WebPhone™ Version 1.05 Release Notes

PLEASE READ THIS DOCUMENT COMPLETELY BEFORE YOU DO ANYTHING ELSE!
(you probably won't, but we have to tell you this anyway).

Use the Interactive User Manual

WebPhone™ is a professional, feature rich voice communication system which requires some preparation on your part in order to use it properly and take advantage of all the functions it has to offer. Therefore, please take the time now to read these release notes (wpnotes.wri) then explore the interactive multimedia WebPhone User Manual (wpman.exe) 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 Configuration Control Panel

When you start your WebPhone (webphone.exe) for the first time, it will open the WebPhone Configuration Control Panel for you to specifiy your *User Information* and *Network Parameters*. This information is very important. If you enter bogus data, chances are your WebPhone will not operate properly. Once you enter your User Information and Network Parameters, Press the **CONFIGURE** text, located on top of the Configuration dialog, to save the information.

To change your Configuration Data after installation
1. Press the [CFG] button on your WebPhone to open the Configuration dialog.
2. Update the desired data.
3. Press the 'CONFIGURE' text, located on the top of the Configuration dialog, to save your changes.

2. Entering your User Information

Please enter all your User Information. If it is inaccurate, you will be misrepresented in NetSpeak's Directory Assistance Server 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. You can select how much of your user information will be published in Directory Assistance (all, some or none) which is visible by other WebPhone users.

Please use standard post office abbreviations for your State and Country so other WebPhone users can find you via Directory Assistance (e.g., use USA instead of United States). If you need to change your User Information make your changes and the next time you place a call your updated information will be automatically updated on NetSpeak's Connection Server. If you need to change your email address refer to the 'Change of email Address' section below.

3. 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 User Information section of the WebPhone Configuration Control Panel. If you have activated your WebPhone, you will need to contact us at support@netspeak.com via e-mail or on your WebPhone and inform us of the change. If you have not activated your WebPhone, please contact us at support@netspeak.com via e-mail or on your WebPhone in order for us to remove your old record from our Connection and Directory Assistance Servers.

4. Entering your Network Parameters

The important Network Parameters required in this release are:

- your **e-mail address**
- your **IP address** (only if you have a fixed IP address)

To assist you in understanding your Network Parameters, lets look at Roger Wilco's Network Parameters:

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

Roger has a dialup SLIP/PPP account to his Internet Service Provider (ISP) and therefore has no fixed IP address (it is automatically assigned when he establishes his connection). Therefore, his IP address field remains blank.

His Internet Service Provider's domain name is "provider.net". His E-Mail Login, "rwilco", which he defined when he established his Internet account with his provider, 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 which 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** the IP 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 Directory Assistance pupuoses only. It does NOT upload your E-mail Login and Password.

5. Finding someone to talk to

If you must try WebPhone (webphone.exe) before perusing the WebPhone User Manual (which you should do), you will want to talk to somebody. WebPhone comes with an integrated Directory Assistance facility (e.g., like calling 411 and asking the operator for someone's phone number).

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

1. Press the [DIR] button to open the Directory dialog.
2. Press the [Information] button in the Directory dialog to open the Information dialog.
3. Check *Only Parties Online*
3. Enter your search criteria (more about search criteria below) in the Information dialog.
4. Press the `Information` text on the top of the Information dialog 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 Directory dialog to save them.

You could also give WebPhone (wpsetup.exe) to a friend or colleague so you can communicate with them straight away.

6. Directory Assistance search criteria

The Information dialog (launched from the Directory) allows you to enter the following search criteria:

> **FirstName**
> **LastName**
> **Organization**
> **City**
> **State/Province**
> **Country**

Some details you should know:

• You cannot perform a search without entering some search criteria.
• Search criteria consists of complete or partial data and does NOT use wildcard characters.
• 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.

Some examples:
To search for anyone in the United States enter *USA* in the Country field then press the 'Information' text on the top of the Information dialog to begin the search.

To search for anyone with a last name beginning with "Ga" at Microsoft enter *Ga* in the LastName field and *Microsoft* in the Organization field then press the 'Information' text on the top of the Information dialog to begin the search.

To find the WebPhone number for Patty Johnsen in Minneapolis, Minnesota, enter *P* or *Pat* or *Patty* in the FirstName field, *Johnsen* in the LastName field, *Minneapolis* in the City field and (optionally) *MN* in the State/Province field then press the 'Information' text on the top of the Information dialog to begin the search. If you use *P* or *Pat* instead of *Patty* in the FirstName field, chances are you will get back a number of parties with the last name Johnsen in Minneapolis, Minnesota whose first name begins with "P" or "Pat" respectively.

7. Features
WebPhone version 1.05 has the following features:

· telephone quality real time speech
· point to point calling via e-mail or IP addressing (not IRC chat)
· full duplex operation
· 4 lines for simultaneous conversations
· call holding, muting and blocking
· last party recall
· complete caller ID
· speed dialing
· conversation encryption
· personal phone directory
· integrated real time directory assistance
· integrated voice mail system for sending and receiving voice mail
· party specific user definable custom outgoing messages
· user definable sound effects
· integrated, context sensitive interactive multimedia user manual
· WebBoard which periodically displays hot spots on the World Wide Web to visit
· state of the art software equipment based graphic user interface for simplified ease of use
· operates over the Internet as well as over any TCP/IP based LAN or WAN
· and many more …

8. Limitations of WebPhone Version 1.05
WebPhone version 1.05 has the following limitations:

- **3 minutes of talk time allowed per call**
- **Only 1 line may be used**
- **A maximum of 3 Phone Directory entries allowed**
- **2 received Voice Mail Messages can be retained**
- **1 custom Outgoing Message may be defined**

You may make any number of calls and there is no time limit on the use of the software. To remove these limitations, activate your WebPhone.

9. Purchasing and Activating your WebPhone
To Activate your WebPhone and remove the above limitations 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 (remove the limitations) within 24 hours.

If you are not on the Internet (i.e., using WebPhone only on a LAN or WAN), call us at (407)-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. Please allow 3 to 7 days for your activation key to arrive via conventional mail.

10. Hardware and Software Requirements

You will need the following for WebPhone to operate properly:

- an 80486-33 MHz or faster computer
- Windows 3.1, Windows for Workgroups 3.x, Windows 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 which 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

11. Distributing your WebPhone

You may make any number of copies of the WebPhone (wpsetup.exe file) and give them to all your friends and colleagues to communicate with (in fact, we encourage you to do this). Please refer to the WebPhone License Agreement (license.txt) located in your webphone directory for more details.

12. NetSpeak Corporation

We at NetSpeak Corporation wish to thank you for evaluating 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 which is easy and fun to use; it is a serious communications tool which will save you or your company significant amounts of money on long distance telephone calls. We hope you enjoy using it as much as we enjoyed building it for you. If you have should any problems or suggestions which could make WebPhone better, please let us know.

If, after using WebPhone version 1.05, you would like to bundle WebPhone with your company's hardware or software product(s), present a WebBoard message or just wish to thank us for providing you with such an incredibly wonderful product, please do not hesitate to contact us.

902 Clint Moore Road
Suite 104
Boca Raton, Florida 33487

Telephone Numbers
Tel. 407-997-4001   Corporate Offices
Tel. 407-998-8700   Sales Department
Tel. 407-998-8710   Technical Support
Fax. 407-997-2401

WebSite
http://www.netspeak.com

E-mail addresses
info@netspeak.com   General information about WebPhone and NetSpeak Corporation
support@netspeak.com   WebPhone customer and technical support
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

13. Installing WebPhone Version 1.05

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 a beta version of WebPhone installed, install WebPhone 1.05 in another directory. If you already have a previous WebPhone 1.0X version installed, install WebPhone 1.05 in the same directory (this will retain WebPhone's activated status if you have activated the previous 1.0X version of WebPhone).

14. WebPhone Directory Structure

This is the WebPhone file structure created during the installation process:

```
📁 webphone
├─ 📁 ogm
├─ 📁 sounds
└─ 📁 vmail
   ├─ 📁 in
   └─ 📁 out
```

Files in the **webphone** directory:

license.txt	WebPhone license agreement
wpnotes.wri	release notes
webphone.exe	WebPhone executable
webphone.cfg	Configuration database
webphone.dir	WebPhone Directory database
wpman.exe	WebPhone User Manual executable
wpman.apr	WebPhone User Manual library
wpdb.dll	database interface library
wpaudio.dll	WebPhone audio support DLL
wpgsm.cdc	GSM codec DLL
bugrpt.txt	bug report form
wpb*n.xxx*	WebBoard - *n: 0,1 and xxx: wav, gif* and *inf*

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:

ring.wav	ring sound for inbound call
ringback.wav	ring sound for outbound call
busy.wav	sound for busy
error.wav	voice notification when error occurs
offline.wav	voice notification when called party is off-line
newvmail.wav	voice notification when new voice mail arrives
badaddr.wav	voice notification when invalid address used
onhold.wav	voice notification when placed on hold
rcnvtime.wav	remote party's restricted talk time expiration notification
cnvtime.wav	your restricted talk time expiration notification
diradd.wav	restricted directory entry addition notification
ogmadd.wav	restricted ogm definition notification
vmreject.wav	remote party's voice mail reception restriction notification
webboard.wav	default WebBoard audio

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.

15. 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., Directory maintainence, V-Mail playback, etc.) except placing and receiving calls and obtaining Directory Assistance. Once you establish your Internet connection, WebPhone will allow you to place and receive calls. This same mechanism applies if you lose your Internet connection while WebPhone is operating; WebPhone notifies you of the network failure and disables only its calling functions.

If you are running WebPhone on a Windows 3.x or Windows for Workgroups 3.x workstation 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. 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.

16. 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 adresses of all the parties you wish to talk to into your WebPhone Directory and call them from there. On a large WAN, however, acquiring everyones 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 consisting of a WebPhone Connection Server, Directory Assistance Server, Credit Authorization Server, Business WebPhones and Agent WebPhones.

17. 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 1.05 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).

18. 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.

19. 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 which allows more sockets.

20. VGA Displays and your WebPhone

Your WebPhone and the WebPhone User Manual require the use of a VGA display card set in a 256 palettized 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 have a VGA card whose utility program lets you define the color palette mode, **do not** select an unpalettized color mode when using only 256 colors. If you do, your WebPhone will not appear correctly on your screen.

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 which uses a large number of colors (such a Photoshop, Paintbrush, etc.). The faster your computer, the less noticable 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 phenomenom 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 phenomenom 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.

21. Sound Cards and your WebPhone

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

Important Information here:
Make sure your Voice Activation Level (specified in the WebPhone Configuration control panel under WebPhone Parameters), 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 (VAL) slider to the right until the VAL meter stops displaying *SPEAKING* and you see the red bar. Now verify the VAL annunciator 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 which 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 dependant upon which 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 1.05 enables you to select which 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.

22. 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 which is possible using data compression. To verify your modem has error correction and data compression is enabled, consult your modem's documentation.

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.

23. WebPhone Databases
WebPhone maintains 4 databases:

The WebPhone Configuration database is located in the file: **webphone\webphone.cfg**
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**

We recommend backing up these database files periodically to avoid the possible mental distress which usually accompanies the unwanted loss of important data.

The main WebPhone database is the configuration database which contains all of WebPhone's operational parameters. In the event this database 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 Configuration Control Panel. If you opt not to have WebPhone create a new one, restore the saved database table and start WebPhone again. If WebPhone still informs you the configuration database is corrupted, you must opt to let WebPhone re-create it.

24. 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 progess.

WebPhone provides you with reasonably secure conversations because it encrypts each packet with a proprietary encryption algorithm.

25. GSM

GSM is a standardized audio compression and decompression algorithm which WebPhone employs to provide you with real time audio communications when used over a 14.4 Kb or faster communications link. Data compression must be enabled when using 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, threaded coding and decoding, heuristic dynamic packet sizing, artificially imposed ramping and backlogging, intelligent half duplex switching sensitivity, etc.

26. 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 (like almost everyone else), 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. If you did this, you would probably become quite frustrated since there are very few full duplex sound cards in the retail stores and the probability that your local computer store has any of them is nil. To make matters worse, the avarage retail price for a full duplex sound card is in the $150 to $300 price range.

Another 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, go into the Configuration Control Panel 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 Sound Card Devices screen.

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 make your SoundBlaster card a full duplex sound card.

27. Problems with your WebPhone

Like all good software engineers, we have designed and implemented your WebPhone to be reliable and free of bugs. However, like most human beings, we can make mistakes. Therefore, there is a possibility that a bug may rear its ugly head under circumstances we failed to produce during the exhaustive testing phase of development. If by chance you are the victim of a bug, you may take pride in the knowledge that we at NetSpeak are not perfect and can avail yourself of the opportunity to chastise us personally by completing the WebPhone bug report form (bugrpt.txt) and e-mailing it to *bugs@netspeak.com*. 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.

28. Troubleshooting

Received audio is delayed and choppy
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 diminshed 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.

This may also happen if you are talking to a party who is using a 14.4Kb modem which 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).

You cannot hear the remote party
If WebPhone always displays TALK and never displays IN USE or LISTEN, then you must raise your Voice Activation Level (in the Configuration control panel) 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.

The remote party cannot hear you
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 a General Protection Fault when starting, running or exiting the User Manual</u>
This may be due to one of the following reasons:

1. You have QuickTime for Windows installed improperly.
Try removing Quicktime for Windows altogether and see if the problem goes away. If the problem does go away, try and re-install Quicktime for Windows and try again. If the problem persists and you must have QT installed, we are sorry but we do not have a fix at this time.

2. You have a memory conflict with your Video Display adapter.
Try setting your screen resolution to standard VGA (640x480) using the standard Windows driver. If the problem persists, it is not a memory confict with your VGA adapter. If the problem is resolved, you will need to confer with your VGA adapter manual and see if there are any memory address ranges which Windows should not be touching (refer to also emm386 or qemm).

3. You have QEMM installed and there is a memory conflict.
Try removing QEMM and see if the problem persists. If the problem is resolved, try changing the memory address inclusions and exclusions until the problem is resolved permanently.

<u>You obtain the WebPhone Error: *Cannot access your sound card driver!* </u>
WebPhone version 1.05 attempts to use the first sound card driver it finds installed in Windows. If you have more than 1 sound card driver installed, select the correct driver under Configure Sound Card Devices.

29. Acknowlededements
WebPhone is a trademark of the NetSpeak Corporation.
Windows is a registered trademark of Microsoft Corporation.