.

1996 was the year Pentiums arrived. We bought some at work. First some P-100s and then some P-133s. They screamed, and I wanted one at home but they were just a little too high for me. A lot more than a little. It was during this time I decided to upgrade our aging 486 machines at work. I knew how to change video cards and stuff but had never gotten down to CPUs and motherboards. I learned something new, for me at least, that with just a few exceptions, most motherboards will fit into any computer case. Prices at this time were \$500 or so for a P100 with motherboard. We got one and a few months later prices had continued to go down so we got a couple more. Prices kept dropping, and by the end of the summer we were doing P133s with 32 MB of ram onboard.

Doing these upgrades gave me the experience and know-how to completely overhaul computers. It took this experience to make me realize that I could easily do this at home. However, looking at what I'd need to replace I decided to just get a brand new machine.

The research I did showed me that no one had what I wanted at the price I wanted to pay. I saw, however, that I could afford what I wanted if I put the whole thing together myself. What I found is that you need to determine a couple of things in advance. How much you want to spend and the CPU you want to base your system upon. I had upgraded a few of our work machines to Cyrix 133+ CPUs and I liked their performance. Plus the price beat the Pentium 133 hands down. So I decided to use a Cyrix chip. My budget was put at \$1500, just as I had three years earlier. I wanted to see what I could do with the same amount of money.

The setup I wanted should be a fast Pentium or Cyrix, at least 133, at least 2 GB hard drive, 10x or 12x CD-Rom, PCI video card with 4 MB

ram and 32 MB EDO ram. I'd start with that and then look for a sound card and a printer. What I was primarily interested in is something that would run the latest games as well as handle the latest bloatware office suites with ease.

By December prices had kept going down. I had one scare earlier in the Fall when memory prices started to rise for some reason. I almost bought then, but decided to wait it out until I was ready to do the whole thing.

At the same time the Cyrix 166+ had also dropped considerably and I decided that would be my CPU and would build from there. Some research at the Cyrix web site provided a list of tested motherboards. I had talked with several mail order houses about what motherboard to get with the 166+. Some said it didn't matter, others recommended certain chip sets and motherboard brands. For more in-depth information on Cyrix chips, sail over to <http://www.ionet.net/~rbdavis/fag.htm>. This guy has all the information you will need.

One board that came highly recommended and was also qualified for the Cyrix 200+ chip is the M-Tech R534 Mustang. After comparing it to other boards in terms of price and performance, I was sold. Besides being 200+ compatible it is also MMX and M2 (Cyrix MMX chip) compatible making the technology good for awhile. This board has plenty of slots, can handle up to 256 MB of ram, and supports a PS/2 mouse. I wanted a PS/2 mouse so I wouldn't have to deal with extra IRQ settings of a serial mouse. With a chip and motherboard out of the way I could concentrate on the other things.

I had originally wanted to get a Matrox Millenium video card with 4 MB of ram. I have a few of these at work and thought they were great, as

well as, much cheaper than the other 4 MB cards at the time. They were selling for \$270 or so and others like Stealth and ATI were over \$400. Then I saw a review of 3D cards in PC Magazine with an Editors Choice for the Reactor 3D from Intergraph. I checked out their web site and found the card was on sale for \$149! This card has all the 3D features (the Millenium is missing a few) and you can't beat the price. I have also dealt with Intergraph before and their support is very good. This card uses the Verite chip from Rendition. You should check out the Rendition web sight, www.rendition.com and the Intergraph web site www.intergraph.com/ics/i3d100/ for more information on this card if you have interest in it. I ordered one. It comes with Rendition-enhanced versions of Quake and IndyCar II. There are some other companies out there that are creating Rendition-enhanced versions of their games also. I have heard that Microsoft does some of their 3D development using these cards.

The hard drive I settled on was the IDE Western Digital 2.5 GB model as I have always had good luck with them. I had looked at SCSI drives but felt the extra cost was not justified for a home computer, especially with my budget.

I found that 12x CD-ROMs were going for \$130 or so. They were Acer or Mitsumi brands. Mitsumis are used by several mail-order computer companies. For installing software and running some games I felt it would be just fine.

This left me with getting memory, a case, floppy drive, mouse and keyboard. I wanted a case that would support a PS/2 mouse, but I found that my motherboard uses a ribbon cable to a plug which screws into one of the adapter slots. Usually cases have an extra slot opening so I could get any case I wanted. I decided on a 3-button Logitech PS/2 mouse and an Microsoft Natural Keyboard.

Finally, I was left with actually *getting* all the stuff! The only thing I'd ordered was the video card. I talked with several mail order places. Most were backed up for Christmas. I found there was a computer show going on north at a college in New Hampshire. I could get the parts and not have to pay shipping or sales tax! What a bargain as they say here in Boston.

I found a vendor at the show who had everything I needed, and for a lower price than any of the mail order houses. The case I settled on is by EnLite. The mid-tower case slides to the front, is held on by the front piece and uses no screws or fasteners.

Total price for motherboard, CPU, 32 MB ram, video card, hard drive, floppy drive, cd-rom, case, mouse, keyboard came to \$1080. I put it together, started it up and it's been running fine since. I haven't mentioned a monitor and that's because I have one and didn't have to think about a replacement. If I had the need to get one it would have to be at least a 17-inch job. Monitor prices haven't come down like memory or hard drive prices.

I have also yet to get a sound card or a printer. I'm using a Sound-Blaster Pro from the 386 and I will probably be getting a Sound-Blaster AWE 32 and have looked at some color printers. I particularly like an HP I've seen which can print computer paper (for those Happy Birthday banners) or sheet paper and does so at a good rate of speed.

One point I need to make is about warranties. If you notice I bought name brand components. One reason is quality, the other is warranties. I know these companies will replace their products for the full life of the warranty (and possibly more) which is at least a year and is five years for the hard drive. You can't get that with no-name products. Of course

you could buy a complete name-brand computer for an extra grand and have them warranty everything but that's no fun.

If you decide to go this route, do your homework. If you don't subscribe to any PC magazines, browse through some at the library or pick some up at the store. You may have seen "Computer Shopper" around. This mammoth monthly is packed full of ads for systems and parts. As I said before, figure out how much you want to spend and from there pick your CPU and build on that. New and improved products keep coming out which relegate today's cutting-edge technology to the bargain bin. The recent release of MMX has brought even lower Pentium/Cyrix prices. The urge to wait for prices to drop even more to get that next great gizmo will lead to waiting forever.

I'm glad I decided to build a new machine rather than upgrade the old 386. I was able to take one of the 486 boards from work and upgrade my home 386. I then went out to a used computer parts place and picked up a couple of network cards and a network line and hooked up both machines at home. There is nothing that beats a good game of network Doom!

Jim Plumb is the System Administrator for a commercial printing establishment. This down to earth piece belies his skills in the areas of connectivity of multi-platform computers. Jim was the first WebMaster of [WindoWatch](#) as well as teacher extraordinaire with his Acrobat series for [WindoWatch](#).

Computers as an Educational and Social Force

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The role of computers in the field of education goes far beyond applying them to learning rote skills, such as reading, 'riting and 'rithmetic. Their scope goes to the core of our society and how it will be shaped in the next decade or two.

The Boston Globe recently printed an article that discussed how the Internet can be used by high school seniors seeking admission to college. The writer of the article proclaimed this a boon for high schoolers and their parents. Among other benefits cited, online applications would allow college admissions offices to waive the application fee, because of the reduction in paperwork. Given that the usual strategy is to send applications to several schools, the savings of both time and money will be considerable.

The article sent my mind spinning off in several directions, finally coming to rest on the notion of how computers will affect relations between the *haves* and *have-nots* in America, between whom the chasm is widening every day. Those who hail the democratic benefits of the Internet seem to overlook the fact that it's only democratic for those who have access to it. Not everyone has the bucks to lay out for the equipment.

One of the most misunderstood songs ever written is Billie Holiday's God Bless' The Child, usually misconstrued as God Bless The Child. Dropping the apostrophe leads to the inference that the singer is asking the deity to confer benefaction onto an infant, when in fact the point of

the song is that divine favor has already been bestowed on those who've "got [their] own." The gap between the fortunate and those who must be satisfied with a "crust of bread and such" long ago reached crisis proportions. I doubt that the advent of the PC as a tool of education will do much to bring us together until there's a PC in every home that is hooked to the Internet. Those of us who have home PC's have indeed been blessed. What about the rest of us?

In his inauguration speech, President Clinton alluded to the Internet "in every classroom" in the country. As an idea, this is laudable. Putting Internet connections in public schools, especially in less fortunate school districts, would be a major step in the direction of shared intellectual wealth. Whether this comes to pass remains to be seen. Whether Americans are willing to foot the bill for such an undertaking is very much in doubt, especially in the current budget-balancing climate that drives the Federal government. However, even if universal classroom connection is achieved, the greatest beneficiaries of the Information Age will continue to be those with modem-equipped PC's in their bedrooms, dens and home offices. Mr. Clinton's much touted "bridge to the 21st century" will become an impassable barrier to those who can't pay the toll. Being stranded on the wrong side will be like watching the continent split apart, with the affluent side drifting off to the future, leaving the rest mired in the past.

As with so many problems in public education, it comes down to money. Computers are but the latest area where schools in well-off towns fare much better than those located in less prosperous neighborhoods. If, as Tip O'Neill said, "All politics is local," school politics is the most local of all. The notion of "home rule" is nowhere so boldly displayed as when townsfolk meet to set up school budgets for their children. While the results may vary from locale to locale, each town gets to use its taxes

for whatever the citizens decide are the proper educational goals of their community. It's hard to argue with this, unless you are willing to entertain the notion that educating children everywhere, regardless of local tax base, is a worthy aim, and recognize that your own interests lie in achieving this goal of universal education. We all pay a price for the ignorance of those who make up the national work force.

While computers in schools are analogous to books as information providers, the scale of information they provide makes them quite different from books. A second advantage of computers over books is that reading can be hard work. The medium of communication is much more passive - Looking at images on a computer screen takes a lot less effort. When reading involves a language you don't use on a day-to-day basis, with a vocabulary that extends beyond your comfort zone, it becomes nearly impossible (ask anyone struggling with Shakespeare, even using the Folger's edition). It's no wonder too many kids opt out of books in favor of the medium they're most comfortable with - video. The reading muscles haven't had much chance to develop, and the pain involved isn't seen as worth the pay-back. It's easy to see the day, not far in the future, when homework and reading assignments will require accessing a Web site rather than reading a chapter in a book. Certainly many young scholars are already using the Web for research purposes. Can it be much longer before book reports are replaced by video reports? Who can argue that watching "Silas Marner" isn't easier (and faster) than reading George Eliot's original?

Whatever the eventual use of the computer as an educational tool, it's clear that we, as a people, need to invest the money to ensure that this tool doesn't turn into a wedge that drives us further apart. "Charity begins at home" should not be construed as justification for keeping it

all for ourselves. It must be interpreted in its true sense - that the notion of sharing must be ingrained in each of us with our mother's milk.

After spending months examining the various Suites, Frank McGowan has turned his very competent hand to discussing some of the dilemmas facing teachers and parents trying to unravel the social snarl of computers impacting education. Frank is a contributing writer to [WindoWatch](#).

Editorial Continued

32 MEG of multiple memory chips. An excellent buy they would say!

Let's leap together into the fantasy of computer marketing c.1997. When are they going to decide that I need a dual processor motherboard running a pair of PentiumPros? (I sure hope soon!) Can you imagine a collective insanity suggesting, even subliminally, that a pair of PentiumPro 200 at \$650 each is even a remote necessity sometime soon? Does anyone think that business is going to be so foolish? Nah! They're still running 386 boxes and Windows for WorkGroups!

What makes this exercise of non-directive mind control so remarkable is that we spend scads of time talking it up, or more precisely helping to create this demand long before there is any real utility, for individuals at least. The Internet, ignored by the powerful for a long time, has become the rationale to spend even more money on electronic toys and peripherals giving new meaning to the old saw about a fool and his money. To paraphrase my friend, Stanley,- It will become a purrfect Internet world when I can really go nuts with the protection of secure connections for credit card transactions. Make it so....and soon.

Working Towards a Perfect Body

Copyright 1997 by Gregg Hommel

No, this has nothing to do with perfect abs, nor any of those, - uh, - so perfect bodies you see on TV demonstrating the huge variety of exercise machines. (A profound question! Tell me why, *never* in those commercials or infomercials, any one shown using the machine, ever seem to need one?)

In this case, however, we are referring to the body of our Web page; the text, graphics, and information it contains to entice and enchant the people stopping by for a visit.

We already have a very basic Web page coded, but in all honesty, it's content is such that it could be prescribed by many doctors as a cure for insomnia. We need to liven it up and make it interesting, in order to hold the attention of the hordes who will come to call. We want them to come back for a return visit, not just a quick and cursory glance only to wander off! But how do we do that?

As a start, instead of trying to define how we can do it, I think I would prefer to define how we *won't* do it. I will admit that the following ideas are strictly my own, and may not be accepted by many. They have been formed as a result of a lot of time wandering the Web, and through discussions with many people I know, regarding what turns them on or off a Web page. So, for whatever these notions are worth, let's begin....

1. Graphics are likely the easiest and most common method of enlivening one's home page(s). There is no question that the use of graphics can, and often does, improve the a Web page. After all, the World Wide Web is nothing else if not a *visual* medium, and graphics are de rigeur for that. However, over use of graphics on a given

page may be one of the primary causes for lack of activity on that page, especially in terms of repeat visits.

No matter what the magazines and others would have you believe, especially those who advertise modems, the most common speed used to access the Internet is still just 14,400 bps, even though, by now, it may be up to 28.800 bps. In spite of what you may think, neither of these is especially fast, particularly when it comes to transmission of many and/or large graphics.

Graphics on a Web page are fine, but keep them limited and as small as possible. I know this sounds like an impossible demand, but graphics no larger than 10K in size work best. This allows you to put more images on a page without slowing down access to the point that the remote user will not want to return.

2. Everyone who has a Web page also has their own favourite places on the World Wide Web to visit. A natural and logical thing to do is to tell people about those favourite sites, and then provide a link from your page for your visitors to go and find out for themselves what makes it a favourite.

But, once again, as with graphics, similar rules apply. In this case, it isn't the time to download the page that causes the problem, but rather, clarity of purpose. Most browsers are set to show links to

other pages in a different colour than the normal text on a page. However, if there are too many links to other pages in the body text of a page, the changes in colour make reading the text itself a chore, especially when your eyes get older, as mine are! One or two links in a page of text are not too bad, but if you put four or more in a couple of paragraphs, you might think about an alternative. My personal favourite alternative, is to eliminate the links in the body text, and put one single one in their place, that one leading to another page, which is a list or table of all of my favourite links to other pages.

This allows the reader to get a feel for these places, and if they are interested in going to visit, they merely have to click on my **Favourite Places** link. They get a page with a table of all the links mentioned elsewhere where they can then use them. Meanwhile, the body text in my main page remains legible, as it is for the most part, a single colour, and therefore, easier for most people to read.

3. Everyone enjoys their moments in the sun, most of which are few and far between. As a result, we tend to take full advantage of those we get, knowing the moment is all too brief. The World Wide Web is great for that! After all, this is your personal page, isn't it? And that includes your wife/husband, kids, family pets, favourite automobiles, bicycles, toy trains, and anything else you can think of, doesn't it?

Honest truth? It doesn't, at least, not to many people who may have cause or reason to visit your home page at least once. If that person is a long lost relative, or a friend who has moved away (or even one who hasn't), such might be of interest to them. But for most folks who might visit your page, nothing could be further from the truth. And such images tend to also violate the first item above, i.e. they are graphics, and by their very nature, as photographic reproductions, are large and slow as blazes to download.

This does *not* however, mean that you cannot put such things on your Web site. My suggestion is that, if you must do this, and many people must, then do so as suggested for links above, i.e. on a separate page accessible via a link from your main page. Anyone interested in looking at you, your family, your pets, or anything else you find interesting enough to reproduce on the Internet, can do so, via that link. However, casual visitors to your site won't be forced to download those large graphics unless they want to, and can save their time and energy for undistracted attention to your main page(s) instead.

4. **Text and Content - basic rule... Don't write a book, not even a novella! Keep it simple and short. The World Wide Web tends to be an ever changing, constantly moving thing, difficult to grasp and hold on to. As a result, this also encourages quick flittings from one page to another, with short stays to view a page. If your content is too long, if you try to tell too much in a given page, many users will move on without reading it all, and in the process, perhaps miss that all-important link at the bottom of your page, or some similar jewel.**

Many of the more successful Web page sites I visit with regularity contain only about one page of anything on each page of the site. Some stretch it to two pages (i.e. you have to do some scrolling to see all of the given page), but I don't know of many who go beyond that length. Rather than making a page too long, they will break it up into multiple pages that hold the content, with links back and forth between the related ones, so the visitor can navigate if they wish. Those who wish to read/view more, do so. Those who don't, aren't forced into it with everything existing on one page, and may instead, visit different pages on the site.

5. **Think seriously about using an index page of some sort. As you can tell from the above, rather than a single page for a site, I advocate multiple pages in order to keep any one page from becoming too large. I find that this style lends itself to an index page quite well. Also, if you think about it, you are not a one-sided person but rather, have multiple interests, hobbies, and goals in life. Your Web site should reflect this, and not itself be one-sided (or one-paged) and as an aside, almost requiring an index page.**

The index needn't be anything fancy, nor does it need to look like the index page in a book. What I mean by an index page is an entry point to your site on the Web, a place for people to quickly see what is going on, and to find ways to find out more about you and your interests, especially those that match their's.

6. Above all else, and in spite of any tendency to do otherwise, I find the simplest rule to use when designing a Web page is an old one. K.I.S.S. - aka **Keep it simple, stupid!** A simple layout for each page, a simple set up for multiple pages on a site, and simple content on each page. It is just courteous to tell visitors when a specified link is not simple content but something else.i.e, a big graphic or a technical report, etc!

That's enough of the *rules* and putting a damper on our fun on the Web for now. Let's look at extending our page from previous columns into something a little more like what is mentioned above. If you recall, the code that we have currently is....

```
<HTML>
```

```
<HEAD><TITLE>The WindoWatch Tutorial Practice Page</TITLE></HEAD>
```

```
<BODY BACKGROUND="Images\wall.gif" BGCOLOR=#00FFFF TEXT=#000000 LINK=#7F0000  
VLINK=#00007F>
```

```
<BASEFONT FACE="Times New Roman" SIZE=3>
```

This is our very first practice page for this HTML tutorial.

```
<P>I know that this isn't much to read, but it is our first page, and we needed some practice at writing the  
text for the body of our page.</P>
```

```
</BODY>
```

```
</HTML>
```

Obviously, this is in need of some work. The first thing we are going to do is to convert it to an *index* type of page for our imaginary site. If we assume that this is going to be the index, we'll call one of the pages we will link to, WWREAL1.HTML, and start our index using that, as follows:

WW

<HTML>

<HEAD><TITLE>The WindoWatch Tutorial Practice Pages</TITLE></HEAD>

<BODY BACKGROUND="Images\wall.gif">

<BASEFONT FACE="Times New Roman" SIZE=3>

Welcome to our Practice Pages for the WindoWatch HTML tutorial. This site is continually suffering from ongoing construction, so please bear with us while we build these pages.

<P> Right now, as you can tell, there isn't a lot on our site, but things will improve as we expand our knowledge of HTML. Eventually, this page will serve as an index to the various other pages of content we will have here, and even become the starting point for our framed version of the site, which we hope to start working on shortly.

<P>For now, we haven't much here for you to see, other than a basic page for example purposes, which demonstrates a link to another of our pages, more than anything, and also a link to our "parent", WindoWatch Magazine.

<P>As time permits, and as we learn more, we will obviously have more here for you to look at. Meanwhile, enjoy what you can <GG>.

</BODY>

</HTML>

You will note two new items of interest in the above code, both of them including HREF= between the standard HTML tags of <>. These are called **anchors** and are what we normally would call a link. Both are quite similar, but one includes a complete URL (Universal Resource Locator), while the other doesn't. The reason is simple: the first one is a link to another page on the site, and in the same directory as the page linking to it. As a result, this one doesn't need a full resource locator, as the http and current www site are assumed.

The second one, however, which links our pages to the main *WindoWatch* page, does require a full resource locator, since it is not at our site, or in the same directory.

The opening <A indicates the beginning of the anchor, the HREF= tells HTML interpreter, the browser, that this is an Internet resource, and the text in quotation marks indicates what that resource is. We then close the tag with a proper >, however, we don't quite stop there.

Remember, most HTML tags don't actually appear when you look at a page. They are hidden code, interpreted by the browser in use. We,

WW

then, need something to indicate what the resource in question is, and where the remote user can click to access the resource. We follow the closing `>` with some text which will be shown as a [link](#) by the user's browser. This will be indicated by the browser set up as someplace that can be clicked upon to access a resource. Then, we put the closing HTML tag, a `` to indicate the end of the entire tag area, i.e. and the Anchor is complete.

One other thing to note. I have dropped the various [color](#) settings in the `<HEAD>` section of the code. My personal preference in a Web page is not to specify colours for links, and various other text, but to let the browser accessing the information display them in the manner the user has set up and defined. My colour sense is lousy! Ask my wife and kids, - they have to look at me when I get dressed. "But Daddy! That orange shirt and those lime green pants don't look right together!" Therefore, I prefer to let the user define how those colours are displayed. Since my normal choice is my Wall.gif background, which is like gray parchment, most colours defined by the browser for text display look reasonably good.

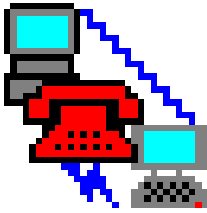
Right at the moment, of course, if we were to put this sample code up on our tutorial site at [WindoWatch](#), and anyone were to click on the first anchor, they would likely get an HTTP ERROR 104, which indicates that the resource indicated, our REALONE.HTML page, cannot be found. This would be correct since it doesn't yet exist. So let's fix that (although I may not put this rather simple sample code up on our tutorial site yet) by writing a simple example for REALONE.HTML....

```
<HTML>
<HEAD>
    <TITLE>WW Practice Page - RealOne</TITLE>
</HEAD>
<BODY BACKGROUND="images/wall.gif">
    This is a simple "first" page for our practice site, at least for now.
    <P>Later it may contain more, but for now, all it is this text, and a link back to <A HREF="index.html">our
    index page</A>. At least it demonstrates the fact that one should *always* include links between pages on
    any sub-pages used, especially a link back to the original index type page.
</BODY>
</HTML>
```

So far this month, we have gone from having one boring, simple practice Web page on our site, to having *two* boring, simple practice Web pages on our site! I admit, it isn't much, but it's progress of a sort. We now have two kinds of anchors or links on those pages, and can build from that, eventually working our way to those frames that we promised you way back when we started this thing.

*Gregg Hommel is an experienced Aspect script programmer. He is translating his skills into the HTML arena. An accountant, consultant, and the **WindoWatch** HTML Editor, Gregg successfully wear many hats while giving us the benefit of his expertise! Gregg can be found On Ilink and RIME hosting Windows conferences and answering questions from his many fans.*

Ahhh The Best Laid Plans of Mice ...



Reflections of a ModemJunkie
Copyright 1997 by **Leonard Grossman**

After I finished last month's column, in which I talked about my efforts to attain a design award for The Gropper Windows pages <http://www.mcs.net/~grossman/gropper.htm>, I spotted a gold ribbon on a page proclaiming the site to be *speech friendly*. The concept in-trigued me and I learned of efforts on behalf of a number of people, including, Cathy Anne Murtha, to encourage the creation of sites which are compatible with speech synthesizers. These voice sites will ultimately help those with vision difficulties to hear the content on web sites.

Having just received the WDG Award for the Gropper pages, I should have rested on my proverbial laurels, but my curiosity got the better of me and I sent a note to Cathy, the sponsor of the award, asking whether a site dedicated to graphic images could be made speech friendly. I received an excited and gracious note in response indicating that, indeed, such a site could be speech friendly. She authorized use of the ribbon on the page without modification, but also suggested that I provide greater detail in my descriptions of the individual windows, a project I have yet to undertake (volunteers accepted).

I quickly added the new ribbon to the miscellany section of the Gropper pages, together with other kudos it has received.

The design simplicity rewarded by the Web Design Group had resulted in a speech friendly site. On the other hand, my home page, Notes from a ModemJunkie, apparently did not qualify. What was the difference, I wondered.

Eventually, I discovered that while it is a great start, design correctness, that is validated HTML, and simplicity are not enough to be truly speech friendly, although they go a long way. Other considerations are also relevant. For example, on the ModemJunkie page I frequently include more than one link within a sentence or a line, which confuses speech synthesizers. There may have been other design elements which were also confusing. Indeed, when I added the Gold Ribbon to the Gropper pages, I included a link to the Speech Friendly page <http://www.wwwwebit.com/magical-mist/ribbon.htm> in the same sentence as a link to the Web Design Group <http://www.htmlhelp.com> and to a Religious index which had featured the site. In the process of boasting about the award, I had violated its principles!

Cathy encouraged me through the learning process. She told me of her excitement that her Web Site and award were to be featured on a major television network news magazine program focusing on seeing eye dogs for the blind. She had offered to validate the program's web page, which was to describe that week's program, so that she could award it the ribbon and gain some recognition for the speech friendly concept. I eagerly tuned in to watch the show, which was fascinating, but made no reference to her award.

I can only guess at what internal jealousies had caused the network's web designers to refuse to submit their page for consideration, but a quick look at the page showed why. The page, although looking amazingly clean, used HTML tricks to accomplish its looks and was anything but speech friendly. Instead, as a sop to the blind, it used Real Audio techniques to make it possible for a blind surfer to hear the contents. But I have no idea how a blind person would be able to navigate such a page to find the Real Audio link. The network was very proud of itself and an opportunity was lost.

Still, what I was learning fascinated me. I wondered if there were other individuals with disabilities whose special needs could be met in web page design. I decided that this month's column would focus on those needs. I sought out newsgroups related to disabilities and posted inquiries in all of them. In a three week period I received only four responses, and one of them warned me that I would be disappointed. I was told that there were many web pages dedicated to disabilities, but that many were rapidly orphaned by their creators, which seems to have been the case. And perhaps I am guilty as well.

However I have not learned enough to write on the subject this month. I did learn that in addition to speech synthesis there are also braille readers which work best with clean HTML and must learn what special requirements are needed for coding for such machines. I also received a suggestion that the content for Real Audio and other sound materials be made available visually for those with hearing disabilities. I guess turn about is fair play. Interesting, that using clean HTML without multimedia add-ons is effective and helpful for those with disabilities in hearing and in vision. One stop shopping.

But the battle for clean HTML is being waged on another front. In the HTML related newsgroups, partisans are lining up and shouting at each other with religious fervor. The purported battle lines are between those who side with design and layout control, which I call fixed formatting, and those who believe in markup languages and user control of appearance.

The camps shout loudly across the abyss. The HTML purists now style themselves *pragmatists* and often seem unwilling to recognize that there are valid reasons for assuming control over precise layout and design. Those from the desk top publishing world or those who are used to the print medium insist that the HTML group are Luddites wedded to a mark up language that doesn't suit their needs for artistic control.

As a writer for this magazine, which appears in PDF format, I find myself between a rock and a hard place. I will go out on a limb and state my preferences:

Unless there is a very special reason, I believe that information on the web should be presented in the most generic and accessible format. I am grateful that selected articles from the archives are now being made available on line in HTML.

However, PDF is great for presenting graphic material. The screen shots and other graphics appearing in *WindoWatch* are good examples of this use. However, I don't know many other reasons for storing material in that fashion. One example does, come to mind, I needed an IRS form this weekend. I logged on to the IRS web page and found the form in PDF format. I downloaded it and then viewed it in my Acrobat

reader, which I obtained just to read this magazine. It looked great. Just like the real McCoy. But I couldn't get it to print. The print dialogue box opened and then nothing.

It would still be hanging there if I hadn't rebooted. In the meantime, my wife had returned from the library with a photocopy.

But it does demonstrate that there are appropriate uses for fixed format pages. Still, PDF is not capable of being indexed by the Web Robots and I don't know whether there is any speech synthesizer which can read a PDF file.

So for the most part, I side with the HTMLers.

I resist using the term *pragmatists* for the HTMLers because, pragmatism always serves a purpose. When money speaks, it may seem pragmatic to give up accessibility for control if that is what the market wants. And commercial interests may be more comfortable with fixed formats, just as they are with image maps, and sound and video -- all features that interfere with accessibility.

The biggest fight seems not to be over the right to use fixed formatting. The HTMLers do recognize anyone's right to publish in any format they want to. Heck, if David Siegal wants to publish a page in black text on black they won't object, - they might even applaud! What they rightly object to is recommending and teaching others to use fixed format design.

I concur. If people want to limit the accessibility of their pages, that is their right, but just as my home page bears a blue ribbon for free speech, so do I value accessibility. Fixed format sites, proprietary extensions all of these are like great potholes on the information highway. Unfortunately there is no way to get those sites to post warnings where they can be seen in time to slow down. Some of the more *enlightened* sites have taken to using browser detection software. Unfortunately, if that software makes a mistake, the users get stuck. Why not use a generic opening page with selectable options? Surfers still can think for ourselves, we are not robots! Are we?

Leonard Grossman, is an attorney who works for the government. He is a WindoWatch regular and has been contributing "Reflections" for some time. Leonard's home page was chosen as a "Best o' comp.infosystems.www.announce" site during April 1996. He is also president of his local user group in Chicago. Comments can be sent to grossman@mcs.com.

***Editorial Note:** Leonard asked me to comment upon the PDF vs HTML controversy. I use both tools as each has their own strengths. Nothing can beat PDF when creating large documents or those with many graphics. The compression capability built into the software, reduces those files to a very manageable size. (See: [Adobe Acrobat v.3 Flies High: A Product Review by Lois Laulicht; WindoWatch V.2 No.10; Dec. 1996](#)) It seems to me that questions of minimalism as it relates to the Web can be carried to as great an extreme as foolish acceptance of bloated web sites. Why should we deprive ourselves of color, texture, or voice? On the other hand, some very stark pages are simply lovely because they have been successful with just a few but compelling strokes.*

I hope freedom of speech, also includes artistic expression. So long as that expression doesn't interfere with someone else's space, freedoms, or is obscene for the sake of obscenity, my own view, is that this intense debate over style is but another Internet squabble in the same category as the silly browser rhetoric or my software is better than yours!

However, the notion of several options or paths to select vision-friendly pages makes much sense. One can easily produce pages in a bold font style with good color contrast and spacing of type. Making these and other accommodations to the handicapped can be likened to a ramp for wheelchairs or large print books. [lbi](#)

Design of Web Pages

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Introduction:

Last time around, I was introduced to the readers of *WindoWatch* via my Care and Feeding of Web Pages. I must say that it appears to be one of the most popular bits of drivel that I've ever written. I've been invited to continue contributing to this publication and so, you're stuck with me...well sort of. No one ever said you have to read everything in here.

This time, I've decided to discuss more seriously a few aspects of web page design. My site along with Len Grossman's has been awarded the Web Design Group (WDG) Award. The Web Design Group is a small collection of people from the comp.infosystems.www.authoring.html newsgroup. Membership is by invitation, I believe, and the group are the most vocal proponents of the idea that designing for the web should be a question of designing so that the maximum number of users can access your pages. Their slogan is "Making the Web Accessible for All." To get the WDG Award, you need to be willing to follow their standards for HTML design. They have a web site <http://www.htmlhelp.com/> which can help you learn better design principles for the WWW.

What services do the WDG provide?

From WDG's reference section: “... offers background information and technical specifications on HTML authoring. Its main purpose is not to provide browser-specific *hacks*, or workarounds for browser bugs or limitations, but to give the correct way to do it. In cases where this may conflict with browsers, there will be a note explaining this.” The web site offers references on HTML 3.2 (named Wilbur) including a list of all tags and how to use them. I recommend that you print this section or download an offline version of it. It is a very useful list to refer to whenever you need to look up a tag.

They also have references for Cascading Style Sheets, not well implemented by web browsers as yet, the character set overview, and a technical glossary. Cascading Style Sheets allow the writer to specify things like putting headers in red, having normal text in black, or using a margin of 1 cm. The character set tells you exactly what characters may be placed into an HTML document, and how to get to some of the more unusual ones. The glossary explains the terms used in the other documents.

The link section is one that you should bookmark. They have links to Frequently Asked Questions, Tutorials, Validators, Style Guides, Reference Material, Rants (this section is fun), Graphics, Miscellaneous and Newsgroups. When you are just starting to write HTML documents, the FAQs and tutorials will be most useful. As you get used to using HTML, the other links will become more useful.

Design elements cover a few more advanced topics including style guides for frames, and use of images and colour on a web page. Some of these topics are covered by members of the WDG, others are links to

relevant pages elsewhere in the web. This section covers what image format (gif or jpeg) should be used for what sort of image, how to make transparent and/or interlaced images, and a brief bit about animated gifs. Using colour on web pages can be a bit tricky, some browser use their own colour palette, so your wonderful picture may suddenly look a lot worse. Knowing about colour palettes and what you can do to improve your images for browsers may be of interest if you use images frequently.

What about this award?

The basic and most important consideration for the web is *who are you designing for?* If the answer is, for anyone interested in my content, then you should be designing using the strengths of HTML. To get the WDG Award, you have to use non-specific browser design, or provide alternatives for non-specific browsers. This allows your pages to really belong to the World Wide Web, since your pages are not being designed with some particular screen size, browser application, plug-in, etc.

How do you design for non-specific browsers? It's actually very simple. Use standard HTML. You can find the specifications for HTML 3.2 at <http://www.htmlhelp.com/reference/wilbur/>. If you follow the specifications, you can then be sure that your HTML *should* work on any browser on any computer system that is HTML 3.2 compliant.

The other requirements to win the WDG Award are to have pages that can be viewed at 640x480, to keep your pages down to 50 k or less each, text and graphics, unless the client is specifically warned otherwise, to use ALT text for all graphics, to ensure that any browser specific tricks degrade well on other browsers, and to ensure that all links are valid.

Whenever you complete an HTML page, you should consider validating the page. There are a number of validators that are available, both downloadable so you can validate from your own computer and online sources. The WDG has several pointers to these services, and you can try several of them. I like the Webtechs validator, but the information you get back from it is on the technical side. I've heard that The Kindlier, Friendlier Validator is much nicer to use if you aren't a programmer. I always validate a page before I put it on the web. I try to remember to re-validate if I do serious work on it. Why? Well, every time I don't, there is a tag with one and not the second. This is amazingly ugly and breaks that link very thoroughly. All pages to be submitted to the WDG should have passed validation.

Well, that's all for now. Tune in next time for the totally exciting and thrilling topic of Searching the Web. Well, perhaps not exactly exciting but one that should be important for anyone who needs to retrieve information from the web.

Lynn Alford is the WebMaster at the John Cook University's Ruby 1 Centre for Interactive Multimedia in Australia. Her interests are not limited to HTML but include games as well. Her Care and Feeding of Web Pages won her an award and was printed in WindoWatch as her maiden voyage. Lynn can be emailed to at lynn.alford@jcu.edu.au or lalford@nyx.cs.du.edu She has interesting game review pages based at <http://www.jcu.edu.au/~imla/games2.html>

The Black Menace

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In many of my articles I have discussed SPAM and it's consequence for you and me. I decided it was time to find out exactly how much there is and what can be done about it. There are methods available to contain this onslaught and there are desktop tools obtainable to help you do so. In the course of putting this article together, I was led on a tour of the Internet and fortunately, I took pictures! So sit back, put your feet up and let me show you my travel mementos.

First of all, I must confess that I failed in my initial goal to get a handle on the amount of SPAM churning around the Internet. I had naively hoped to be able to give a more or less definite number on the amount of SPAM circulating, but apparently there are no SPAM statistics kept. When you think about it, it's not all that surprising. What I did find was an inordinate number of web sites dedicated to ridding the planet of this scourge. Mostly everyone is dismayed and angry about this form of commercialism, but not enough so, to track any solid information on the activity other than monitoring well known spammers.

So, I decided to use a different tactic and investigate the user's best friend, and a controversial one at that, - the Cancel Bot. After looking at a few sites where Cancel Bots are tracked it was obvious that there is a lot of SPAM that is being canceled. In fact one site I visited claimed

to cancel a total on 654 MB of SPAM in just under a couple of months. When you realize that there are about ten Cancel Bots being used at any given time, it adds up to a lot of net garbage.

Unfortunately, the bots don't get it all and, as the people who work these agents will admit, as the rules they have in place for what constitutes SPAM favor the mailer and not the receiver. This is because it is easier to err on the side of caution rather than have excessive cancels. They claim that fears of abuse could be construed as an attack of freedom of speech, like canceling a minority group's mail just because some one doesn't like them. If you're interested and want to read more about net abuse, read the Net-Abuse FAQ at

<http://www.cybernothing.org/faqs/net-abuse-faq.html> To learn about how SPAM is canceled go to Tim Skirvin's page where you can read in detail how this process works and get an idea of the standards used for canceling mail. <http://www.uiuc.edu/ph/www/tskirvin/cancel.faq>

For many reasons, most people feel that junk email is an intrusion. One of the primary reasons is that people resent having to pay for someone else's advertisements. When one factors the costs of paying to be on the Internet, having access to the resources available on the Internet, and the time spent downloading unwanted mail, the cost is not negligible. While you may argue that while it only takes a couple of seconds to do this, just multiply that through a year and divide it by your access time. Further, that multiple, factored by the thousands of people who receive this junk, gives one an idea of the real cost to consumers. At least when junk mail comes to your house the cost is paid by the mailer, but that too is heavily subsidized by cheap bulk rates! If you want to expand this

argument, there is the additional time wasted sorting mail when you could be reading messages that are important and interesting. Anyone who does real work on the Internet would prefer to correspond with a customer or associate than read a sea of junk mail.

The second reason is the ever increasing bandwidth junk mail consumes. SPAM is downright resource intensive. In the above example of 654 MB of SPAM being canceled in a couple of months by one cancel bot, one could extrapolate that the ten cancel bots in use, would delete some 3270MB of junk mail in a month ($654/2 \times 10$). That figure is not likely accurate for a couple of reasons. First, I am using the results of a single cancel bot which is a poor way to generalize. Additionally, cancel bots miss a lot of mail as evidenced by our in-boxes. However, it does give us an idea of how much junk mail is being transferred around the Internet monthly. It works out to be 109 MB of mail per day ($3270/30$) that we are collectively paying for.

There are many other good reasons why SPAM needs to be held in check. You might be interested in the valuable Stop Junk Mail page at <http://www.mcs.com/~jcr/junkemail.html> for more information on SPAM and why SPAM infringes upon your rights. Still not convinced? I recommend a visit to Mark Neely's page, The Anti-Umail FAQ at <http://www.accessnt.com.au/faqs/spam.html> where Mark outlines some excellent arguments on why SPAM is a waste of Inter-net resources along with your time and money. These sites also have links to other pages regarding junk mail, common abusers and what to do about it.

Another source of information on SPAM is the newsgroup **news.admin.net-abuse.announce**, where you will find cancellation notices as well as the names of common abusers and helpful tips to deal with SPAM. One interesting site is called **Cyber Promotions Issues** at http://ourworld.compuserve.com/homepages/stop_uce/motions.html. Cyber Promotions is probably the most well known bulk emailer having challenged America-On-Line in their decision to block in-coming junk mail from known bulk mailers. Here you can get information about Cyber Promotions legal battles against AOL and Compuserve along with the various domain names they mail under and how to get off their lists. This site is definitely anti-spam and can be helpful in dealing with unwanted mail.

Having gotten a guess-timate of the volume of SPAM, I then decided it was necessary to learn how to combat it. I found there are so many sites on this subject I couldn't begin to list them here. However the **Stop Junk Mail** page has some great advice on how to go about this. To effectively beat off the junk mailer you need to first follow a few steps and also have at your disposal a few Internet tools. First off you need to respond to the mail by whatever unsubscribe options they offer in the offending mail. Next you need to determine where the mail has originated from. In most cases the return address is a fake. So you need to determine the origin from the headers.

If you want step-by- step instructions, go to the **Stop Junk Mail** page where the author gives you an anatomy course on mail headers. Or jump over to <http://www.accessnt.com.au/faqs/spam.html> and look at the **Anti-Umail FAQ**. Here Mark Neely also give you a course on tracking

down spammers and how you can go about complaining effectively about their abuses. Much of the SPAM that has to do with get rich schemes and pyramids usually have a fake return address. No surprise as these activities are illegal in most countries of the world. To determine the real address from where the mail originated, you need to look at the Return-path, X-Sender and the 1st Received Fields in the header to determine the actual sender. You can then send your complaint which should be brief, polite and contain a copy of the spam with headers to postmaster@spammersdomain.com or manager@spammersdomain or root@spammersdomain.com (where spammersdomain.com represents the second half of the mail address in the return field after the @ symbol).

You may not get a response but a System Administrator is not likely to be happy to learn that one of its members is vying to be the next spam king. You can also try to Finger the originating email address to see if it actually exists within the stated domain, to be sure, before you proceed with a WhoIS lookup. You should do a WhoIS lookup on the domain listed in the fields mentioned above and from this you can determine the origin site or host site of the mailer. You should be prepared to do a lookup on the host site to decide if, indeed, it is the last on the chain of servers the mail passed through. The Stop Junk Mail page lists even more steps you can take to track the mailer down and I would suggest that you read it as it is quite thorough.

In the meantime you can take some precautions against junk mail by employing the proper tools in your Internet tool kit. First thing you need is a mail program that employs filters such as Eudora (Pro or Lite),

Pegasus, and MS Mail and News. You can set up filters to move mail containing \$, cash, money, etc into a folder that you can look through it your convenience. This way, you can sort through the junk mail, or dump it unread, rather than sifting your way through your in-box trying to hunt down the important stuff. Another great tool is a news reader that employs kill filters or a kill file. For Windows users I would recommend Agent, News Express and Gravity. Kill files work the same as mail filters and allow you to exclude messages by the contents of their headers and/or author. Usually a kill filter will mark the thread as read or mark it ignored though it will vary a bit from reader to reader. Through the use kill files you can at least make your news reading more meaningful. The best tool you have is common sense. A lot of junk mail comes about because you subscribed to a list on some web page, so only sign up for lists that are truly of interest to you. Just because there is a form on a web page doesn't mean that you have to fill it in.

These articles on SPAM are works in progress. Someone will come up with a way to break through the junk mail barriers. The spamming of the Internet can be likened to junk mail delivered through the post office. Perhaps the next editions of email programs will have a return to sender button reversing the process creating their own sets of problems, like overloading mail servers.

Let 's hear what you have to say about SPAM, pro or con. Email me with your thoughts at christle@mb.sympatico.ca.

Dan Christle is the WindoWatch authority on SPAM, Cookies, and all Internet routines intrusive! He is a salesman for a proprietary trucking industry network also providing setup and help for their customers. He is a regular [WindoWatch](#) contributor.

A true online-midi-net-song, - our online national anthem. An *original* song by the Caffeinated Chef <http://www.duban.com/chef/chef.htm>

Reload! (Sung to the tune of Rawhide)

Loading, loading, loading,
Damn this Java coding,
There's that feeling of forboding,
Reload!
The Applet says it's running,
And that big grey block is stunning,
But the screen remains as blank as my mind

Netscape crash,
Boot 'em up!
Net goes down,
Dial back!
Logging on,
Still off-line!
Reload!

Try it now,
Still not up!
Netscape crashed,
What, again?
Boot it up,
Log it in,
Reload!

Tighten, tweakin', smoothen,
They say the codes improvin',

**So how come I'm still usin' "reload"?
I'm tired of all this waitin',
Just give me .gif animation,
This code is only good for wasting time,
The applet says it's running,
And grey block is quite stunning,
But the screen remains as blank as my mind,**

(Midi solo)

**beep, beep, beep, beep, beep, beep,
beep, beep, beep, beep, beep, beep,
beep, beep, beep, beep, beep, beep,
beep, beep,
beep, beep, beep, beep, beep, beep,
beep, beep, beep, beep, beep, beep, beep,
beep, beep, beep, beep, beep,
beep,beep,**

**Netscape crash,
Boot 'em up!
Net goes down,
Dial back!
Logging on,
Still off-line!
Reload!**

**Try it now,
Still not up!
Netscape crashed,
What, again?
Boot it up,
Log it in,
Reload!**

The Last Word

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Computers keep getting smaller, cheaper, lighter, and more powerful. As notebook computers continue to make gains over their desktop cousins in terms of power and price, the attraction of portability is too much for some people to resist.

I've become all too familiar with this syndrome: We're halfway through deploying fourteen notebook computers, the first phase, for some of our litigators. Of course, we gave them the choice when I cheerily strolled into each office and asked the eternal question: "Desktop or Notebook?" Pad and pen were poised to record each answer, but I needn't have bothered. The answer, to a person, was notebook.

And so we ordered notebooks for each. But this is really the tail-end of the story.

This saga began months earlier when we began our search for notebooks. We looked at Toshiba and IBM and then Twinhead and Winbook. Of course, we looked at AST, found Acer promising for a bit and got a quote from Dell. By the time we finished evaluating all the different brands and models, comparing the various quotes, tracking down reviews, and asking questions of other notebook owners, - the models we were checking had been discontinued! So, - we had to start all over again! When all that kicked-up dust finally settled, we chose

Micron Electronics and their TransPort Pentium 133s.

When we first got a quote on the Micron units, back in September, the base price was \$5199 each. By the time we ordered them, in January, the base price was \$3599 each. You don't have to be an economics wizard to let out a low whistle at the state of the industry when the prices drop \$1600 in just four months.

And the other units did likewise. Each vendor was constantly calling or e-mailing their newest models, lower prices, new features or add-ons. Each of these led to a new wave of evaluation and comparison. Spreadsheet after spreadsheet, web site after web site. How much does it weigh? How many infrared ports does it have? Does it come with a modem? How about a carrying case?

But Micron was our choice and we stuck with it. Several days later an exhausted looking Federal Express man arrived with a cart loaded literally to the ceiling with boxes - *Micron Electronics* each one proudly proclaimed. I coaxed him into pushing the cart down the hall to my office door and we unloaded the whole stack of them. After he went on his way, relieved to be unburdened, I grabbed a felt-tip marker and immediately labeled each box with the initials of the user who was to receive it.

The following day the configuration began. Boxes were eagerly opened, carrying cases, CD's, registration cards, cables of all kinds were carefully set aside as we excitedly began the arduous process of installing all of the various pieces of software, configuring everything

for each individual user and preparing the machines to be the newest and most powerful tools in our company's arsenal! **Dramatic music builds!**

Of course, this process was not without blemish. Within seventy-two hours of unpacking, one of the machines blew a power switch and had to be returned for replacement. Another came out of the box with a huge dead spot on its screen and also had to be returned. A third arrived with no battery, making portable use somewhat difficult.

From all of this, however, we learned some important lessons:

1. Everybody wants the portability - until they see what's involved in packing and unpacking the unit, dealing with batteries and PC cards, suspend modes, track-point-stick-ball-glide thingies and all of the other attendant nuances that a notebook computer brings to the desk.

Lesson: Advise the user before they make the choice that there are drawbacks and responsibilities that accompany the selection of a notebook over a desktop system.

2. The day after the notebooks were issued, some of them arrived back in the office substantially different from the way they left. They were still the same on the outside, -black and roughly rectangular, but they now had different fonts, odd screen-savers and strange quirks. They greeted the morning with a maniacal laugh and when closing Windows 95 brought a familiar voice intoning "I'll be back!"

Those of us in the Information Services Department shot alarmed glances at each other: Supporting these units was going to be harder than what we bargained for. It was one thing when we expected the users to install Quicken or Myst, but quite another to see how they had completely reconfigured the entire look and feel of the unit, installing third-party utilities and drivers.

We second-guessed ourselves: should we have established a policy against this? It wouldn't have helped; the software still would have been installed, it just would have been better hidden.

Lesson: Be prepared for some support challenges! As soon as the machines leave the elevator downstairs with their person, they're basically out of our control. It's not safe to assume that it's still running the same video drivers it came with or that any of the original settings have been maintained. A safe bet is that within sixty days we will have to finish a support call by sitting a user down and explaining that their Beavis and Butthead screen saver is conflicting with the office E-mail system and will have to go.

3. Getting a notebook invokes a peculiar reaction in grown professionals. From the day the units arrived we had a steady stream of dignitaries in and out of our center, each wondering when they were going to get delivery of their new machines and peering over our shoulders with poorly concealed anticipation. It almost got to the point where we spent so much time explaining our progress that we had no time to actually *make* any progress.

As a result, there developed a tendency to rush systems so that people

who were constantly asking for them would get them. The downside was that some systems were not thoroughly tested and problems that were discovered by the first one or two users were corrected before the 7th and 8th users got their machines.

Lesson: Prepare your time scheduling carefully. Give each user an install date when they will receive their notebook and be conservative. The last thing you need is to have an early user report a serious problem just thirty minutes *after* you handed the boss his new notebook as he got on the elevator.

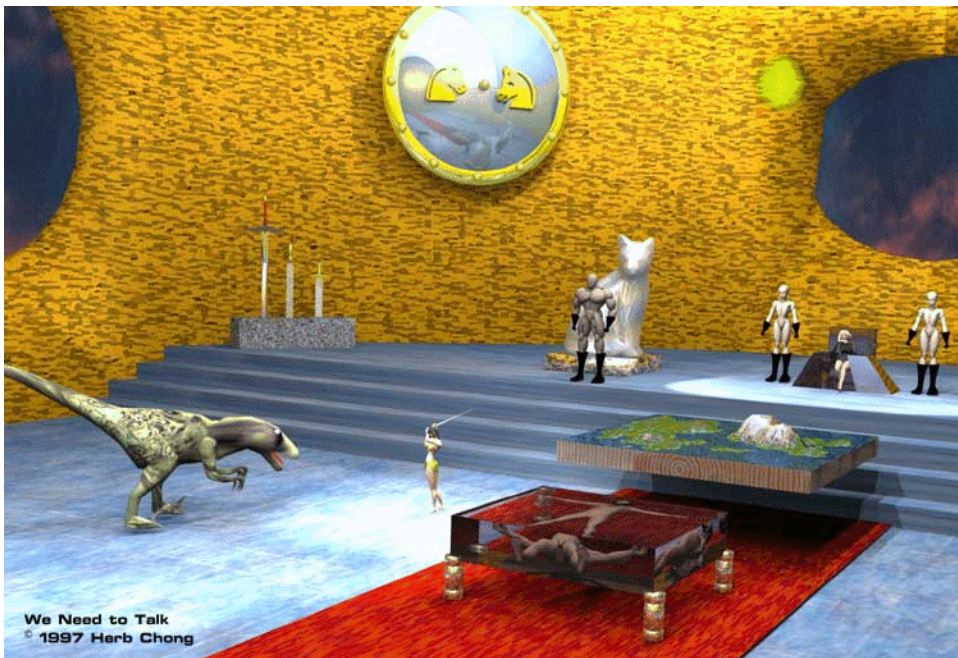
All of that said, the situation is stabilizing. The users are, by and large, content with their new computers and are experiencing the normal growing pains of trading a 386SX16 running DOS and weighs thirty pounds for a Pentium-133 that runs Windows 95 and can fit easily into their briefcase.

Of course, six weeks from now somebody will have a unit that's half the weight, twice the speed and \$300 cheaper and we'll get to do this all over again.

Ben Schorr has been doing the LastWord from almost the beginning of [WindoWatch](#). As a former consultant and now Director of Information Services at Damon Key Bocken Leong Kupchak, his is a very broad computer experience. Ben can be reached by email at bms@hawaiilawyer.com

The WindoWatch Art Gallery

This is Herb Chong's latest picture. He calls it *We Need to Talk!* The editor asked him to tell her what his inspiration was. It was a dumb question but his response wasn't exactly brilliant either. Some thing about the need to put in objects! We'll let it stand on its own...



We Need to Talk copyright 1997 by Herb Chong