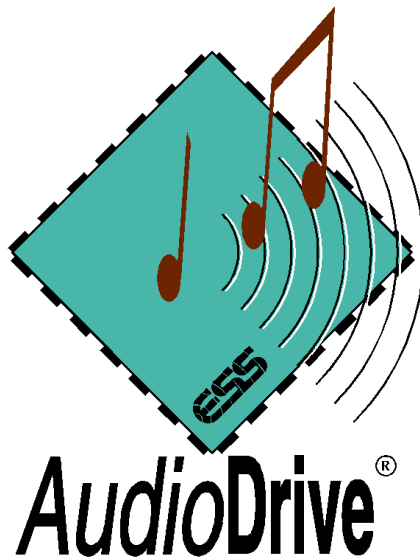# Audio Applications
USER GUIDE

Version 3.0

August, 1994

ESS Technology, Inc.

46107 Landing Parkway

Fremont, California 94538

Contents

1:   Introduction

The Audio Applications enable you to record, store, and play back voice, music, and other sound on your PC. These applications are designed to enhance communication and improve productivity by incorporating audio into your daily use of the computer.

The Audio Applications take full advantage of the capabilities of the *Audio*Drive® family of audio chips (ES488, ES1488, and ES688).

The ES488 and ES1488 provide for the recording and play back of monophonic audio files. The ES688 provides stereo capabilities and a five-channel mixer. See your hardware manual for a description of your computer's capabilities.

Features of the Audio Applications

The Audio Applications:

- Are compatible with Microsoft Windows 3.1.

- Comply with Windows 3.1 Object Linking and Embedding (OLE) requirements.

- Enable you to add, edit and update voice annotations in OLE-compliant Windows applications such as WordPerfect, Word, Excel, and Lotus 123.

- Record and play audio files in the PCM (Pulse Code Modulation) format, compatible with Windows 3.1 and other sound cards that use this format.

- Are compatible with the Microsoft Windows Sound Recorder for recording and play back.

Audio Applications Overview

- The **Audio Recorder** records, compresses, stores and plays voice, music, and other sound in .WAV and .AUD formats.

- The **Recording Control** regulates the recording level and stereo balance of multiple sources during recording.

- The **Volume Control** regulates the volume and stereo balance of sound during playback.

- The **Mixer** combines signals from multiple sources during playback.

- The **Extended Recorder** records, compresses, and stores audio files directly to the hard disk, giving you longer recording times.

- The **Audio Clip Library** enables you to organize your audio files in folders. It includes a variety of audio files under the folders **music**, **phrases** and **sounds**.

- The **Talking Calculator** announces numbers entered, operation executed and resulting answers.

- The **Talking Clock** announces the time on request.

- The **Chime** provides a choice of audio announcements at 15, 30 or 60 minute intervals.

- The **Audio Reminder** features two alarms. The time these alarms go off can be set and the audio announcement of your choice can be selected.

- The **Stopwatch** makes audio announcements for time elapsed.

- The **Timer** makes audio announcements for time remaining.

The Windows driver is installed when you run the Setup program. The next chapter describes the installation process.

2:   Installation

Introduction

The Setup program provides an easy way for you to install the *Audio*Drive driver and applications.

Starting the Setup Program

First-time installation:

1. Start Windows 3.1 or higher.

2. In Program Manager, choose **Run** from the File menu.

3. Place Disk 1 in a floppy drive. In the Run dialog box, type the letter of the drive and **setup** (for example **B:\setup**), then click the **OK** button. The first *Audio*Drive Setup window appears.

Changing the setup after Audio Applications are installed:

1. Start Windows and open the Audio Applications program group.

2. Double-click the **Setup** icon, or select it and press the **Enter** key.

The first *Audio*Drive Setup window appears.

Installing the *Audio*Drive Driver and Applications

Here is the first *Audio*Drive Setup window:

Note the instructions, then click **Continue** to go on, or **Exit** to leave Setup.

In the second Setup window, click the first button to install the hardware driver (if an AudioDrive driver has been previously installed, first choose Driver Uninstallation, restart windows, then install the new driver), the second button to install the Audio Applications, or the third button to remove the current hardware driver.
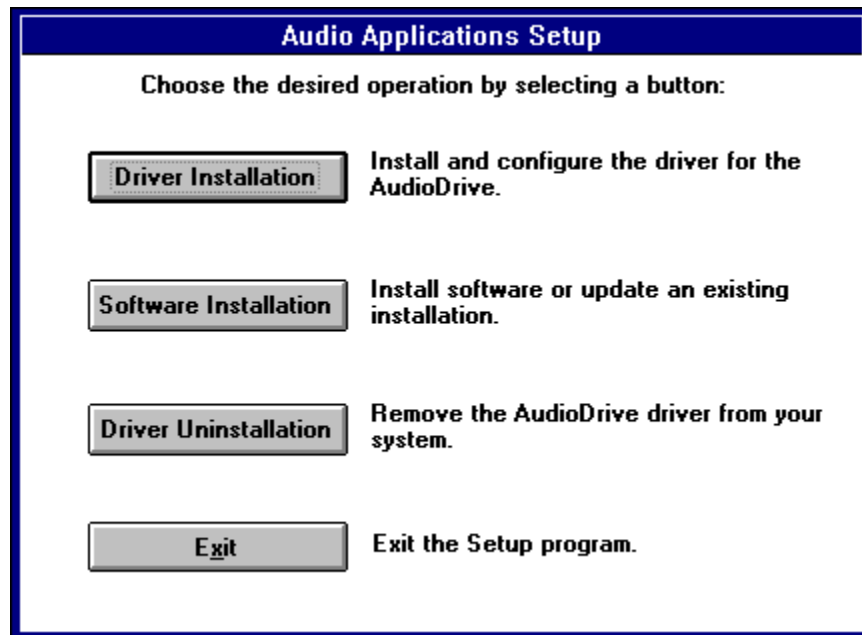
Let's examine each of these options.

If you choose **Driver Installation**, the following window appears:
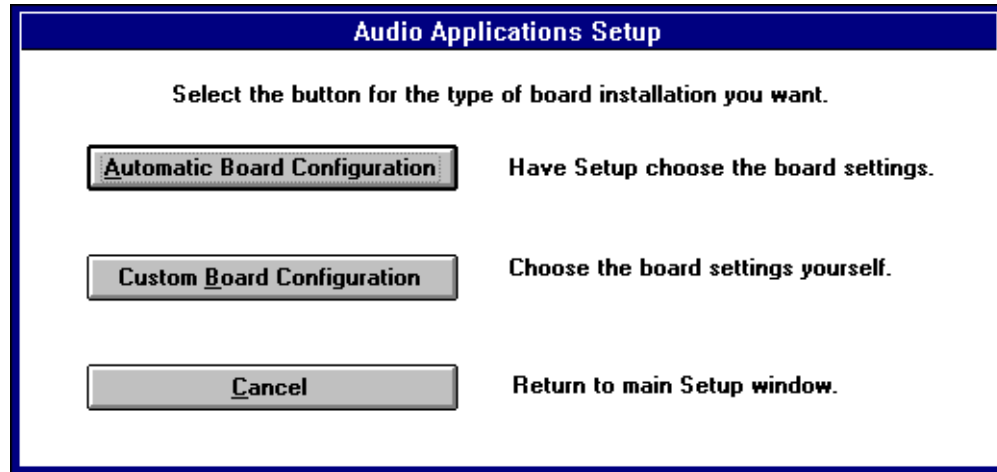
Unless you need to configure the board settings yourself, choose the **Automatic Board Configuration** button to install the hardware driver. Automatic Board Configuration will attempt to determine the I/O address, interrupt, and DMA channel settings of your board.

If you choose **Custom Board Configuration,** the following window appears:
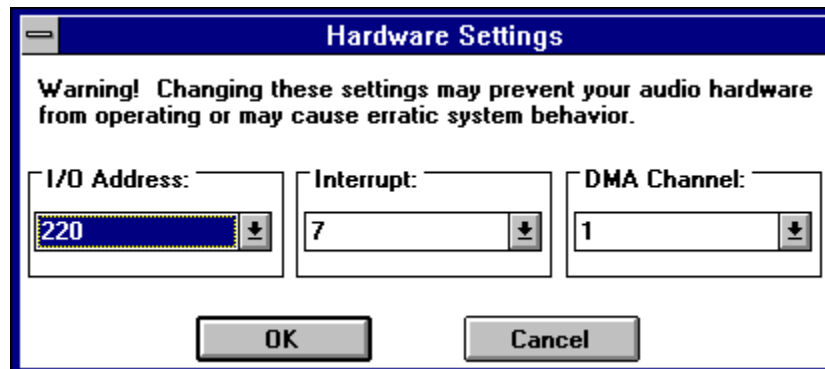
The window opens showing the factory default settings. If you do not know the I/O address, interrupt, and DMA channel of your board, refer to the hardware installation manual. For the Stereo Magician Plus (ES688) board, the interrupt and DMA channel are software configurable.

In the next window (below), choose **Restart Windows** if
the Audio Applications are already installed. If not, choose **Install Software**.

From the main setup window, click the **Software Installation** button to install
the Audio Applications.
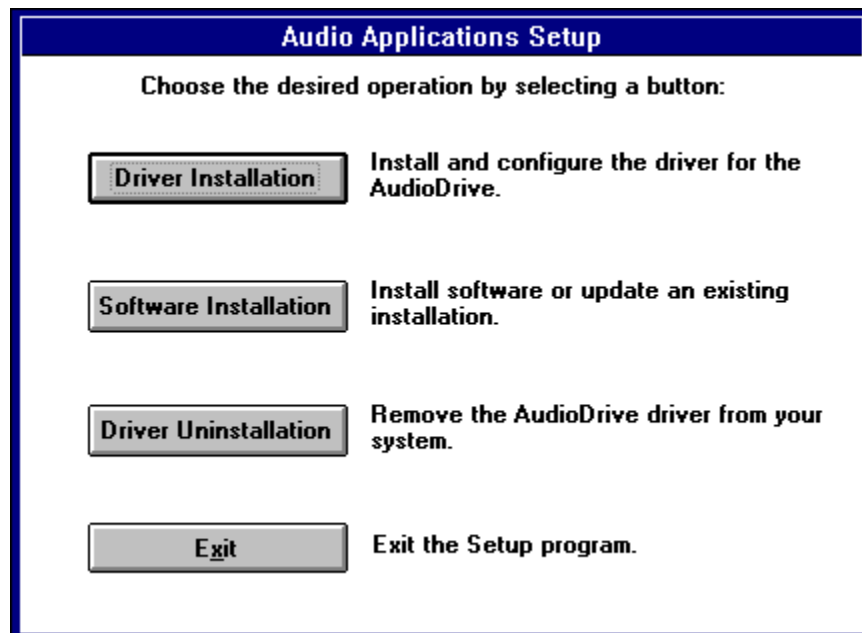
The default directory is PCAUDIO. To store the Audio Applications in another directory, type its name and click **OK**.

If the directory you specify does not exist, Setup will create it for you.

If the Audio Applications have been previously installed, this window appears:

Choose **Change Directory** to install the files in another directory, preserving the previous installation. If you choose **Continue**, this window appears:
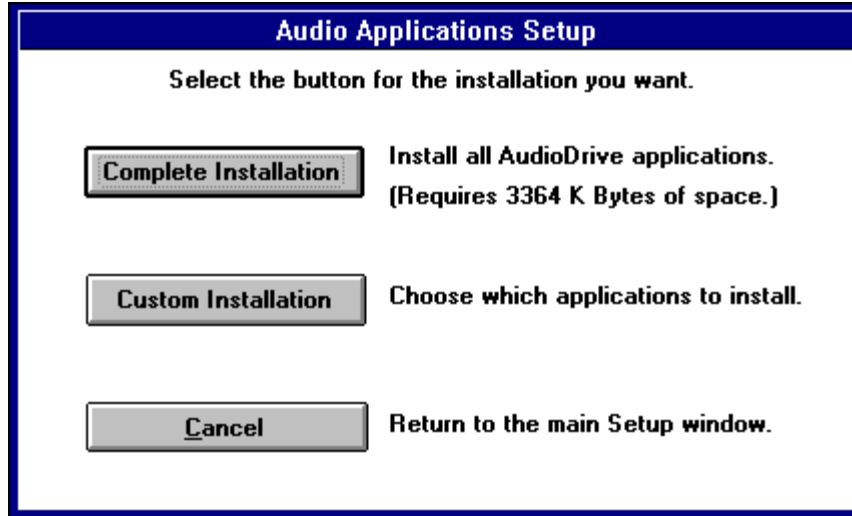
To install all the Audio Applications, click the **Complete Installation** button. To install only some Audio Applications, choose **Custom Installation**.

If you choose **Custom Installation**, this window appears:

AudioDrive Setup

☑ Audio Recorder   ☑ Clock
☑ Volume Control   ☑ Reminder
☑ Mixer   ☑ Stopwatch
☑ Recording Control   ☑ Timer
☑ Calculator   ☑ Audio Clip Library
☑ Chime   ☑ Setup

Drive: C:

Space Required: 3412 K Bytes

Space Available: 2000 K Bytes

[Install]   [Change Directory]   [Cancel]

To exclude an application from the installation, click its box. To store the applications in another directory, choose **Change Directory** and specify the directory. Choose **Install** to install the selected Audio Applications.

After installation, the application icons appear in the Audio Applications program group:

Audio Applications

Audio Recorder   Recording Control   Volume Control   Mixer   Extended Recorder

Audio Clip Library   Calculator   Clock   Chime   Reminder

Stopwatch   Timer   Setup

Note: If you have a previous version of the software and the Setup program is unable to load the driver, follow this procedure:

1.   Exit Windows and reboot your system.

2.   Delete **auddrive.drv**, **vaudrv.386**, and **threed.vbx** from the directory **windows\system**, if any of these files are present.

3.   Restart Windows, ignoring any Windows error messages.

4.   Insert Setup Disk 1 in a drive, then choose **Run** from the File menu, enter **a:** or **b:** and **setup**, and click the **OK** button.

5.   Go through the Setup program again.

Changing Audio Boards

You may wish to replace your present audio board with another type-- for example, replacing Audio Magician Plus with Stereo Magician Plus. Before doing so, run the Setup program and choose the **Driver Uninstall** option before you turn off the computer to change the board.

Once the new board is installed, run the Setup program again and choose the **Driver Installation** option. This procedure loads the correct MIDI mapper configuration file and other system information.

Important: Skipping the driver reinstallation procedure will most likely cause the audio system to malfunction.

3:   The Audio Recorder

Introduction

The Audio Recorder enables you to record, compress, store and playback voice, music, and other sound. It provides settings for sound attributes such as mono/stereo, compression level, and sampling rate. You can use it to embed sound objects in documents created in applications that support object linking and embedding (OLE). The Audio Recorder's record, edit and playback capabilities are compatable with the Windows Sound Recorder and other recorders that record and playback in the PCM format.

The Audio Recorder can record to and playback from both .WAV and .AUD formats. .WAV is the Microsoft Windows 3.1 audio file format. The .AUD format uses ESPCM/ADPCM compression to produce an audio file. The Audio Recorder provides a choice of linear PCM, ADPCM and low, medium and high ESPCM compression.

The following chart shows the capabilities of the *Audio*Drive on-chip compression/decompression feature:

Compress/Decompress Format	ES688	ES1488	ES488
ESPCM Low (4-bit) Record	Yes	Yes	Yes
ESPCM Low (4-bit) Playback	Yes	Yes	Yes
ESPCM Medium (3-bit) Record	No	No	No
ESPCM Medium (3-bit) Playback	Yes	Yes	Yes
ESPCM High (1-bit) Record	No	No	No
ESPCM High (1-bit) Playback	Yes	Yes	Yes
ADPCM Record	No	No	Yes
ADPCM Playback	Yes	Yes	Yes

Starting the Audio Recorder

To start the Audio Recorder, open the Audio Applications program group and double-click the Audio Recorder icon.

OR: choose **Run** from the Program Manager's File menu, then type `c:\pcaudio\audiorec` and click the **OK** button.

The Audio Recorder window appears:
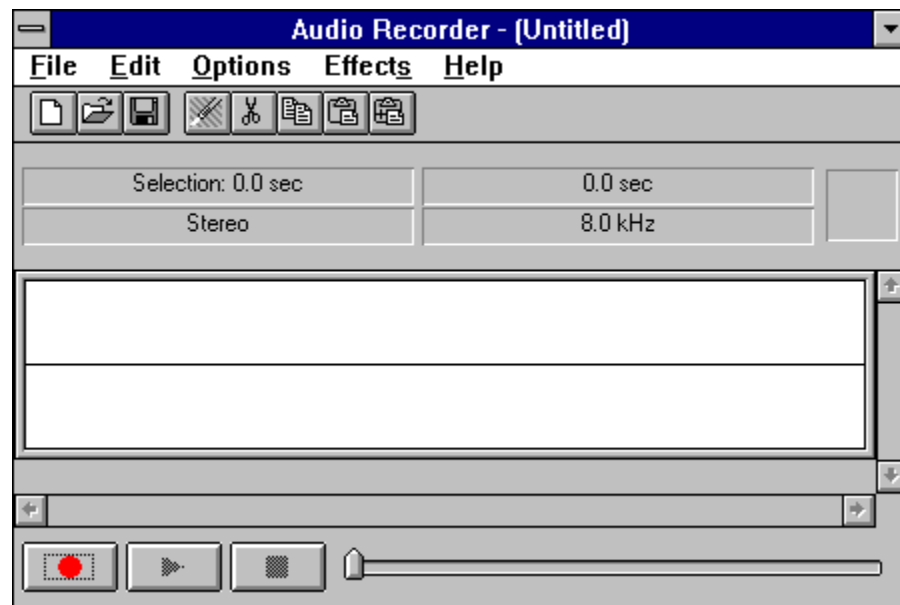
The Audio Recorder can receive input from microphones, a cassette tape player, a compact disk player, or any other line-in source.

Areas under the button bar show the length of a selected part of the current audio file, the total time, mono or stereo, and the sampling rate in kilohertz.

The large area in the center of the window shows the waveform of the current audio file.

The buttons at the bottom of the Audio Recorder window enable you to start and stop recording and playback.

RECORD   PLAY   STOP

Begins recording.   Begins playback.   Ends recording/playback

Audio Recorder Menu Commands

File Menu
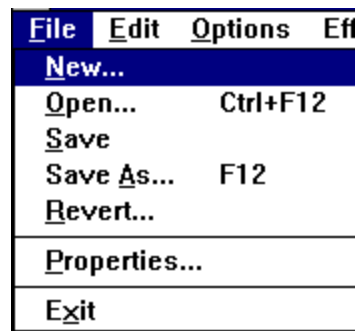
New begins a new audio file. The Audio Recorder starts with a new file.

Open enables you to load an existing audio file.

Save stores the current audio file to disk under its existing file name.

Save As enables you to change the name of the audio file before saving it.
Choosing this command displays the **Save As Sound File** dialog box.
See the page 20 for a description of **Options** in this dialog box.

Revert restores the previously saved version of the current audio file.

Properties displays the Properties dialog box, from which you can see and
change properties of the current audio file.

Exit closes the Audio Recorder window.

Edit Menu

Edit	Options	Effects
Undo		Ctrl+Z
Cut		Ctrl+X
Copy		Ctrl+C
Paste		Ctrl+V
Paste Mix		Ctrl+M
Delete		Del
Mute		
Select All		Ctrl+A
Zoom In		
Zoom Out		
Insert File...		
Mix with File...		

Undo reverses the last change you made to the current audio file.

Cut erases the selected audio portion and stores it on the Clipboard.

Copy copies the selected audio portion to the Clipboard without removing it.

Paste inserts the Clipboard audio at the cursor, pushing other material ahead.
If audio is selected, **Paste** replaces the selection with the Clipboard audio.

Paste Mix mixes the Clipboard audio with the audio beginning at the cursor.

Delete erases the selected portion of the recording. To recover a deleted
sound, use the **Undo** command immediately after using **Delete**.

Mute silences the selected portion of the audio file, leaving it blank.
To recover a muted sound, use **Undo** immediately after using **Mute**.

Select All select the entire recording.

Zoom In enlarges the waveform display.

Zoom Out reduces the waveform display.

Insert File displays the Insert File dialog box. From here you select an audio file to be inserted into the current file at the cursor. If audio is selected, the inserted audio file replaces the selected audio.
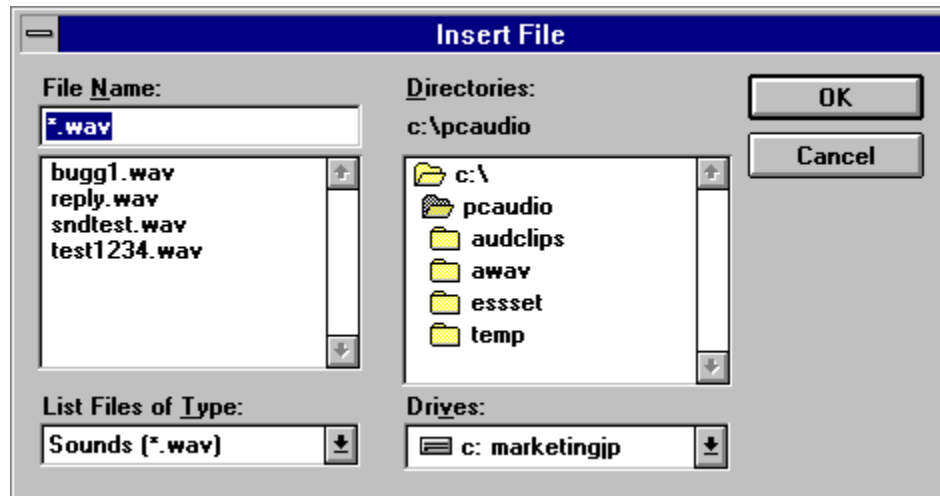
Mix with File displays the Mix with File dialog box. From here you select an audio file to be mixed with the current file, beginning at the cursor.

Options Menu

Options menu commands enable you to display the Volume Control, Recording Control, and Mixer windows.

Recording Control mixes audio from several sources in a recording.

Volume Control adjusts the play volume.

Mixer combines audio from several sources during playback.

Always On Top displays the Audio Recorder on top of other windows.

Effects Menu

The Audio Recorder's Effects commands change the waveform of the audio
you have selected. If there is no selection, the entire file is affected. To
change the audio back to what it was before you used an Effects command,
choose **Undo** from the Edit menu before using any other command.
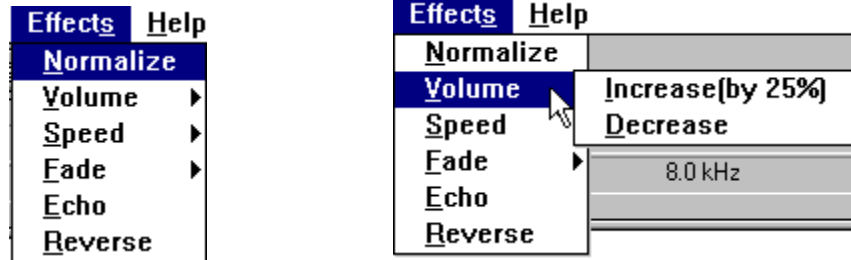
Normalize amplifies the selected audio to the maximum volume possible
without distortion.

Volume increases or decreases the amplitude of the selected audio by 25%.
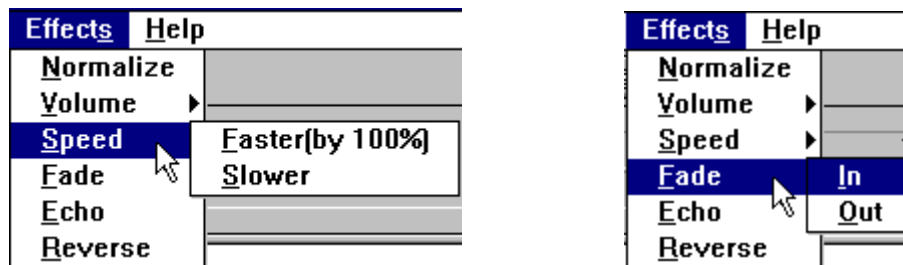
Speed changes the selected audio to be 100% faster or slower. The frequency
is not changed.

Fade causes the selected audio to **Fade In** from its lowest amplitude to its
highest, or **Fade Out** from its highest amplitude to its lowest.

Echo displays the Echo Rate dialog box. From here you set the echo delay and echo volume for the selected audio.
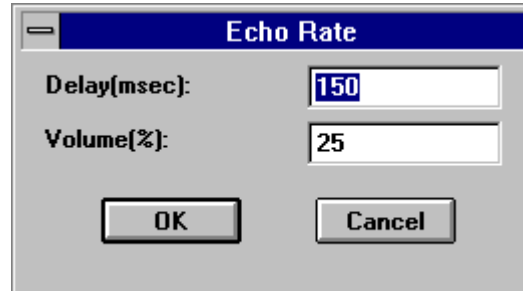
Reverse flips the selected audio backwards, so the end becomes the beginning and the beginning becomes the end.

Help Menu

Contents displays topics you can choose for information.

About Audio Recorder gives the version number and copyright information.

The Audio Recorder Toolbar

For your convenience, eight often-used menu commands are also available as toolbar buttons at the top of the Audio Recorder window. Here is the meaning of each button:

New   Open   Save   Undo

Cut   Copy   Paste   Paste Mix

Making a Recording

1. Select **New** from the File menu. The Sound Attributes dialog box appears:
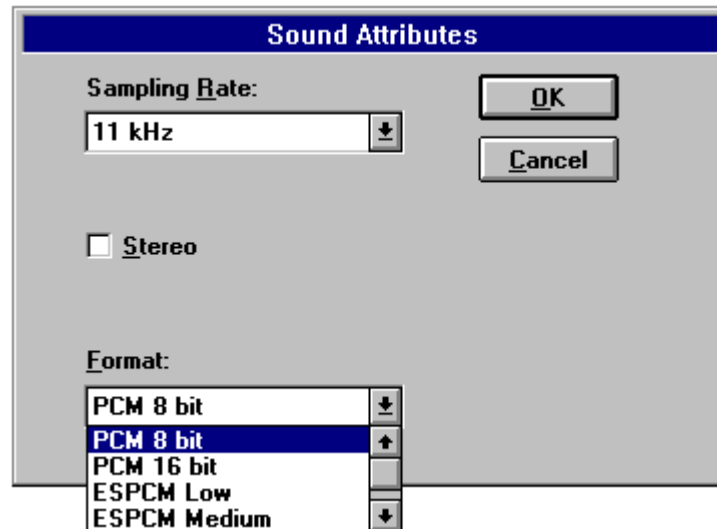
2. In the Sound Attributes dialog box, choose settings for Sampling Rate, Stereo (on or off), and Format, then click the **OK** button.

    - Choose one of the PCM (uncompressed) formats if you want the highest sound quality, or it you wish to edit or modify the recording with Effects commands before you save it.

    - Choose one of the ESPCM or ADPCM compression formats if you wish to save disk space and don't mind sacrificing some sound quality.

2. In the Audio Recorder window, click the **Record** button.
    Speak into the microphone or turn on the line-in source.

3. Click the **Stop** button to end the recording.

4.   Select **Save As** from the File menu. The Save As dialog box appears:
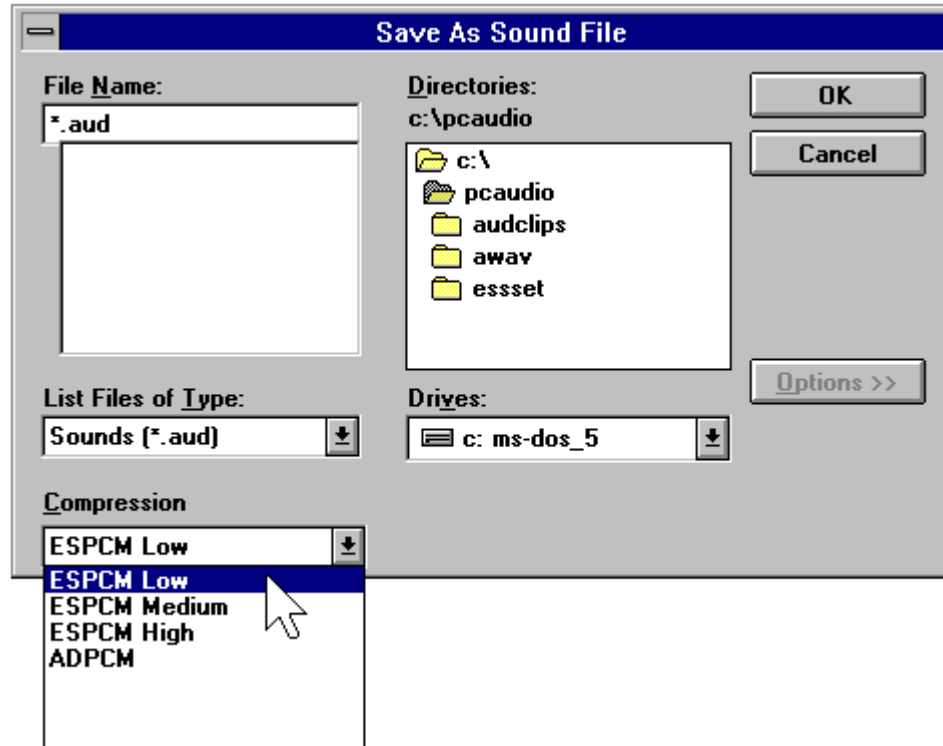
5.   In the Save As dialog box:

- If the file is uncompressed and you wish to save it uncompressed, do *not* click the **Options** button. Just choose a directory location, enter a name for the audio file, then click the **OK** button to save it. The extension for an uncompressed audio file is **.wav**.

- If the file is uncompressed and you wish to compress it, click the **Options** button and select the compression you want, then click the **OK** button. The extension for a compressed audio file is **.aud**.

You can use the Recording Control window to regulate the mix of audio from several sources. To display this window, choose **Recording Control** from the Options menu. If you do not open the Recording Control window, the Audio Recorder uses the source settings previously in effect. See the Recording Control section for more information.

Playing an Audio File
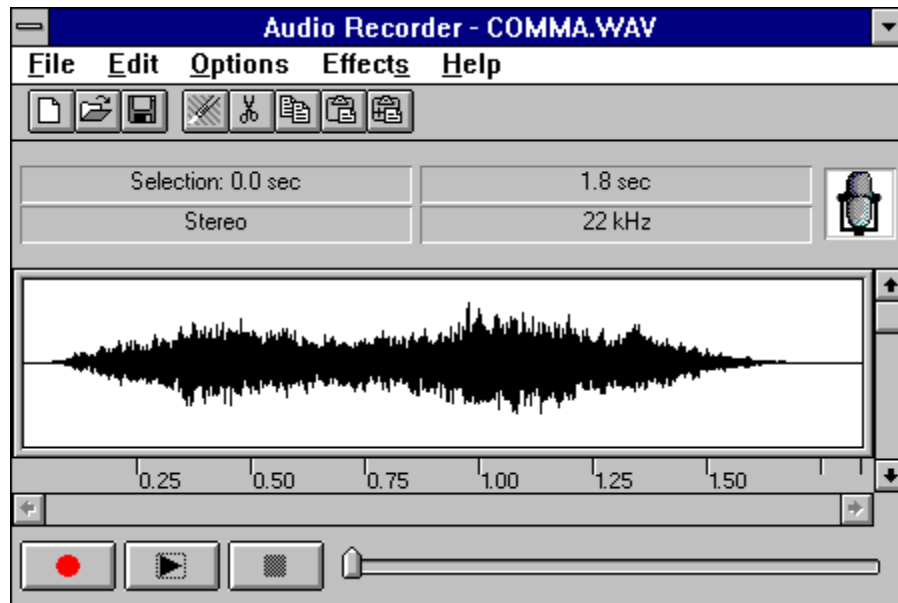
1. Load an audio file into the Audio Recorder. It can be a recording you have just made, or use the **Open** command (File menu) to load a file stored on disk.

2. Click the Audio Recorder's **Play** button to hear the audio file. The file will play to the end unless you interrupt it by pressing the **Stop** button.

Using the Waveform Display

The Audio Recorder's waveform display provides a graphic representation of the audio file currently in memory. You control the display with the vertical and horizontal scroll bars.

- To zoom in on (or magnify) the waveform, move the vertical scroll button down. To zoom out, move the vertical scroll button up.

- To see more of the waveform ahead or behind the part currently displayed, click the right or left area of the horizontal scroll bar.

- To mark a portion of the audio file for playback, use the mouse to select that portion in the waveform display. Then choose **Play** to hear the selected section.

- To deselect a selected portion of the waveform, click anywhere in the waveform display.

- To select the entire file, double-click anywhere in the waveform display.

Adding the Volume Control and Mixer

To regulate the playback sound level or stereo balance, choose **Volume Control** from the Options menu. The Volume Control window appears. See the Volume Control section for more information.

To play the current audio file together with other sound sources, choose **Mixer** from the Options menu. The Mixer window appears. See the Mixer section for more information.

Editing an Audio File

Use the **Open** command (File menu) to load an audio file from disk to the Audio Recorder. You can also edit a file you just recorded.

To delete an audio section:

1.   With the mouse, select the waveform of the audio to be deleted.

2.   Press the **Del** key, or choose the **Delete** command. The selected audio disappears, joining the audio before and after it. If you wish to save the deleted section, use the **Cut** command instead of **Delete**.

To restore a deleted audio section, choose the **Undo** command before making any other changes to the audio file.

To mute an audio section:

1.   Select the waveform of the audio to be muted.

2.   Choose **Mute** from the Edit menu. The selected audio is silenced; its waveform is reduced to a flat line.

To restore a muted audio section, choose the **Undo** command before making any other changes to the audio file.

To move or copy an audio section:

1.   Select the waveform of the audio to be moved or copied.

2.   Click the **Cut** button to erase the selected audio and place it on the
     Clipboard, or click the **Copy** button to leave the selected audio as is while
     copying it to the Clipboard.

3.   Place the cursor where you want the Clipboard material to appear and
     click the **Paste** button.

To record new audio and place it on the Clipboard:

1.   Place the cursor at the end of the waveform, or play the file to the end.

2.   With microphones or other input sources ready, click the **Record** button
     to record new material. Click the **Stop** button to finish.

3.   Use the mouse to select the section just recorded, then click the **Cut** or
     Copy button to put that audio section onto the Clipboard.

To insert audio from the Clipboard:

1.   Place the cursor at the point in the waveform where you want to insert
     audio from the Clipboard.

2.   Click the **Paste** button. The Clipboard audio waveform appears at the
     cursor. No audio is erased.

**To replace the selected audio with Clipboard audio:**

1.   Use the mouse to select the waveform of the audio to be replaced.

2.   Click the **Paste** button. The Clipboard audio appears in place of the
     selected audio.

To mix Clipboard audio with the selected audio:

1. Place the cursor at the beginning of the audio to be mixed, or select a section of audio to be mixed.

2. Click the **Paste Mix** button. The Clipboard audio is combined with the audio after the cursor. If a section of audio was selected, the Clipboard audio is combined with the selected audio until the end of either the Clipboard or the selected audio.

To insert audio from a file, or replace a selected audio segment with audio from a file:

1. Place the cursor at the point in the waveform where you want to insert an audio file, or select the audio you want to replace with an audio file.

2. From the Edit menu, choose **Insert File** to display the Insert File dialog box. Then choose an audio file to insert into the current file. If audio is selected, the inserted audio file replaces the selected audio.
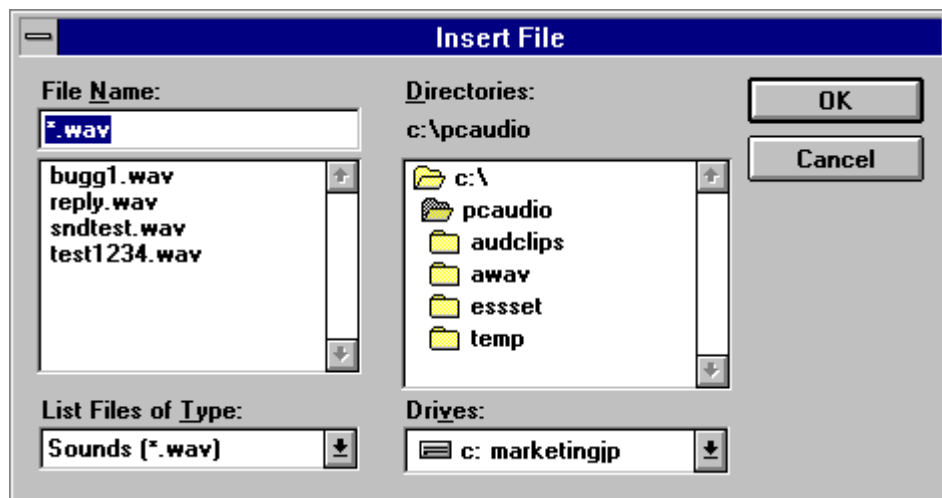
To mix audio from a file:

1. Place the cursor at the beginning of the audio to be mixed.

2. From the Edit menu, choose **Mix with File** to display the Mix With File dialog box. Then choose an audio file to combine with the current file, beginning at the cursor.
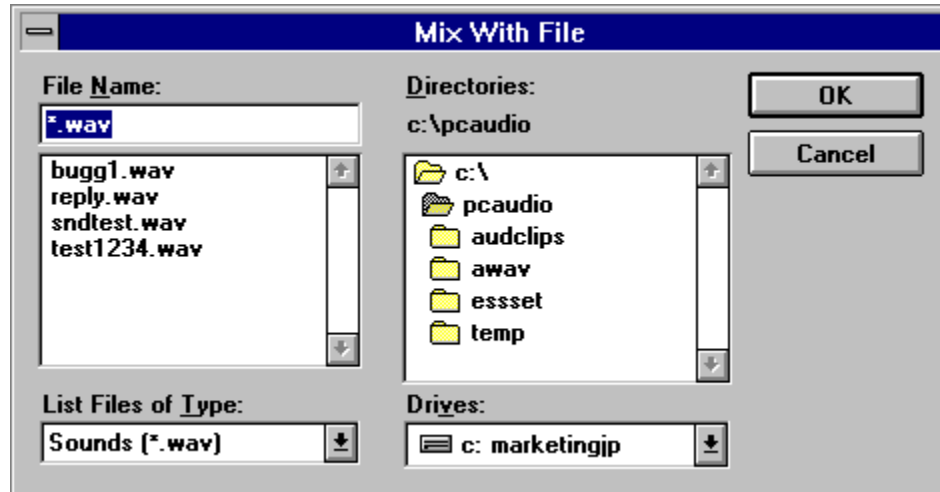
Changing the Waveform with Effects Commands

The Effects commands are described in the section above on *Audio Recorder Menu Commands--Effects Menu*. These commands change the waveform of the audio you have selected. If there is no selection, the entire file is affected. The commands are:

Normalize: highest amplitude possible   **Fade**: **In** or **Out**

Volume: **Increase** or **Decrease**   **Echo**: you set the delay, volume

Speed: **Faster** or **Slower**   **Reverse**: reverses the recording

Adding Sound to a Document: Drag and Drop

The Audio Recorder's drag and drop feature enables you to embed audio files in documents.

1. Open a document in the appropriate Windows application.

2. Load an audio file from disk to the Audio Recorder, or use an audio file you just recorded.

3. Move the cursor to the icon at the top right of the Audio Recorder. The cursor changes into a hand. Hold the mouse button and drag the icon to the document window, then release the button at the place you want the audio icon to appear.

4. To play an audio object in a document, double-click its icon.

You can also add audio to a document from the document's application. Place the cursor where you want the audio icon to appear, choose the application's command for inserting an object, then select Audio Recorder in the list box. Refer to the OLE section of Windows User Guide for more information.

Changing an Audio File's Properties

An audio file contains more than sound. You can attach a title, description, and an icon to the current audio file. To do so, choose **Properties** from the File menu. The Properties dialog box appears.
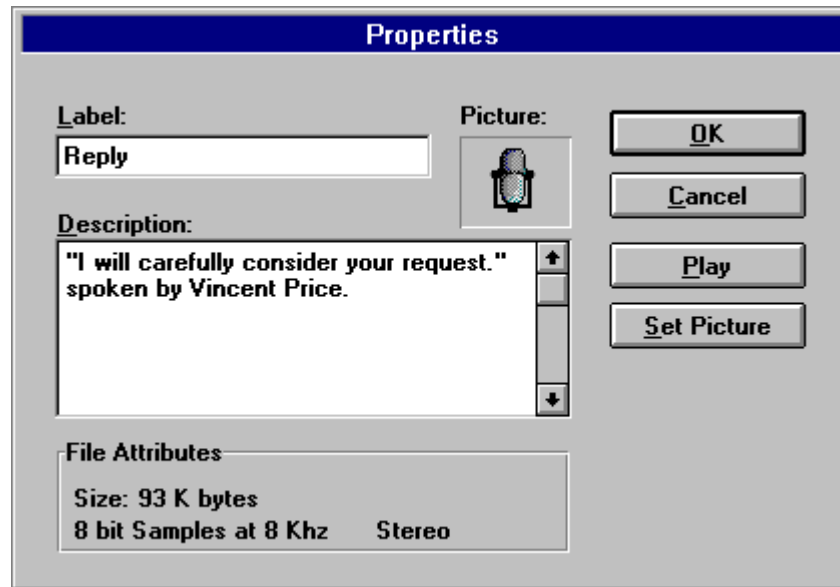
In this dialog box, you can place the cursor in the Label or Description area to add or change the label or description for the audio file.

Click the **Play** button to hear the audio file.

The Audio Recorder assigns a default picture of a microphone to each audio
file. To select another picture more representative of the audio file's contents,
click the **Set Picture** button. The Set Picture dialog box appears:
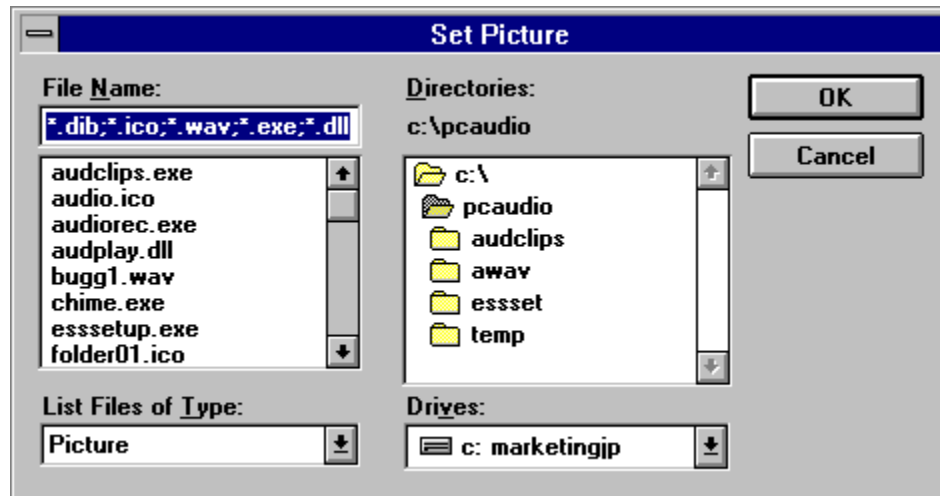
From here, select the picture to appear with the audio file. It can be any
graphic contained in a bitmap (.BMP or .DIB), wave (.WAV), icon (.ICO),
executable (.EXE) or library (.DLL) file.

The picture you select will appear in the Audio Recorder. It will also appear
in any document in which you embed the audio file.

When you are finished, click the **OK** button.

4:   The Recording Control

Introduction

The Recording Control enables you to regulate the recording level and stereo balance at which sound is recorded from multiple sources. You use the Recording Control with the Audio Recorder or Extended Recorder during recording.

Starting the Recording Control

There are several ways to start the Recording Control:

- From the Audio Applications program group, double-click the Recording Control icon.
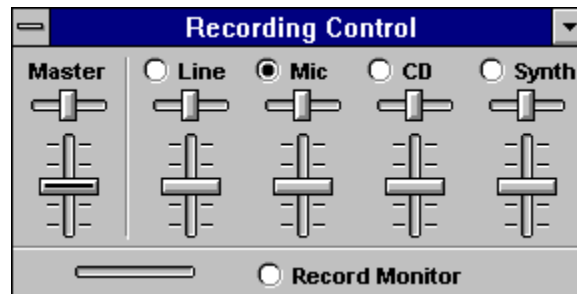
OR:
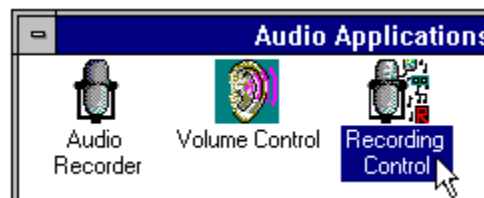
- From the Audio Recorder window, open the Options menu and choose **Recording Control**.

The Recording Control window appears.

The Recording Control can receive input from a microphone, a compact disk player, a synthesizer, or any other line-in source. The Recording Control displays recording level and stereo balance controls (ES688 only) for each of your computer's hardware sources.

To include a recording source, click the circle in front of its name.

To adjust the stereo balance of any source, drag its top horizontal sliding bar left or right (for the ES688 only.)

To adjust the recording level of a source, drag its vertical sliding bar up or down.

To monitor a recording in progress, click **Record Monitor**.

Recording Control Menu Commands

Turn on **Always On Top** to display the Recording Control on top of other windows.

Help displays information about how to use Recording Control.

About Recording Control gives the version number and copyright information.

The Volume Control

Introduction

(ES688 only) at which sound is played. You can use the Volume Control with the Audio Recorder during playback. If you are playing multiple sources,

regulator.

Starting the Volume Control

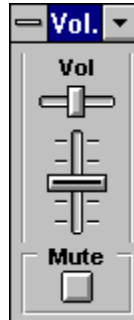- Open the Audio Applications program group and double-click the

OR:

- From the Audio Recorder Options menu or the Mixer menu, choose the **Volume Control** command.
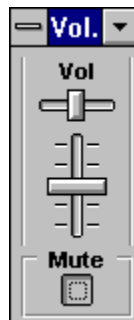
The Volume Control window appears.

The Volume Control can recieve input from a microphone, a cassette tape player, a compact disk player, or any other line-in source.

- To adjust the stereo balance, drag the horizontal sliding bar left or right (for the ES688 only.)

- To adjust the volume, drag the vertical sliding bar up or down.

- To turn the sound off, click the **Mute** button.

- To turn the sound back on, click the **Mute** button again.

The Volume Control Menu

Turn on **Always On Top** to display the Volume Control on top of other windows.

Mixer displays the Mixer window if you want to mix the playing of sounds from several sources.

Help displays information on how to use Volume Control.

About Volume Control gives the version number and copyright information.

6:   The Mixer

Introduction

The Mixer enables you to combine signals from several audio sources during playback, with control over the volume and stereo balance of each source.

When you use the Audio Recorder to play an audio file, you can open the Mixer to combine the audio from the file with audio from other sources.

The Volume Control is a natural companion to the Mixer. The Volume Control acts as a master regulator of the combined signal from the Mixer.

Starting the Mixer

There are several ways to start the Mixer:

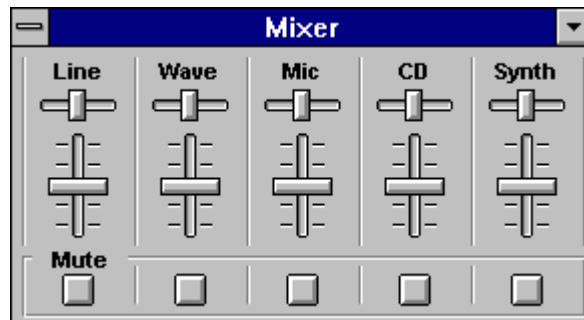- From the Audio Applications program group, double-click the Mixer icon.

OR:

- From the Audio Recorder Options menu or the Volume Control menu, choose **Mixer**.
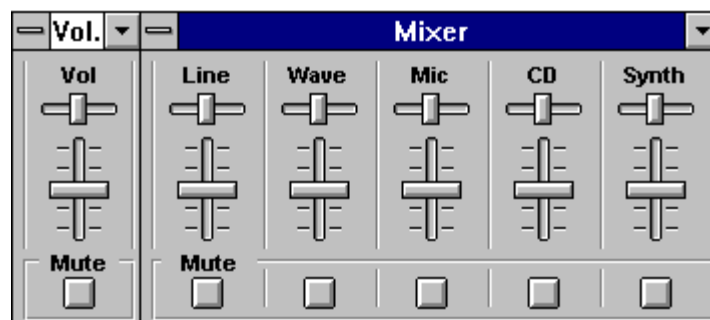
The Mixer Window

The Mixer can recieve input from a waveform audio file, a microphone, a compact disk player, a synthesizer, or other line-in source. The Mixer's appearance depends on your computer hardware; the Mixer pictures here assume the presence of the ESS Stereo Magician Plus (ES688) card.

To adjust the stereo balance of a source, drag its top sliding bar left or right (for the ES688 only.) To adjust the volume of a source, drag its vertical sliding bar up or down.
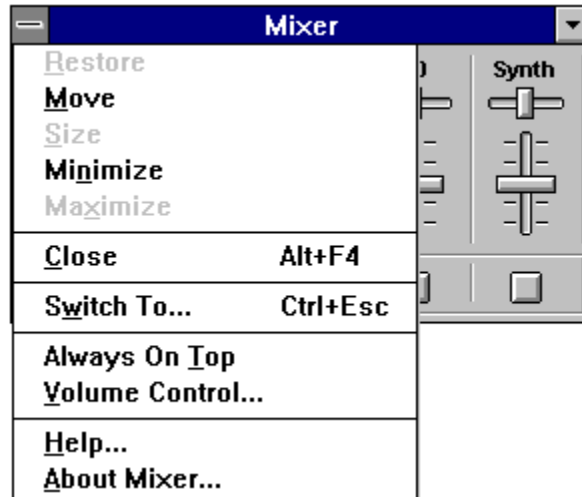
To turn off the audio from any source, click its **Mute** button. Click the **Mute** button again to turn the audio back on.

Adding the Volume Control

The Volume Control serves as a master control to the Mixer. To display the Volume Control window, choose **Volume Control** from the menu.

Mixer Menu Commands

Turn on **Always On Top** to display the Mixer on top of other windows.

Volume Control displays the Volume Control at the left side of the Mixer.

Help displays information about how to use the mixer.

About Mixer gives the version number and copyright information.

7:   The Extended Recorder

Introduction

The Extended Recorder is designed as a tool for recording meetings, conversations, and dictation. Like the Audio Recorder, the Extended Recorder records, compresses, stores, and plays voice, music, and other sound. Unlike the Audio Recorder, the Extended Recorder compresses and stores the audio file directly to your hard disk, using on-chip ESPCM compression. The recording time is limited only by the amount of hard disk space you have available.

The Extended Recorder can record to and playback from both PCM and .AUD formats. PCM is the Microsoft Windows 3.1 audio file format. The .AUD format uses ESPCM compression to produce an audio file. The Extended Recorder provides a choice of linear PCM (8 or 16 bits) and ESPCM low (4 bits) compression.

System Requirements

Use the Extended Recorder with a hard disk compression utility only if you have a high-performance system and are using a low data rate for recording and playback. Otherwise, the computer's CPU may become overloaded.

If you wish to use 16-bit stereo at 44 kHz for recording or playback, we recommend that your computer have the following capabilities:

- a 486 running at 50 MHz or more
- 8 megabytes or more of RAM
- an average hard disk access time of 15 milliseconds or faster

Computers without these capabilities may lose data if you attempt 16-bit stereo, 44 kHz recording or playback.
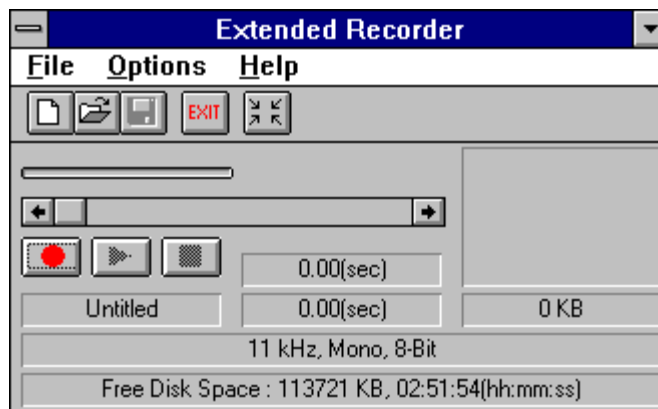
Starting the Extended Recorder

Open the Audio Applications program group and double-click the Extended Recorder icon.

The Extended Recorder window appears. To expand the wndow so it shows more information, turn on **Expanded View** in the Options menu:
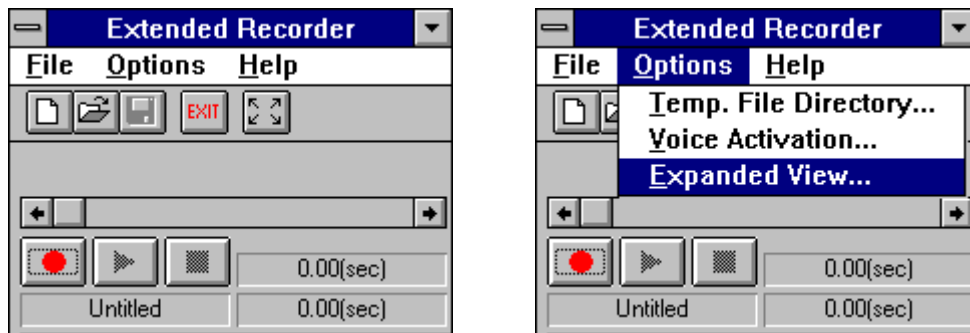
Here is the expanded view of the Extended Recorder window:

total length in seconds, the length in megabytes, the sample rate, mono or stereo, bits per sample, and the free disk space and recording time avauilable.

These buttons enable you to start and stop recording and playback:

RECORD   PLAY   STOP

Begins recording.   Begins playback.   Ends recording/playback
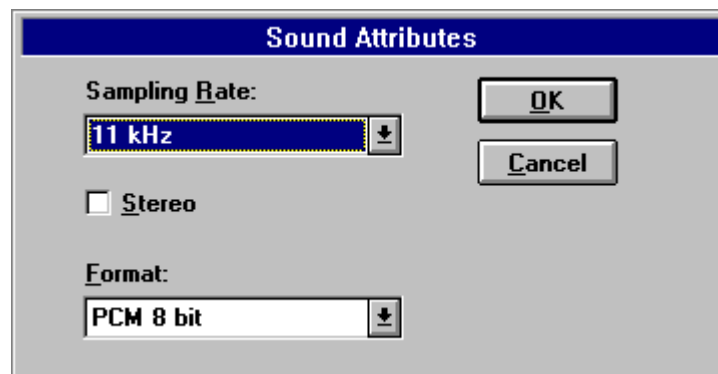
Extended Recorder Menu Commands

File Menu

New creates a new audio file. When you start the Extended Recorder, a new file is created automatically. **New** also opens the Sound Attributes dialog box, which enables you to set the sampling rate, mono or stereo, and sound format.

Open displays the Open dialog box, from which you can select an audio file to bring into the Extended Recorder.

Save As saves the audio file with the name and in the location you specify. You can also choose to save the file as read only.
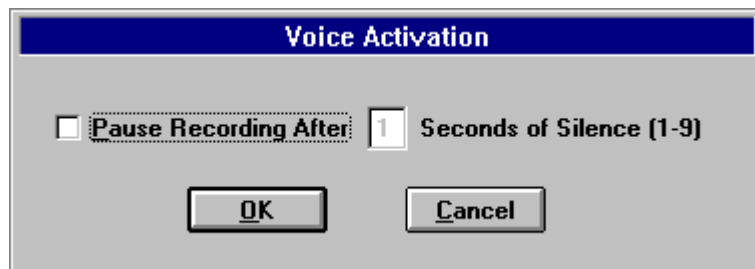
Exit closes the **Extended Recorder**.

Options Menu

Temp. File Directory enables you to set the hard drive location for the .TMP files that the Extended Recorder creates while recording. When you save an audio file, its .TMP file is copied to the name and location you specify.

Voice Activation displays the following dialog box:

Voice Activation will pause the recording when there is no input from the recording source. To turn voice activation on, click the **Pause Recording After** check box, then set the **Seconds of Silence** field. The recording will be paused only after the amount of time of no input set in the Seconds of Silence field has passed. Recording will resume when input from the recording source resumes.

Help Menu

Contents displays a list of topics you can choose for information on Extended Recorder features.

About Extended Recorder gives the version number and copyright information.

The Extended Recorder Toolbar

For your convenience, five often used menu commands are also available as toolbar buttons at the top the the Extended Recorder window.

New   Open   Save   Exit

Expanded View   Normal View

Making a Recording

1. Open the File menu and select **New**. New opens the **Sound Attributes** dialog box, where you can set the sample rate, the sound format, and whether to record in mono or stereo. After you set the attributes, click **OK**.

2. Click the **Record** button. Speak into the microphone or turn on the line-in source.

3. Click the **Stop** button to pause or end the recording.

4. Open the File menu and select **Save As**. In the Save As dialog box, choose a directory location and type a name for the audio file, and click **Read Only** if you want to save the file as read only. Click the **OK** button to save it.

Adding the Recording Control

If your hardware includes a mixer, you can use the Recording Control window to regulate the mix of audio from several sources. If you do not open the Recording Control window, the Extended Recorder uses the source settings previously in effect. See the Recording Control section for more information.

Playing an Audio File

1. Load an audio file into the Extended Recorder. It can be a recording you have just made, or use the **Open** command (File menu) to load a file stored on disk.

2. Click the Extended Recorder's **Play** button to hear the audio file. The file will play to the end unless you interrupt it by pressing the **Stop** button.

You don't have to play an audio file from the beginning. Use the scroll bar to select any place in the file to begin playing.

Adding the Volume Control and Mixer

To regulate the playback sound level or stereo balance, open the Volume Control window. See the Volume Control section for more information.

To mix the audio file with other sound sources, open the Mixer window. See the Mixer section for more information.

8:   The Audio Clip Library

Introduction

From the Audio Clip Library you can select and play audio files stored under three headings (or folders): music, phrases, and sounds. You can also add folders and audio files of your own to the Audio Clip Library.

You can play any audio file in the library by using the Audio Recorder (opened automatically by the Audio Clip Library), the Microsoft Sound Recorder, or other recorders compatible with the Windows .WAV format.
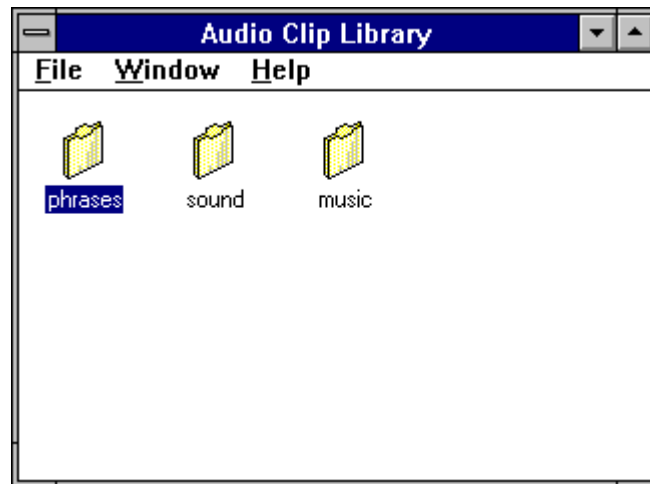
Audio Clip Library folders are stored in the directory PCAUDIO under the subdirectory AUDCLIPS.

Starting the Audio Clip Library

Open the Audio Applications program group and double-click the Audio Clip Library icon.

The Audio Clip Library window appears:

The Audio Clip Library displays folders titled **music**, **phrases**, and **sound**. The Music folder contains short musical interludes. The Phrases folder contains phrases used in business settings. The Sound folder contains a variety of mechanical and animal sound clips.

To open a folder:

Double-click the folder, or select one and choose **Open** from the File menu. The folder's window appears on top of the Audio Clip Library window. For example, here is the music folder window with its music audio files:
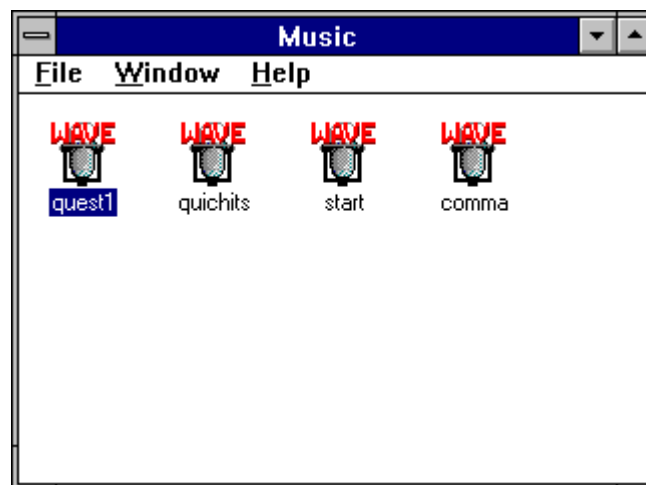
To open an audio file:

In the music, phrases, or sounds window, double-click the name of an audio file or select the name and choose **Open** from the File menu. The Audio Recorder opens automatically, and the file you selected is loaded. For example, here is the QUEST1 audio file in the Audio Recorder:
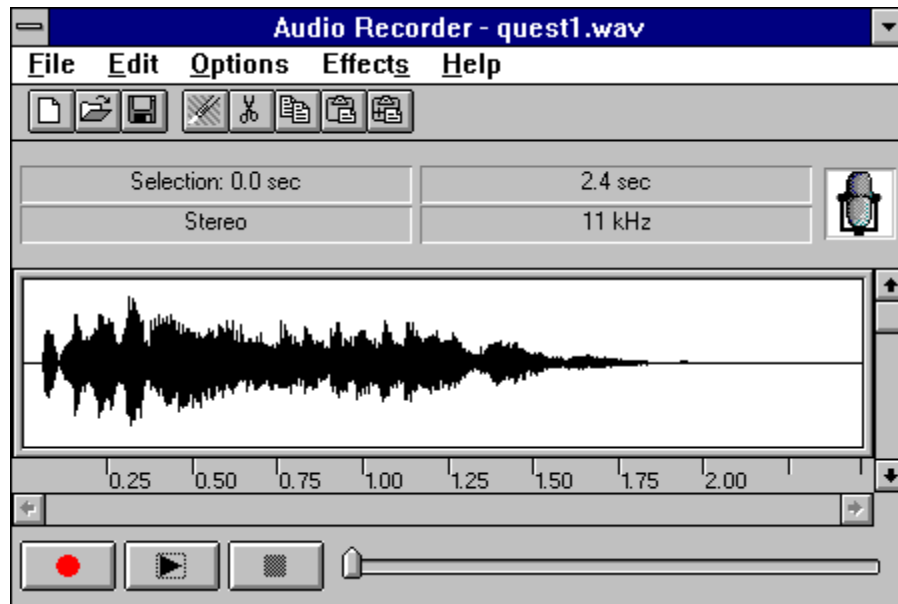

For information on recording, editing, and playback, see the section on the Audio Recorder.

To add an audio file to the Audio Clip Library:

1. Bring the audio file into the Audio Recorder.

2. From the Audio Recorder, choose **Save As** from the File menu.

3. In the dialog box, select the directory PCAUDIO, select the AUDCLIPS subdirectory, then select a subdirectory (folder) for the audio file, and enter a file name. For example, you could store a clip from Beethoven's Fifth Symphony in the music folder:
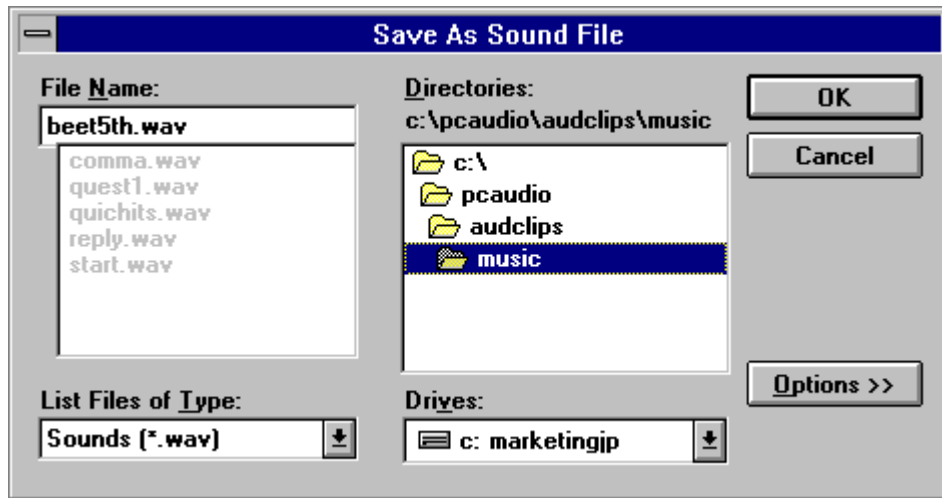
4.   Click the **OK** button. The next time you open or refresh the music folder window, the new audio file appears:
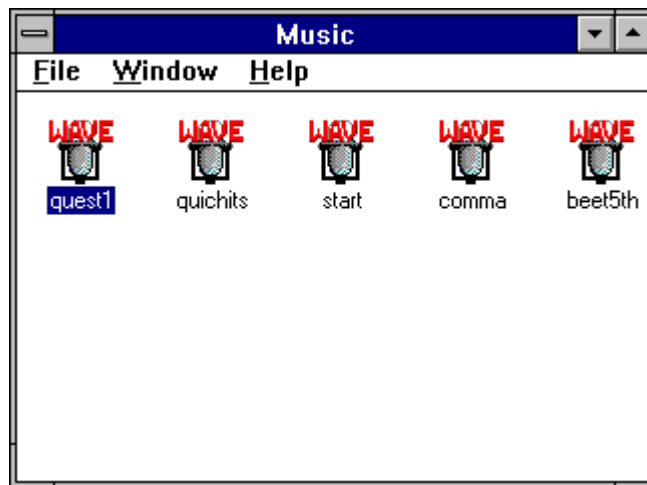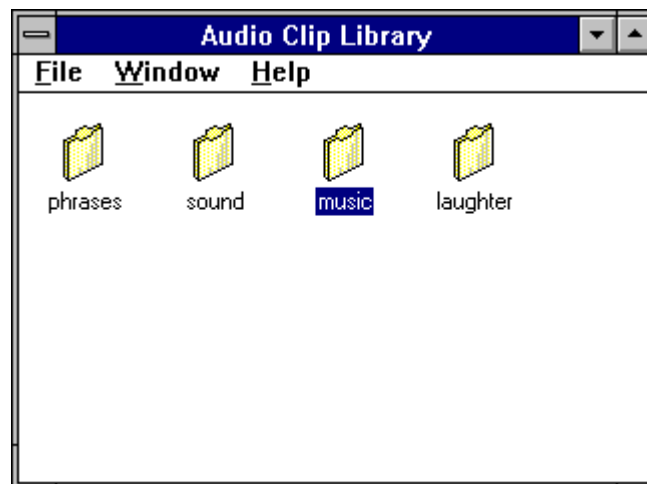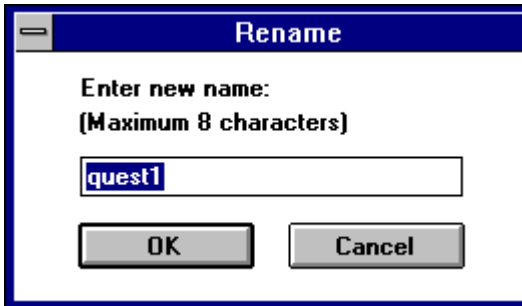
To add a new folder to the Audio Clip Library:

1. From the DOS prompt or a file manager, select the directory PCAUDIO, then select the subdirectory AUDCLIPS.

2. Create a subdirectory with the name you want on the new folder.

The next time you open or refresh the Audio Clip Library window, the new folder appears. For example, here is a new folder for audio clips of laughter:
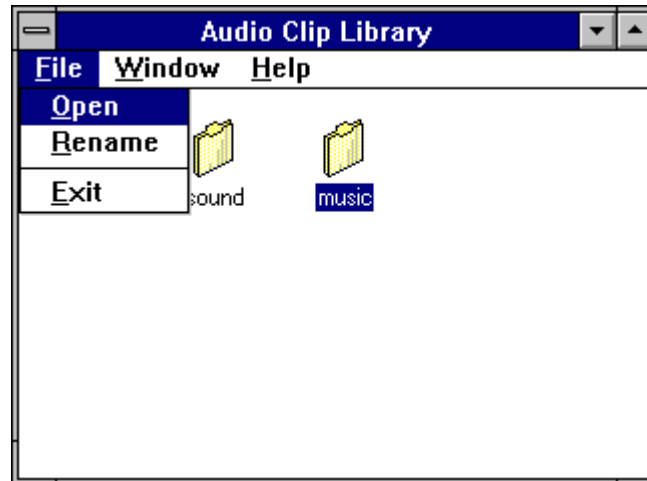
To change a file name:

1. With the music, phrases, or sounds window open, select the audio file whose name you wish to change.

2. Choose **Rename** from the File menu. The Rename dialog box appears with the name of the file.

3. Type a new name and click the **OK** button. The file name is changed.

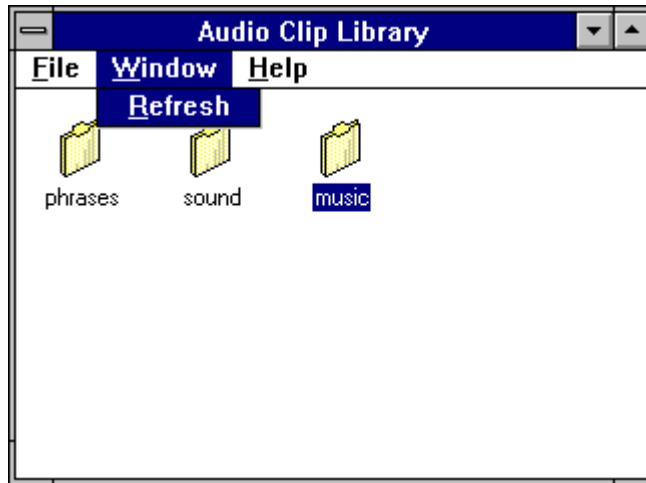# Audio Clip Library Menu Commands

File Menu

Open displays the currently selected item. From the Audio Clip Library window, **Open** displays the files in the selected folder. From a folder window, **Open** loads the selected audio file into the Audio Recorder.

Rename enables you to change the name of the currently selected file.
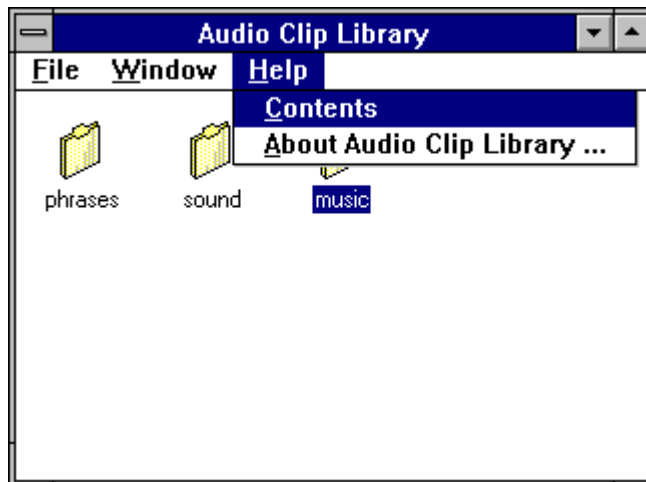
Exit closes the current window. Choose **Exit** from a folder to close it and display the Audio Clip Library window. Choose **Exit** from the Audio Clip Library window to quit the program.

Window Menu

Refresh checks the directory and updates the contents of the Audio Clip
Library window or folder window.

Help Menu

Contents displays a list of topics you can choose for information on the
Audio Clip Library.

About gives the version number and copyright information.

9: The Talking Calculator

Introduction

The Talking Calculator enables you to perform all the operations of a regular calculator. In addition, it tells you each number and operator as you enter it, then announces the result when you choose the equal operator.

Starting the Talking Calculator

Open the Audio Applications program group and double-click the Talking Calculator icon.

The Talking Calculator window appears.
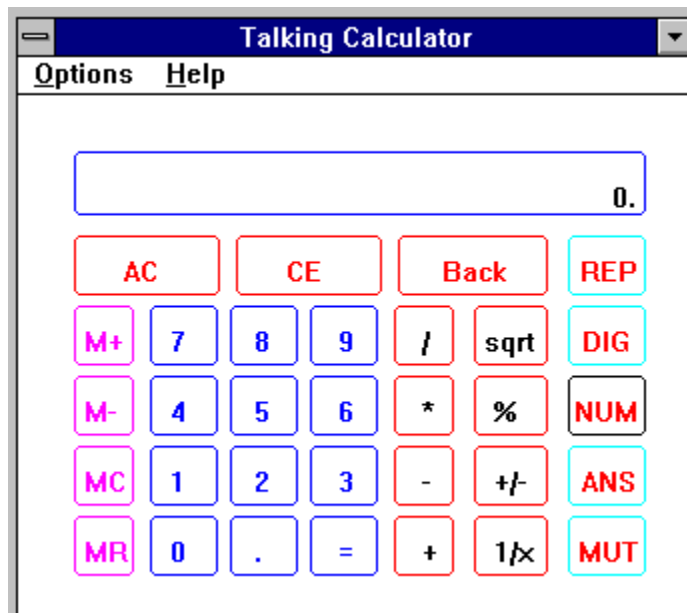
Performing Calculations

The calculator is easiest to use with the mouse -- just point to a calculator number or function button and click it. You can also use the keyboard for basic operations such as addition (+), subtraction (-), multiplication (*), division (/), and summation (=). As you work, the Talking Calculator speaks each number and operation you enter, as well as the resulting answer.

To perform a calculation

1. Enter the first number in the calculation.

2. Choose the operator you want to use. See the next page for a list of calculator buttons, their keyboard equivalents, and their functions.

3. Enter the next number. To erase a digit, click the **Back** button.
    To erase the entire line, click the **CE** (Clear Entry) button.

4. To hear and see the result, click the = (equal) button.
    From the keyboard, press either the = key or the **Enter** key.

To erase the entire calculation and start again, click the **AC** (All Clear) button or press the **Esc** key.

Here are some example of calculations:

$$100 + 8 = 108$$

$$100 + 8 * 2 = 216$$

$$100 + 8 + 10 = 118$$

Calculator Functions

Button	Key	Function
AC	Esc	All Clear--deletes the current calculation.
CE	Del	Clear Entry--deletes the current number.
Back	Backspace	Deletes the last digit of the current number.
+	+	Addition
-	-	Subtraction
*	*	Multiplication
/	/	Division
sqrt	@	Square root of current number
%	%	Percentage
+/-	F9	Change the sign of the current number
1/x	r	Reciprocal of the current number
=	= or Enter	Result of the current calculation Click again to repeat the operation
.	. or ,	Decimal point
REP		Repeat the last announcement
DIG		Hear each digit of the result
NUM		Hear the result as a whole number
ANS		Hear only the result
MUT		Silence the calculator

Using Calculator Memory

The buttons to the left of the numbers enable you to store a value and recall it at any time. When a value is stored in memory, it appears with an **M** in the top left of the display.
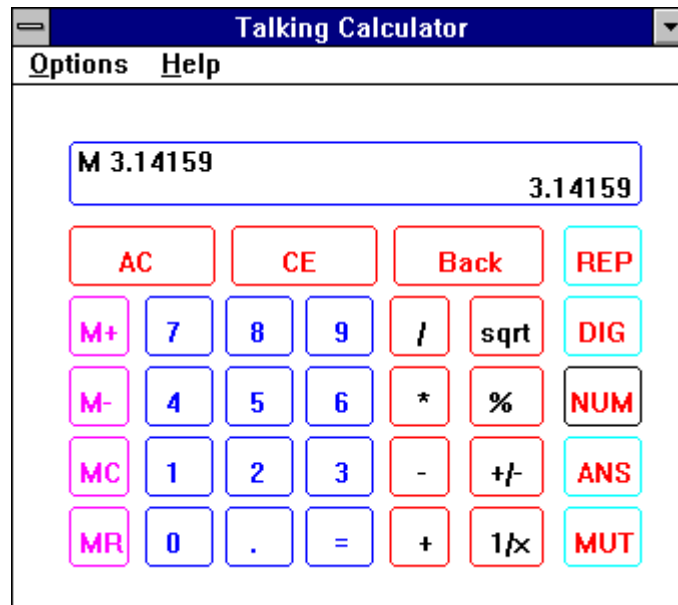

Button		Key	Function
M+	Mem Plus	Crtl+P	Store the current value
M-	Mem Minus	Ctrl+M	Store the negative of the current value
MC	Mem Clear	Crtl+L	Erase any value stored in memory
MR	Mem Recall	Ctrl+R	Insert the value stored in memory

Regulating the Announcements

- To repeat any announcement, click the **REP** button.

- To hear *each digit* of the result, click the **DIG** button or choose **Digit** from the Options menu. To hear the result as a *whole number*, click the **NUM** button or choose **Number** from the Options menu.
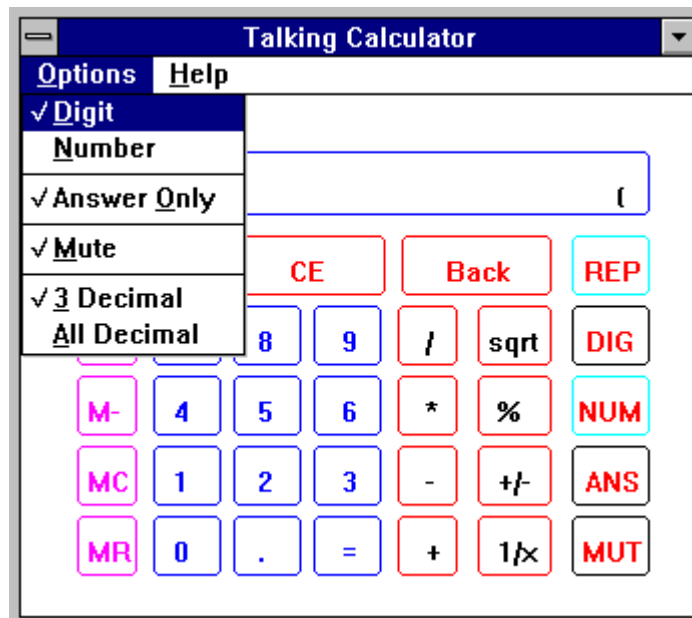
- To hear only the result announced, click the **ANS** button or choose **Answer Only** from the Options menu.

- To silence the calculator, click the **MUT** button or choose **Mute** from the Optioins menu.

- To hear results announced to three decimal places, choose **3 Decimal** from the Options menu. To hear all the decimal places announced, choose **All Decimal**.

The Help Menu

Contents displays a list of topics you can choose for information on the Talking Calculator.

About Talking Calculator gives the version number and copyright information.

10: The Talking Clock

Introduction

The Talking Clock displays the time in an analog or digital format. It also announces the time whenever you choose the **Say** command.
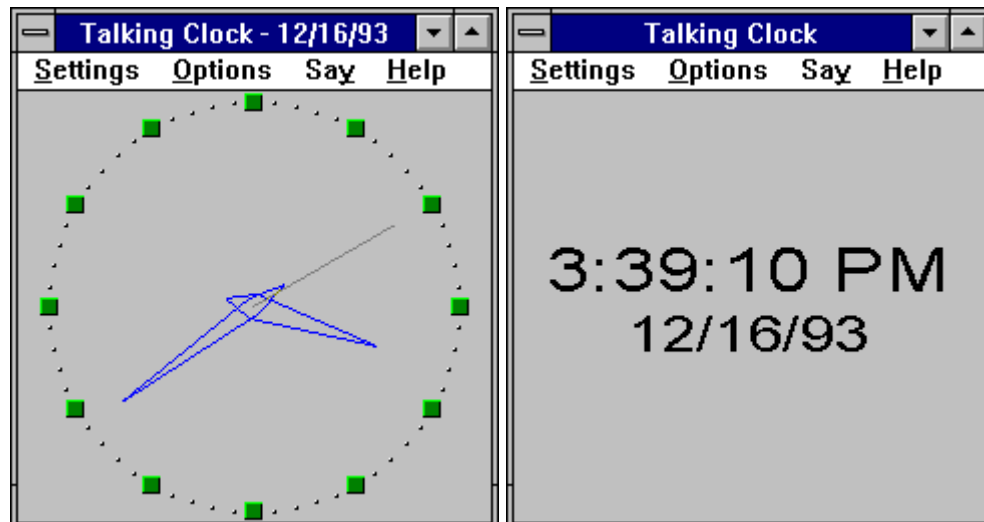
You can set the time and whether or not the date and seconds appear. For the digital time, you can choose the font used and select the 12 or 24 hour format.

Starting the Talking Clock

Open the Audio Applications group and double-click the Talking Clock icon.

The Talking Clock window appears with the analog or digital time display.

Positioning the Clock

As with most windows, you can size and move the Talking Clock window as you like. The System menu (the button in the top left corner of the window) provides two additional settings for posititioning the clock.

Always On Top displays the clock window or icon on top of other windows, even if they are selected.

Always Minimize keeps the Talking Clock minimized to an icon, with the time and date (if on) visible. To announce the time, double-click the icon. To display the window again, click the icon to open the System menu, turn off **Always Minimize**, then open the System menu again and choose **Restore**.
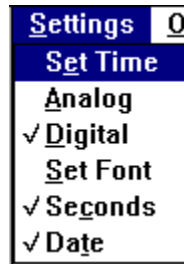
Announcing the Time

To announce the current time, click **Say** in the menu bar:

To announce the time by double-clicking the icon, turn on **Always Minimize** from the System menu. See the next page for details.
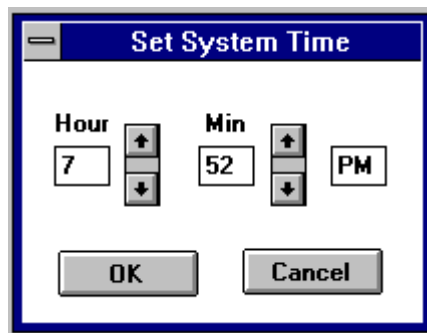
Setting the Clock

Commands on the Settings menu enable you to regulate what appears in the Talking Clock.

To set the time:

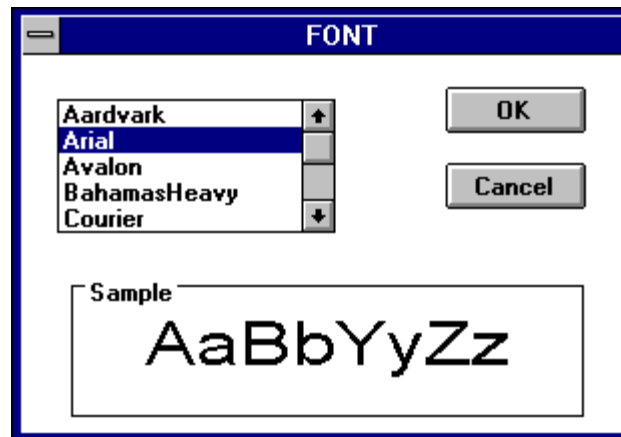1. From the Settings menu, choose **Set Time**. This dialog box appears:

2. Select the hour and minute and type new values, or use the up or down arrows to increase or decrease the number of hours and minutes.

4. Click the **OK** button.

To switch between the analog and digital display:

*   Choose **Analog** or **Digital** from the Settings menu.

To change the font used by the digital display:

1. From the Settings menu, set the display to **Digital**.

2. Choose **Set Font** from the Settings menu to display the Font dialog box.

3. Select a font from the list box.

4. Click the **OK** button.

To turn the seconds display on and off:

•   From the Settings menu, choose **Seconds**.

To turn the date display on and off:

•   From the Settings menu, choose **Date**.

To select the 12 hour or 24 hour digital display:

•   From the Options menu, choose **24 Hour Mode** or **12 Hour Mode**.

The Help Menu

Contents displays a list of topics you can choose for information on the Talking Clock.

About Talking Clock gives the version number and copyright information.

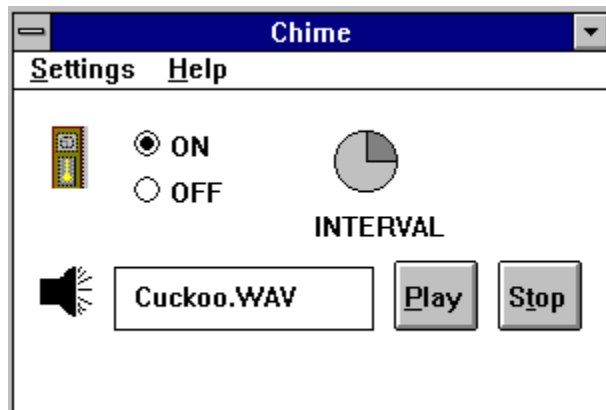# 11: The Chime

Introduction

The Chime announces the time or plays other sound every hour, half hour, or quarter hour.

Starting the Chime

From the Audio Applications group, double-click the Chime icon.

The Chime window appears.

To activate or deactivate the Chime, click the **ON** or **OFF** button. To hear the chime, click the **Play** button. Click the **Stop** button to halt the playing.

The Chime continues to be active if you reduce it to an icon.

Setting the Chime

To set the Chime, click the Settings menu. The Set Chime dialog box appears:

- To activate or deactivate the Chime, click the **ON** or **OFF** button.

- To hear the Chime, click the **Play** button.

- To change the Chime's sound, select the one you want from the Chime Sound Type list box.

- To change the Chime interval, under Chime Time select **Hour**, **Half Hour**, or **Quarter**.

When you are finished, click the **OK** button.

The Help Menu

Contents displays topics you can choose for information on the Chime.

About Chime gives the version number and copyright information.

12: The Audio Reminder

Introduction

The Audio Reminder has two alarms, each with a separate time, sound, and snooze settings. Once you set the alarms, they will go off on schedule every day as long as the Audio Reminder window is open or minimized to an icon.

Starting the Audio Reminder

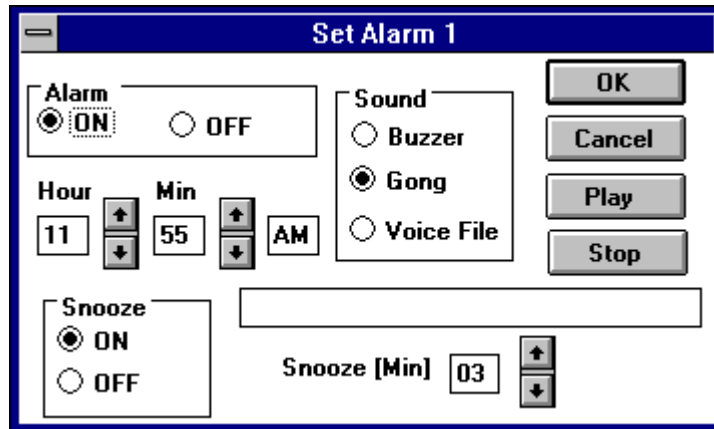In the Audio Applications group, double-click the Reminder icon.


Reminder

The Audio Reminder window appears:

Setting an Alarm

The Audio Reminder provides two alarms. To set one, choose **Set Alarm 1** or **Set Alarm 2** from the Settings menu. The Set Alarm dialog box appears:

- In the **Alarm** area, click ON or OFF to enable or disable the alarm.

- Under **Hour** and **Minute**, set the time for the alarm to go off.

- In the **Sound** area, select **Buzzer**, **Gong**, or **Voice File**. If you select **Voice File**, a dialog box appears for you to choose an audio file:
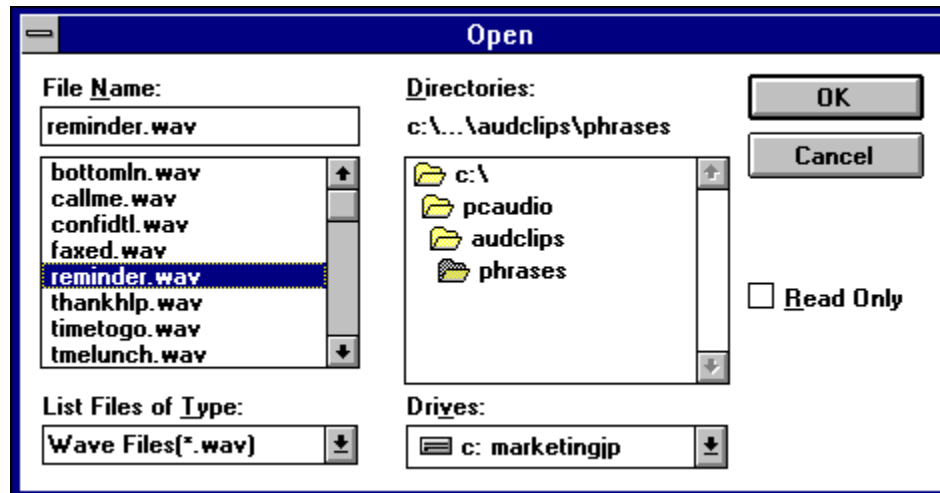
Choose an audio file and click the **OK** button. The path and name of the audio file now appear in the Set Alarm dialog box:
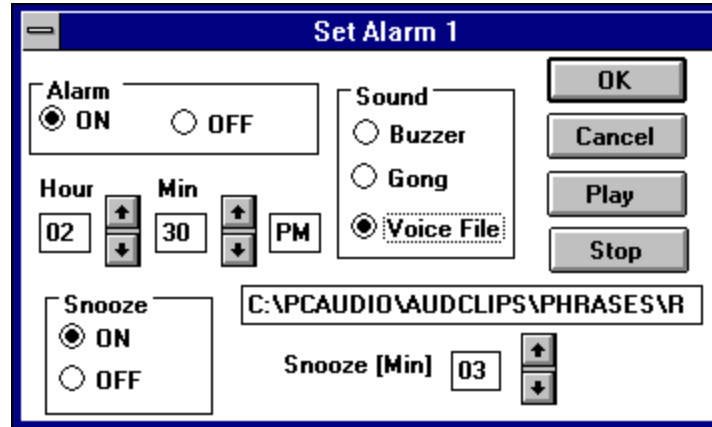
- To hear what the alarm sounds like, click the **Play** button.

Snooze: If ON, the snooze feature will continue sounding the alarm after it first goes off. With the settings above, for example, the alarm will first go off at 2:30 PM, then at 2:33, 2:36, 2:39, and so on until you turn it off.

- Under **Snooze**, click ON or OFF to enable or disable the snooze feature.

- After **Snooze (Min)**, set the interval to wait before replaying the alarm.

When you are finished setting the alarm, click the **OK** button.

The Audio Reminder window now shows the new settings for Alarm 1:

- To enable or disable either alarm, click its **ON** or **OFF** button.

- To hear either alarm, click its **Play** button.

- To stop an alarm currently playing, click its **Stop** button.

To hear the alarms go off on schedule, leave the Audio Reminder window either open or minimized to an icon.
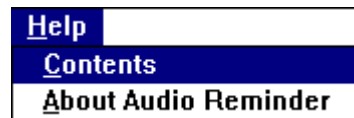
Audio Reminder Menu Commands

Settings Menu

Set Alarm 1 and **Set Alarm 2** enable you to specify the time, sound, and snooze interval for each alarm.

Help Menu

Contents displays a list of topics you can choose for information on the Audio Reminder.

About Audio Reminder gives the version number and copyright information.
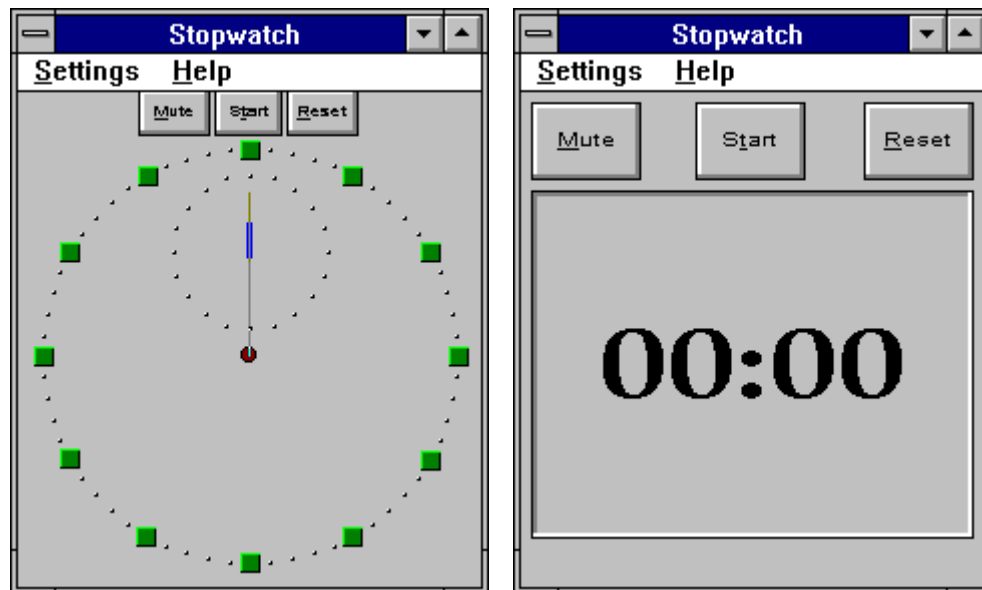
13: The Stopwatch

Introduction

The Stopwatch keeps track of the time elapsed since it was started. You can set the Stopwatch to sound a tick each second it is running and announce the amount of time elapsed since it was activated.

Starting the Stopwatch

From the Audio Applications group, double-click the Stopwatch icon.

The Stopwatch window appears with the analog or digital display:

Operating the Stopwatch

- To begin the Stopwatch, click the **Start** button. While the Stopwatch is running, the **Start** button is replaced with the **Stop** button.

- Click the **Stop** button to stop the Stopwatch and announce the elapsed time. The **Stop** button is replaced with the **Start** button. To resume the timing, click the **Start** button again.

- The Stopwatch ticks as it runs. To stop the ticking click the **Mute** button.

- To set the Stopwatch to **00:00** again, click the **Reset** button.

Controling the Appearance of the Stopwatch
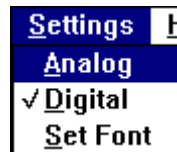
- From the Settings menu, choose **Analog** or **Digital** to change the format.

- Choose **Set Font** to change the font of numbers in the digital display.
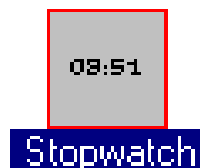 In the Font dialog box, select the font you want and click the **OK** button.
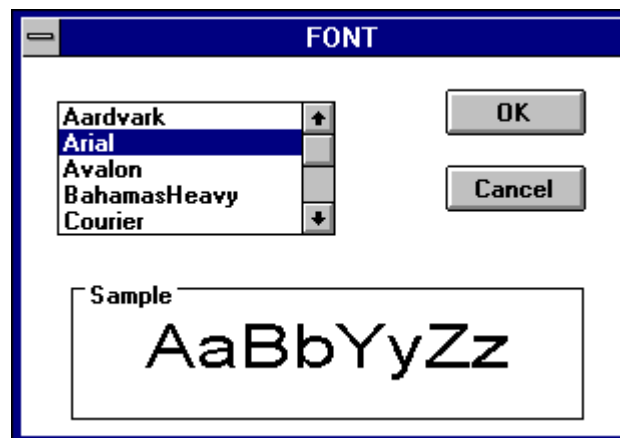
Here is the System menu for the Stopwatch:

- To reduce the Stopwatch to an icon, choose **Minimize**. The icon continues to show the elapsed time.

- To keep the Stopwatch window or icon on top of other windows, choose **Always On Top** from the System menu.

The Help Menu

Contents displays a list of topics you can choose for information on the Stopwatch.

About Stopwatch gives the version number and copyright information.
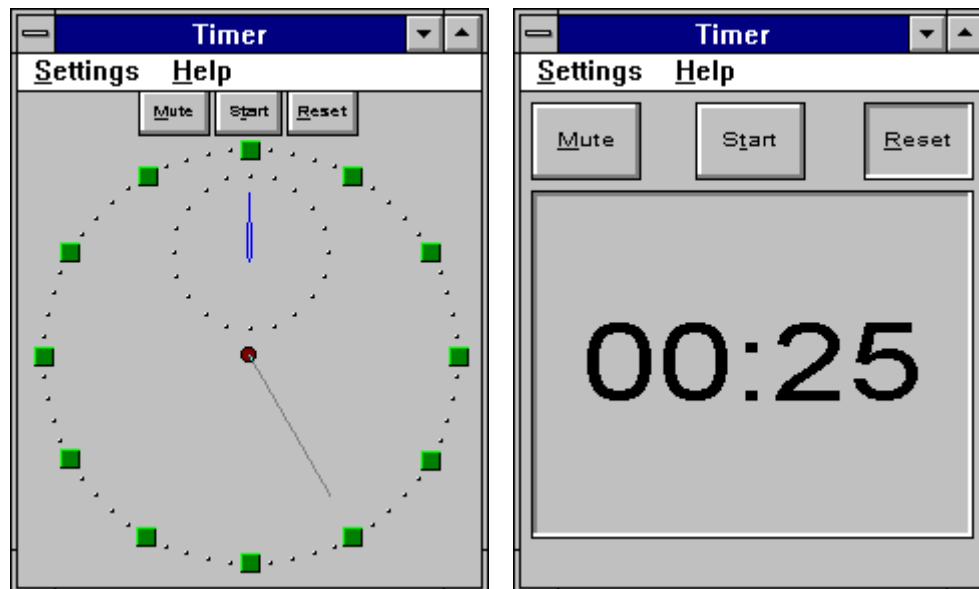
14: The Timer

Introduction

The Timer works the opposite of the Stopwatch. The Timer counts down from the time you set to 00:00. Whenever you stop the Timer, it announces the amount of time remaining. The Timer sounds a bell each second it is running. From 19 seconds on down, the Timer announces each second. You can also set the Timer to announce each minute as it passes.
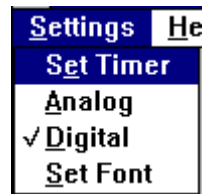
Starting the Timer

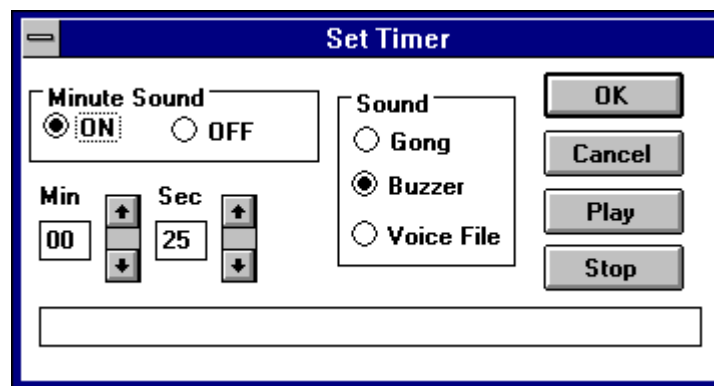From the Audio Applications group, double-click the Timer icon.

The Timer window appears with either the analog or the digital display:

Setting the Timer

To set the timer, choose **Set Time** from the Settings menu. The Set Timer dialog box appears:

- Under Min and Sec, set the amount of time for the Timer to count down.

- In the Minute Sound area, choose **ON** or **OFF** to activate or deactivate the voice announcement of each minute as it passes.

- In the Sound area, choose **Gong**, **Buzzer**, or **Voice File** for the sound to be played when the Timer runs out (reaches 00:00). If you choose **Voice File**, a dialog box appears for you choose an audio file. The name and path of the file will appear in the rectangle at the bottom of the window.

- To hear the sound played when the timer runs out, click the **Play** button.

When you are finished, click the **OK** button.

Operating the Timer

- To begin the Timer, click the **Start** button. While the Timer is running, the **Start** button is replaced with the **Stop** button.

- Click the **Stop** button to stop the Timer and announce the time remaining. The **Stop** button is replaced with the **Start** button. To continue the countdown, click the **Start** button again.

- The Timer sounds a bell each second as it runs. To silence the bell, click the **Mute** button. If the anouncement of each minute is ON (see above), it is also silenced.

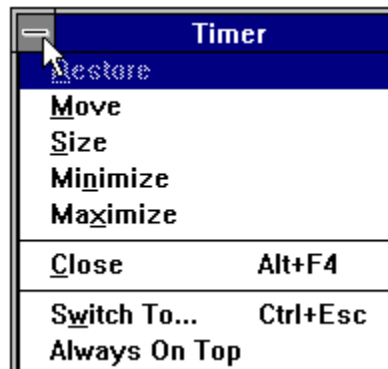- To set the Timer back to its original starting time, click the **Reset** button.

Controling the Appearance of the Timer
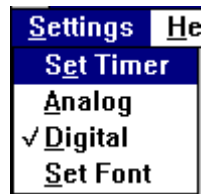
- From the Settings menu, choose **Analog** or **Digital** to change the format.

- Choose **Set Font** to change the font of numbers in the digital display.
  In the Font dialog box, select the font you want and click the **OK** button.
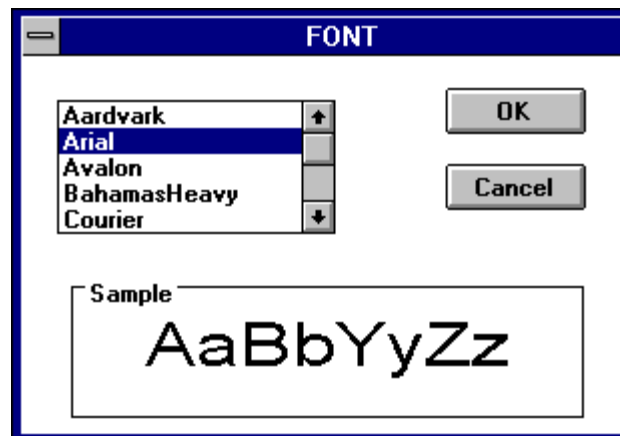
Here is the System menu for the Timer:

- To reduce the Timer to an icon, choose **Minimize**. The icon continues to show the time remaining.

- To keep the Timer window or icon on top of other windows, choose **Always On Top** from the System menu.

The Help Menu

Contents displays a list of topics you can choose for information on the Timer.

About Timer gives the version number and copyright information.