WebPhone™ Version 2.01 Release Notes

PLEASE READ THIS DOCUMENT COMPLETELY BEFORE YOU DO ANYTHING ELSE!

WebPhone™ is a professional, feature rich voice communication system, which requires some preparation on your part in order to use it properly and to take advantage of all the functions that it has to offer. Please take the time now to read through these release notes (wpnotes.wri) and read the *How to* Guide (wphowto.wri) to learn how to operate your WebPhone (webphone.exe) before attempting to use it or if you require help.

0. Table of Contents

1. Entering information in the *Configure* window

When you start your WebPhone (webphone.exe) for the first time, it will open the *Configure* window for you to specify your *User Information* and *Network Parameters*. This information is very important. If you enter erroneous data, chances are your WebPhone will not operate properly. Once you enter your User Information and Network Parameters, press the **CONFIGURE** text, located at the top of the *Configure* window, to save the information.

2. Entering your User Information

Please enter all your User Information. If it is inaccurate, you will be misrepresented in NetSpeak's Information Assistance and other WebPhone users will not be able to find you to call you. In addition, your 'Caller ID' information will be incorrect when you place outbound calls.

Information

You can select how much of your user information will be published in NetSpeak's Information Assistance (all, some or none) to be made visible to other WebPhone users.

Use standard Post Office abbreviations
Use standard post office abbreviations for your State so other WebPhone users can find you via Directory Assistance (e.g., use FL instead of Florida).

3. Entering your Network Parameters
The Network Parameters required in this release are your:

- **E-mail address** that serves as your WebPhone number
- **WebPhone password** protects others from using your WebPhone number
- **Password Confirmation** used to confirm your WebPhone Password
- **POP Server address** used for retrieving your off-line voice mail messages
- **SMTP Server address** used for sending voice mail to off-line parties
- **E-Mail Login** used for connecting to your POP Server
- **E-Mail Password** used for connecting to your POP Server

WebPhone Password
Enter a unique password for your WebPhone. You will not need to enter your password each time you use the WebPhone, but you will need to enter your password if you reinstall the WebPhone for any reason, so take care not to lose your password. You may change your WebPhone password at any time by entering a new password in the WebPhone Password and password confirmations fields. A message will be displayed when your password change has been accepted. Please write this password down and save it in a safe place for future reference.

Network Parameter descriptions
To assist you in understanding the other Network Parameters, lets look at Roger Wilco's Network Parameters:

E-Mail address:	rwilco@provider.net
E-Mail Login:	rwilco
E-Mail Password	*******
Password Confirmation	*******
POP Server address:	mailhost.provider.net
SMTP Server address:	mailhost.provider.net

Roger has a dialup SLIP/PPP account to his Internet Service Provider (ISP) which has a domain name of "provider.net". Roger's E-Mail Login is "rwilco", which he defined when he established his Internet account with his ISP. The E-Mail login is used along with his provider's domain name to construct his E-Mail address: "rwilco@provider.net".

His ISP's POP Server (retains e-mail sent to you by other users) and SMTP Server (used to send e-mail from you to other users) are both named "mailhost" which is used along with his provider's domain name to construct the POP and SMTP Server addresses: "mailhost.provider.net".

If you do not know or are not sure of the values for some of these parameters, check your E-Mail program's (e.g., Eudora) setup screen, check your Web browser's (e.g., Netscape) setup screen, consult your Internet service provider or ask your network's system administrator if you intend to use WebPhone on a TCP/IP based network connected to the Internet. If you can only find your SMTP Server address, you can probably safely assume your POP Server address is identical.

If you intend to operate your WebPhone on a LAN or WAN that is not connected to the Internet, your network probably does not have a SMTP or POP Server. If this is indeed the case, you should leave everything **but** your E-mail address field blank (see section 6. "Operating your WebPhone on a Network").

Note: WebPhone only uploads your User Information and E-mail Address to its Connection Server for connection and Information Assistance purposes only. It does NOT upload your E-mail

Login and Password.

Changing your E-Mail Address
In the event you change your e-mail address (e.g., you change your Internet service provider), you will need to change your E-Mail address in the Network Parameters section of the WebPhone *Configure* window. A message will be displayed when your e-mail address change has been confirmed.

4. Finding someone to talk to

If you must try WebPhone (webphone.exe) before perusing the WebPhone *How to* guide (wphowto.wri), you will want to talk to somebody. WebPhone comes with an integrated Information facility for accessing NetSpeak's Information Assistance (e.g., like calling 411 and asking the operator for someone's phone number).

To access NetSpeak Information Assistance to find someone to talk to, perform the following with your WebPhone:

1. Press the [INF] button to open the *Information* dialog.
2. Check *Only Parties Online (this is checked as default)*
3. Enter your search criteria (more about search criteria below)
4. Press the *Search* button to begin your search.
5. Double click on the desired party returned from your inquiry to call them.
6. (Optional) Right click on a returned party to obtained more details
7. (Optional) Drag one or more of the returned parties to the *Personal Directory* window to save them.

Make the search criteria as specific as possible to speed up the search time. You may also give WebPhone (wpsetup.exe) to a friend or colleague so you can communicate with them straight away.

5. Information search criteria

The *Information* dialog allows you to enter the following search criteria:

> **First Name**
> **Last Name**
> **Organization**
> **City**
> **State/Province**
> **Country**

Some details you should know:

• Search criteria may consist of complete or partial data as well as the ***** and **?** wildcard characters. ***** is any number of any character and **?** is any single character.
• The maximum number of parties returnable from an inquiry is 100.
• If you cannot find a specific party then you can assume they do not have a WebPhone.

Examples
To search for anyone in the United States:
Select *UNITED STATES* in the Country field then press the *Search* button to begin your search.

To search for anyone with a last name beginning with "Ga" at NetSpeak:
Enter *Ga* or *Ga** in the LastName field and *NetSpeak* in the Organization field then press the *Search* button to begin your search.

6. New Features

In addition to the numerous features found in WebPhone 1.05, WebPhone 2.01 has the following new features:

· off-line voice mail
· call conferencing
· call transfer
· party selective text chat NoteBoard
· party specific call blocking
· party specific ring through DND
· enhanced user interface
· "on hold" MIDI music
· ringer volume control
· WebPhone password for security
· auto-selected TrueSpeech and GSM audio codecs
· Web browser helper application
· *How to* Guide

The new features are described below:

Off-line voice mail

When you call someone who is off-line, your WebPhone will prompt you to leave voice mail. If you leave voice mail, it will be e-mailed via your SMTP Server to the party's POP Server for later delivery. When the party's WebPhone comes back on-line, the party may retrieve any off-line voice mail that may be waiting.

Since WebPhone retrieves your off-line voice mail as e-mail from your POP Server, **always start your WebPhone before your E-mail program** (e.g., Eudora, Pegasus, etc.). If you should start your E-mail program before starting your WebPhone, your E-mail program may intercept your off-line voice mail and treat it as if it were a MIME attached document. If your E-mail program does intercept your off-line voice mail, simply save the mime encoded attachment to the WebPhone\ vmail\tmp directory and press the MSG button. You can recognize WebPhone off-line voice mail from the Subject and Text of the e-mail message.

See: **How to Get off-line voice mail** in the *How to* Guide (wphowto.wri)

Call conferencing

You may talk to two or more parties together on one Line. Conference calls are half duplex conversations and the conference initiator functions as the conference server and as such is responsible for the reflection of all audio streams to all the conference participants. The maximum number of parties that may conference together is dependent upon the conference server's connection speed to the Internet (or Intranet speed if used on a LAN or WAN). If the conference server has a 28.8Kb modem then 3 parties may reside on a conference call. If, on the other hand, the conference server has a ISDN modem (64Kbps), then 5 parties may reside on a conference call. Therefore, if one of your friends has a WebPhone on a T1 or faster connection to the Internet, make sure that person initiates all your large conference calls.

Any of the conference participants may add other participants and any participant (except the participant whose WebPhone is hosting the conference server) may exit the conference. If a *Conference Server* is specified, then the party whose WebPhone is hosting the conference need not participate.

See: **How to Conference calls** in the *How to* Guide (wphowto.wri).

Call transfer

You may transfer a call to another party resident in your Personal Directory.

See: **How to Transfer calls** in the *How to* Guide (wphowto.wri).

Party-specific call blocking
In order to prevent unwanted parties from calling, you may direct WebPhone to either reject calls from specific parties or route calls from specific parties to the answering machine. You may also direct WebPhone to reject all calls from any party not resident in your Personal Directory.

See: **How to Block calls from a party** in the *How to* Guide (wphowto.wri).

Party-specific ring-through DND
You may inform WebPhone to allow certain parties to ring through when Do Not Disturb is enabled.

See: **How to Update a party's information in your personal Directory** in the *How to* Guide (wphowto.wri).

Enhanced user interface
The WebPhone user interface has been enhanced for ease of use:

The Voice Activation Level (VOX) slider is now located in the flip door and is activated whenever the slider has focus (i.e. you click on it and nothing else after that).

The [INF] button has been added to the WebPhone to facilitate access to the *Information* window for obtaining NetSpeak Directory Assistance.

Audio transmit and receive indicators are located in the WebPhone display. These indicators also inform you of the audio codec (GSM or TSP) that is being used on the outbound audio stream (transmitted audio) and the inbound audio stream (received audio). The red indicator is the transmitted audio stream and the green indicator is the received audio stream.

Audio recording and playback controls have been removed from the flip door, *Voice Mail Messages* window and *Outgoing Messages* window and placed in the corresponding pop up dialogs: Voice Mail Composer, Voice Mail Player and Outgoing Message Composer. When you are prompted to leave voice mail, the *Voice Mail Composer* dialog will appear. When you double click on a voice mail message in the *Voice Mail Messages* window, the *Voice Mail Player* dialog will appear. When you double click or right click on an outgoing message in the *Outgoing Messages* window, the *Outgoing Message Composer* dialog will appear.

On hold MIDI music
Whenever a party places you on hold, you may listen to on hold music. The on hold music is specified by you in the *Configure* window in the *Sound Effects* section. Set the volume slider in the *Configure* window in the *Sound Effects* section to the desired volume level, or all the way to the left to disable the on hold music. You may substitute any MIDI based audio file for the default on hold music (hldmusic.mid). You may also obtain different on hold music clips from NetSpeak's Web site at **http://www.netspeak.com** on the *Get The WebPhone* page.

WebPhone password for security
Your WebPhone password protects your e-mail address form being used by another WebPhone user. Be sure to enter a password for your WebPhone that you will remember. You may change your WebPhone password at any time.

Auto-selected TrueSpeech and GSM audio codecs
If you are operating WebPhone on a Pentium®/80586-60MHz or faster PC, WebPhone will encode your speech with the TrueSpeech codec, otherwise, it will use the GSM codec. WebPhone is capable of transmitting audio encoded with one codec and receiving audio encoded with another.

<u>Web browser helper application</u>
The WebPhone Web browser helper application (wphelper.exe) works in conjunction with your Web browser (e.g., Netscape Navigator, Microsoft Internet Explorer...) to launch and/or place calls on your WebPhone which are initiated by clicking on a *HTML WebPhone Call Tag* present on home pages you visit on the Internet*.*

Configuring the WebPhone Helper Application in Netscape Navigator(tm)
From the Navigator menu bar, select "Options", "General Preferences..."
and select the "Helpers" page under preferences. Then select the
"Create New Type" button and enter "application" in the MIME type field
and "wpc" in the subtype field. Then select the "Launch the Application"
option, enter "c:\WebPhone\wphelper.exe" as the application name, and
select "OK".

Configuring the WebPhone Helper Application in MS Internet Explorer(tm)
From the Windows Explorer (not the Internet Explorer) select "View",
"Options..." an select the "File Types" page under options. Then select
"New Type" and enter "wpc" as the associated extension, "OPEN" as the action,
and c:\WebPhone\wphelper.exe as the application used to perform the action.

For more information, refer to the WebPhone Web browser helper application release notes (wphelper.txt).

***How to* Guide**
The *How to* Guide (wphowto.wri) explains how to operate the major functions of your WebPhone. It may be accessed by pressing the **?** button on the WebPhone or any of its windows or dialogs. The *How to* Guide will be integrated into the final release of WebPhone 2.01's help system.

7. Limitations of WebPhone Version 2.01
WebPhone 2.01 has the following limitations. To remove these limitations simply activate your WebPhone. See 8 for information on activating your WebPhone.

- Only one line may be used with a 3 minute talk time
- A maximum of 3 Phone Directory entries allowed
- 3 received Voice-Mail messages can be retained
- 2 custom OGM may be defined
- Cannot send offline voice mail, but can receive offline voice mail
- Cannot start a conference, but can participate in one

8. Purchasing WebPhone Version 2.01
To purchase WebPhone 2.01, use your Web browser and go to NetSpeak's Home Page at http://www.netspeak.com or call us on your WebPhone at sales@netspeak.com and provide your American Express, Visa or MasterCard information. NetSpeak will charge $49.95 plus applicable sales tax to your credit card, e-mail you a receipt and automatically activate your WebPhone within 24 hours.

If you are not connected to the Internet (i.e., using WebPhone only on a LAN or WAN), call us at +1 561 998-8700 or send a check or money order for $49.95 plus applicable sales tax to NetSpeak Corporation, 902 Clint Moore Road, Suite 104, Boca Raton, Florida 33487-2846.

9. Hardware and Software Requirements
You will need the following for WebPhone to operate properly:

- an 80486-33 MHz or faster computer (75 Mhz Pentium required for TrueSpeech)

- Windows 3.1, Windows for Workgroups 3.x, Win 95, Win NT or OS/2 Warp with Windows
- at least 4 MB RAM
- a 14.4 Kb or faster network communication link **(14.4Kb must enable error correction)**
- a WinSock 1.1 or higher compliant sockets library
- a Windows compatible sound card that supports 8 kHz or 11 kHz sampling
- a VGA display card supporting 256 or more colors
- 5 MB or more of free hard disk space

10. NetSpeak Corporation
We at NetSpeak Corporation wish to thank you for using WebPhone, the professional real time, full duplex, network based voice communication system for Microsoft Windows®. WebPhone is not just a state of the art Windows application that is easy and fun to use; it is a serious communications tool that will save you or your company significant amounts of money on long distance telephone calls. If you have should any problems or suggestions that make WebPhone better, please let us know. When reporting problems please use the bug report form (bugrpt.txt). The bug report form asks you for a complete description of the bug and the events that transpired which lead to its occurrence. We will make every effort to quickly fix the bug so it will not appear in the next release of WebPhone.

902 Clint Moore Road
Suite 104
Boca Raton, Florida 33487-2846

Telephone Numbers
Tel. 561-997-4001   Corporate Offices
Tel. 561-998-8700   Sales Department
Tel. 561-998-8710   Technical Support
Fax. 561-997-2401

WebSite
http://www.netspeak.com

E-mail addresses
info@netspeak.com   General info about WebPhone and NetSpeak Corporation
bugs@netspeak.com   WebPhone bug report form submission

WebPhone Numbers
sales@netspeak.com   call this number on your WebPhone to activate your WebPhone
support@netspeak.com   call this number on your WebPhone for technical support

11. Installing WebPhone 2.01
To install WebPhone, run **wpsetup.exe** from Windows and follow the instructions. The installation program will prompt you to specify a directory into which it will create the WebPhone directory structure (described below); then create a WebPhone group in the Program Manager (Win 3.1, WfW 3.x and WinNT), or under Start->Programs (Windows 95). The WebPhone group contains launch points for your WebPhone (WebPhone.exe), the WebPhone User Manual (wpman.exe) and these release notes (wpnotes.wri). You should retain the wpsetup.exe file to give to your friends and colleagues.

If you already have any previous WebPhone version installed, install WebPhone 2.01 in another directory.

12. WebPhone Directory Structure
This is the WebPhone file structure created during the installation process:
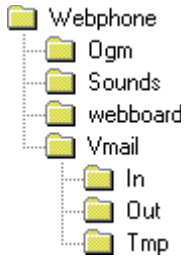
Files in the **WebPhone** directory:

license.txt	WebPhone license agreement
wpnotes.wri	release notes (this file)
wphowto.wri	*How to* Guide
WebPhone.exe	WebPhone executable
WebPhone.cfg	Configuration file
WebPhone.dir	WebPhone Directory database
wphelper.exe	Web browser helper application
wpdb.dll	database interface library
wputil.dll	WebPhone support DLL
wpnls.dll	WebPhone resource DLL
wpgsm.cdc	GSM codec DLL
wptsp.cdc	TSP codec DLL
tsd.dll	TSP codec DLL
bugrpt.txt	bug report form

Files in the **WebPhone\ogm** directory:

ogm.dir	directory of custom outgoing messages
default.wav	default outgoing message
xxxxxxxx.wav	user defined outgoing messages (x = 0,1...9,a,b...f)

Files in the **WebPhone\vmail** directory:

vmail.dir	directory of received voice mail messages

Files in the **WebPhone\vmail\in** directory:

xxxxxxxx.wav	GSM encoded received voice mail messages (x=0,1...9,a,b...f)

File in the **WebPhone\vmail\out** directory:

xxxxxxxx.wav	GSM encoded transmitted voice mail messages (x=0,1...9,a,b...f)

Files in the **WebPhone\sounds** directory:

badaddr.wav	voice notification when invalid address used
busy.wav	sound for busy
cnvtime.wav	your restricted talk time expiration notification
diradd.wav	restricted directory entry addition notification
error.wav	voice notification when error occurs
newvmail.wav	voice notification when new voice mail arrives
offline.wav	voice notification when called party is off-line
offlnvm.wav	voice notification when called party is off-line and you can leave voice mail
offlnum.wav	voice notification like offline.wav except you can leave voicemail
ogmadd.wav	restricted ogm definition notification
onhold.wav	voice notification when placed on hold
rcnvtime.wav	remote party's restricted talk time expiration notification
ring.wav	ring sound for inbound call
ringback.wav	ring sound for outbound call
vmreject.wav	remote party's voice mail reception restriction notification
webboard.wav	default WebBoard audio
hldmusic.mid	default on hold MIDI music
autoans.wav	auto answer sound

Libraries not installed but required by WebPhone to operate:

mmsystem.dll	Windows MCI library found in your windows\system directory.
winsock.dll	Windows sockets library usually found in your windows directory.

13. Operating your WebPhone on the Internet via a Dialup Connection

In order to place and receive calls with WebPhone, it must use the sockets library **winsock.dll** (or equivalent) supplied with the dialer program (e.g., Trumpet WinSock, Windows 95 dialup networking, NetCruiser, NetChameleon, etc.) you use to establish your dialup connection to your Internet service provider. WebPhone may be started before establishing your Internet connection: you may operate all features of WebPhone (e.g., Personal Directory maintenance, V-Mail playback, etc.) except placing and receiving calls and obtaining Directory Assistance. Once you establish your Internet connection, WebPhone will allow these features. This same mechanism applies if you lose your Internet connection while WebPhone is operating; WebPhone notifies you of the network failure and disables only these functions.

If you are running WebPhone connected to a LAN or WAN (e.g., Novell or Windows for Workgroups) using TCP/IP for its network communications (not IPX/SPX, NetBEUI, etc.), you should be aware of a potential problem:

Two or more versions of **winsock.dll** may exist on your disk drive: one version is used by your Internet dialer program and the other (probably located in your windows directory) is used by Windows 3.x to communicate to other workstations on your network. Chances are, if you start WebPhone before establishing your Internet connection, WebPhone's calling facilities will be enabled but you will only be able to talk to other WebPhone users on your network. If, on the other hand, you establish your Internet connection before starting WebPhone, WebPhone will enable you to call other WebPhone users on the Internet but not other WebPhone users on your network.

The reason for this problem is rather sticky: If no winsock.dll is loaded into memory (i.e., by your dialer program), WebPhone will attempt to load the first winsock.dll it finds on your hard disk in one of the directories specified in your PATH environmental variable (defined in your autoexec.bat file). It is very likely that the winsock.dll version WebPhone finds on your disk is the network version and not the dialer program's version (which probably resides in a directory not in your PATH).

This is not an issue on Windows 95 when you use its 32 bit winsock.dll (i.e. when you use the built in Windows 95 Dialer). You may call parties on both the Internet and on your network regardless of the order in which you initiated your connections and when you launched your WebPhone.

With all this said, if you are running Windows 3.x or Windows for Workgroups 3.x, make sure your network's version of winsock.dll resides in a directory in your PATH and your dialup program's version does not reside in a directory in your PATH. To use your WebPhone on the Internet, establish your Internet connection before you start your WebPhone. To use your WebPhone on your network, start your WebPhone before establishing your Internet connection.

14. Operating your WebPhone on a Network

WebPhone will operate only on TCP/IP based networks and requires the presence of **winsock.dll** (or its equivalent) located in memory or in a directory in your PATH.   If your network does not have a SMTP and POP server (which is most likely the case unless your network is connected to the Internet - see next section), WebPhone will only enable you to talk to other WebPhone users on your network.

Without an Internet connection, you will -

- only be able to place point to point calls using a party's IP address
- be unable to talk to WebPhone users out there on the Internet
- be unable to obtain Directory Assistance

Not being able to place point to point calls using a party's e-mail address in a small network environment is actually no great loss since you probably know (or can easily find out) everyone's IP address on your network in the first place. Just enter the IP addresses of all the parties you wish to talk to into your Personal Directory and call them from there. On a large WAN, however, acquiring everyone's IP address is a more formidable task.

If your company desires the ability to place point to point calls using a party's e-mail address, provide its own WebBoard announcements and provide its own Directory Assistance, contact NetSpeak at info@netspeak.com and inquire about a Business WebPhone System for your company.   The Business WebPhone System consists of an Intranet WebPhone Server, WebPhone Automatic Call Distributor, Credit Processing Server, WebPhone Telephone Gateway and WebPhone Forum Server.

15. Operating your WebPhone on a Network connected to the Internet
This is the best of both worlds. So long as your network uses TCP/IP for its communications and the Internet server on your network has a SMTP server and POP server, you can use all the features of your WebPhone and talk to all other WebPhone users on both your network and the Internet.

WebPhone version 2.01 does not have Firewall support and hence you will not be able to place calls to other WebPhone users on the Internet (only to users on your network).

16. Audio Programs and your WebPhone
Playing audio (WAV, MIDI, CD player...) through your sound card with another program while WebPhone is running is not a good idea and may prevent WebPhone from operating properly. When WebPhone requires control of the sound card (to play a sound effect or to allow conversation with a party) and the sound card is in use, it will attempt to terminate the sound being played. If WebPhone cannot gain control of the sound card, it will display a dialog box informing you "Sound Card Already In Use". If this occurs during an active conversation, the call will be placed on hold. Correct the problem (stop using the sound card with the other application) and take the call off hold to resume your conversation.

17. WinSock Programs and your WebPhone
The dialer program you use to connect to your Internet service provider via your modem is a WinSock based application. It might be necessary to reconfigure it correctly for WebPhone to operate properly. We have tested WebPhone with most of the major Internet startup kits and dialer programs. We have found that most of them require no modification. If you have Trumpet WinSock, however, the following TCP/IP parameters should have these <u>minimum values</u> defined in the File -> Setup screen:

MTU: 552   **TCP RWIN**: 2048   **TCP MSS**: 512

WebPhone uses three officially registered user port numbers: 21845, 21846 and 21847. In the remote event WebPhone informs you that one of its ports is in use by another WinSock application, you should identify the offending application and refrain from using it at the same time as WebPhone or start WebPhone before you start the other application. Please contact us at *support@netspeak.com* and give us the name and manufacturer of any such applications.

WebPhone uses at most 7 sockets at any given time so you should not encounter any conflict with other WinSock applications with respect to the number of available sockets. In the extremely unlikely event WebPhone informs you it is out of sockets, identify the offending socket sucking

application and refrain from running it at the same time as WebPhone or obtain a better winsock.dll that allows more sockets.

18. VGA Displays and your WebPhone

Your WebPhone and the WebPhone User Manual require the use of a VGA display card set in a 256 palletized color mode or better. If you can display more than 256 colors with your VGA card, do it, but not at the expense of resolution. The higher the resolution (i.e., 1024x768 is higher than 800x600), the more you will enjoy using your WebPhone.

If you are using a resolution of 256 colors, you may experience palette swapping (a transient change in colors) when you switch focus between WebPhone and the WebPhone User Manual or when you switch focus between WebPhone (or the WebPhone User Manual) and another Windows application that uses a large number of colors (such a Photoshop, Paintbrush, etc.). The faster your computer, the less noticeable this effect will be if it occurs.

Note that the animation of the cursor in the WebPhone User Manual during *Show Me* sequences is not visible when used with the ATI Graphics Pro Turbo sVGA PCI adapter (2MB and 4MB versions) in the 256 color mode regardless of resolution. This phenomenon may simply be a result of an incompatibility with the chip sets used on the motherboards of our "build them yourself because we are cheap" computer systems and may not affect users of the said VGA card on their computers. This phenomenon may occur with other high powered VGA cards. If it does, please let us know via e-mail at *bugs@netspeak.com*.

If you have an Alliance ProMotion display adapter in your computer system (like in the NEC *Ready 9532*), the background color of the data entry fields on your WebPhone will periodically appear in random colors. It appears that the Null Brush (programmer speak) in Windows 95 is not handled properly by the Windows 95 driver for this video adapter. Contact NEC at 508-635-4706 for an updated Windows 95 video driver.

19. Sound Cards and your WebPhone

WebPhone will work with any Windows compatible sound card that supports an 8 kHz or 11 kHz sampling frequency.

Important Information here:
Make sure your Voice Activation Level (located in the WebPhone flip door), is set to recognize silence. Otherwise, the parties you call using half duplex sound cards will never get an opportunity to talk (they will always see LISTEN in their display and you will always see TALK in your display). If this happens, stop talking into the microphone and move the Voice Activation Level (VOX) slider to the right until the VOX meter displays *Silence* and you see the red bar. Now verify the VOX enunciator displays *Speaking* and the red bar disappears (covered by the green bar) only when you talk into the microphone.

Most Windows compatible sound cards enable WebPhone to allow you to control their microphone and speaker volume via the MIC and SPK controls on the flip door. However, some do not and if you have such a sound card, you may be able to control the microphone and speaker volume from a mixer application that may have come bundled with your sound card. If you do not have such a mixer application (as is the case with most inexpensive 8 bit sound cards), you can probably control the speaker volume with a dial on the back of the sound card. If no dial exists, you may be able to control the speaker volume only by adjusting the volume controls on your speakers and you probably have no control over the microphone volume. If this is the case, it is probably time to get a new sound card.

If you are running WebPhone on Windows 95 or Win NT, you may not be able to control your microphone volume with the MIC control on the flip door (this is dependent upon the sound card you have installed). If you cannot adjust your microphone with the MIC control on the flip door,

use the Configure Sound Card Devices screen to select the correct microphone volume device.

You will obtain superior audio performance if you enable your sound card's automatic gain control (AGC) via the mixer application bundled with your sound card. If you have an 8 bit sound card you may not have AGC. If you do not have AGC but still have control over the input (recording) and output (speakers) gains, increasing the gains to 2x or 4x may improve the audio performance.

WebPhone version 2.01 enables you to select the sound devices to use for your microphone and speakers. Therefore, if you have more than one sound device driver installed and your microphone and/or speakers are not operational, use the Configure Sound Card Devices screen to select the correct sound devices.

20. Modems and your WebPhone
If you have a modem connection (dialup) to your Internet service provider, make sure your modem has error correction and data compression enabled (this is the default for almost every modem we know of). If your 14.4 kb modem does not support data compression (you have an ancient modem), you and the parties you talk to will not obtain the audio performance that is possible using data compression. To verify your modem has error correction and data compression is enabled, consult your modem's documentation.

Bandwidth and your Answering Machine
If you have a 14.4Kb modem and have your answering machine enabled, when you are talking to a party on a Line and one or more parties call and engage your answering machine (you fail to answer the calls in time), your answering machine will play an OGM to each of the parties in the background. This will degrade the audio performance of your conversation. It is recommended that you disable your answering machine while talking on your WebPhone. If you have a 28.8Kb modem this situation is not significant until you have 2 or more simultaneous calls being serviced by your answering machine while you are talking on your WebPhone.

21. WebPhone Databases
WebPhone maintains 4 databases:

The WebPhone Directory database is located in the file: **webphone\webphone.dir**
The database of custom OGMs is located in the file: **webphone\ogm\ogm.dir**
The database of received V-Mail is located in the file: **webphone\vmail\vmail.dir**
The database of cached WebBoards is located in the file: **webphone\webboard\ wblist.dir**

We recommend backing up these database files and the WebPhone Configuration file (**webphone\webphone.cfg**) periodically in case it becomes necessary to reinstall the WebPhone.

The configuration file contains all of WebPhone's operational parameters. In the event this file becomes corrupted or destroyed, WebPhone will inform you of this fact by asking you if you want to re-create a new configuration database. If you opt to re-create a new one, you will have to re-enter all your User Information again in the *Configure* window. If you opt not to have WebPhone create a new one, restore the saved file and start WebPhone again. If WebPhone still informs you the configuration is corrupted, you must opt to let WebPhone re-create it.

22. How your WebPhone works
As you speak into the sound card's microphone, WebPhone samples the incoming audio signal at 8kHz or 11kHz at 8 bit or 16 bit samples per second (e.g., 8 kHz - 8 bits/sample on 8 bit sound cards and 16 bits/sample on 16 bit sound cards), compresses the raw audio signal, encrypts the

compressed audio, then transmits it in packets via TCP/IP over your communication link to another WebPhone which receives the packets of compressed audio, pieces them together, decrypts the compressed audio, decompresses the audio, then sends it to the sound card's speaker on that WebPhone's computer for the other party to hear.

WebPhone is able to provide you with better than telephone quality audio due to the fact WebPhone samples the audio signal at a greater frequency and bit depth (more audio information per unit time) than most conventional telephone systems. The degree of signal loss is so small, the decompressed audio signal still contains more information than the conventional telephone audio signal. WebPhone enables you to communicate to other WebPhone users in real time due to the fact that WebPhone compresses the audio signal faster than it can transmit the compressed audio. The size of 1 second worth of audio, once compressed, can be transmitted in less than 1 second on a 14.4 Kb modem or faster communications link. When you use WebPhone on the Internet, you may experience transmission delays during periods of heavy activity. This is the nature of the Internet. In addition, the farther away the party is geographically, the longer it takes to transmit data. However, since you cannot see the party's lips moving (at least not until we introduce the video WebPhone version), you will probably not notice any lag time once the conversation is in progress.

23. GSM and TrueSpeech™ audio codecs
GSM and TrueSpeech are standardized audio compression and decompression algorithms that WebPhone employs to provide you with real time audio communications when used over a 14.4Kb or faster communications link. Data compression must be enabled when using GSM and a 14.4Kb modem connection for real time performance.

GSM stands for Global System for Mobile communications and is the European standard digital cellular communications system. GSM provides close to a 5:1 compression of raw audio with an acceptable loss of audio quality on decompression. The GSM codec was developed by Jutta Degener (jutta@cs.tuberlin.de) and Carsten Bormann (cabo@informatik.uni-bremen.de) of the Communications and Operating Systems Research Group, Technische Universität Berlin: Phone: +49.30.31424315, Fax: +49.30.31425156.

WebPhone employs a number of sophisticated enhancements to GSM in order to improve its performance over the Internet: codec optimized for Intel architecture, artificially imposed ramping and backlogging, intelligent half duplex switching sensitivity, etc.

TrueSpeech, a product of DSP Group, Inc., is WebPhone's codec of choice when WebPhone is used on a Pentium/80586-60MHz or faster PC. The TrueSpeech codec compresses 8kHz, 16bit audio 15:1 for a transmission rate of 8.5K bits per second (NetSpeak's enhanced GSM transmission rate is about 12K bits per second). You will transmit using TrueSpeech if you have a pentium class computer. This will provide the listner with enhanced audio quality.

24. Half Duplex vs. Full Duplex
Half duplex mode is like talking on a conventional speaker phone or walkie-talkie: you talk and the other party listens, then the other party talks and you listen. Actually, it is a great way to enforce proper conversation etiquette, yet it is not the usual way we communicate. Full duplex is the natural way to converse: the talking parties can both talk and listen at the same time, and are free to interrupt each other at any time.

If you do not have a sound card that can input audio from the microphone and output audio to the speakers at the same time, WebPhone will operate in half duplex mode. The obvious solution to this problem would be to rush out and buy a full duplex sound card at your local computer store.

An alternative solution to obtaining full duplex communications is to put another conventional half duplex sound card in your computer. This is not a task for those of you who are uninitiated in the

ways of IRQs, DMAs and I/O base address settings (if you did not understand this last sentence, this means you). We do not recommend this approach. If you do wish to pursue this approach, you will need to attach your microphone to one sound card and your speakers to the other. To determine which sound cards WebPhone is using for your microphone and speakers, open the flip door and set your Voice Activation Level. If you do not observe voice activity while speaking into the microphone, swap your microphone and speakers between the two sound cards or swap the sound devices in the *Configure* window in *Configure Sound Card Devices* section.

If you have a Creative Labs' SoundBlaster 16 or AWE32 sound card, direct your Web browser to http://www.creaf.com and download the full duplex driver. This will enable your SoundBlaster card for full duplex operation.

25. Troubleshooting
<u>Received audio is delayed and choppy</u>
This may happen if you have a bad connection to the Internet and/or you are talking during a heavy traffic period on the Internet (slow packet transmission because of diminished available bandwidth). This is not a problem with WebPhone but a natural phenomena associated with the Internet. If this is the case, try reconnecting to the Internet or call at another time, or see "Advanced audio controls" below.

This may also happen if you are talking to a party who is using a 80486 based PC and a 14.4Kb modem that does not have error correction and data compression enabled. Instruct them to enable error correction and data compression to resolve this problem. If their modem does not support data compression, it is time for them to acquire a new modem (get a 28.8Kb modem this time).

<u>You cannot hear the remote party</u>
If WebPhone always displays TALK and never displays IN USE or LISTEN, then you must raise your Voice Activation Level (the VOX slider in the flip door) so WebPhone can detect silence and allow the remote party to talk (this is would not be the case if both you and the remote party have full duplex sound cards). If this is not the case and WebPhone displays LISTEN when you would expect to hear something from the remote party, check your Speaker volume on the flip door and in your sound card's mixer application (if it came with one). If you are running Windows 95, use the Volume Control dialog. If you still cannot hear the remote party and WebPhone does not periodically display LISTEN, the remote party's Voice Activation Level or MIC volume is not set correctly. If this is indeed the case, there is not a lot you can do about it at this time except try to reach to party via e-mail or conventional telephone and tell them to adjust their MIC and/or Voice Activation Level. See next section.

<u>The remote party cannot hear you</u>
Refer to the previous section. If WebPhone always displays LISTEN, the remote party's MIC volume is too high and/or their Voice Activation Level is set incorrectly so their WebPhone cannot detect silence and is constantly transmitting (not giving you an opportunity to talk). If this is not the case and WebPhone displays IN USE but never TALK when you speak into the microphone, increase your MIC volume and check your Voice Activation Level to verify WebPhone can detect your voice. If WebPhone does display TALK when you speak into the microphone and LISTEN when the remote party speaks and the remote party still cannot hear you, the remote party's speaker volume is probably not set correctly. If this is indeed the case, there is not a lot you can do about it at this time except try to reach to party via e-mail or conventional telephone and tell them to raise their speaker volume.

<u>You obtain the WebPhone Error: *Cannot access your sound card driver!*</u>
WebPhone 2.01 attempts to use the first sound card driver it finds installed in Windows. If you have more than one sound card driver installed, select the correct driver under Configure Sound Card Devices.

<u>Advanced audio controls</u>
WebPhone 2.01 provides two additional controls that can be used to improve audio quality under certain circumstances. They are known as "VOX Delay" and "Spkr Delay" and will appear in the flip door if you type "sliders=on" in the WebPhone number and press SND.

The speaker delay setting specifies how long WebPhone will wait once audio is received before it begins playing. Increasing the speaker delay will result in a longer elapsed time period from when the person you are talking to says something until you hear it, but increases the likelihood that what they said will be played back continuously without breakup. If you are experiencing choppy sound quality, try increasing the speaker delay; if you are experiencing too long a delay in hearing the other party, try decreasing the speaker delay. The speaker delay ranges from a minimum of zero seconds (no delay) to a maximum of five seconds, with a default setting of 125 milliseconds.

The VOX delay setting controls the length of time for which WebPhone must detect silence before it will stop sending audio data. This setting is useful under some conditions where the other party is hearing clicking or "cutting out" of what you are saying. If people you are talking to hear portions of words cut off or clicking between words, try increasing the VOX delay; if it seems to take too long before the other party can talk after you finish talking, try decreasing the VOX delay. The VOX delay ranges from a minimum of 50 milliseconds to a maximum of two seconds, with a default setting of 500 milliseconds.

For additional information, see the NetSpeak home page, at http://www.netspeak.com.

26. Acknowledgments
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