WHAM - Waveform Hold and Modify

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Questions

WHAM Keys

Use the following keys in Waveform Hold and Modify;

Press	To
P	Play the entire sound.
Ctrl+P	Play a selected portion of the sound.
Shift+Del	Cut the sound, or a selected portion of it, to the clipboard.
Ctrl+Ins	Store a copy of the sound, or of a selected portion of it, in the clipboard.
Shift+Ins	Paste the contents of the clipboard into the current sound.
Del	Delete a selected portion of the current sound.
Alt+F4	Exit from WHAM.

File Menu Commands

File|Open
Opens an existing sound file.

See Also
Loading a Sound from Disk
Sound File Formats

File|Save
Saves the current sound file to disk.

See Also
Saving a Sound to Disk
Sound File Formats

File|Save As
Saves the current sound file to disk under a different name.

See Also
Saving a Sound to Disk
Sound File Formats

File|Information
Allows you to view and change information about the current sound, such as the title and copyright information.

See Also
File Information Dialog

File|Exit
Exits from Waveform Hold and Modify.

Edit Menu Commands

Edit|Cut
Puts the selected part of the current sound into the Clipboard and removes it from the sound. Any previous Clipboard contents will be replaced.
If nothing is selected, the entire sound will be cut into the Clipboard.

See Also
Copying Sound to the Clipboard
Selecting Part of a Sound

Edit|Copy
Places a copy of the selected part of the current sound into the Clipboard. Any previous Clipboard contents will be replaced.
If nothing is selected, the entire sound will be copied into the Clipboard.

See Also
Copying Sound to the Clipboard
Selecting Part of a Sound

Edit|Paste
Inserts sound from the Clipboard into the current sound. The new sound can be appended to the end of the current sound, inserted at a selected point or be made to replace the current sound.

See Also
Inserting Sound from the Clipboard

Edit|Clear

Clears the selected part of the current sound, replacing it with silence. If nothing is selected, the entire sound is cleared.

See Also
Clearing Part of a Sound

Edit|Delete
Removes the selected part of the current sound. If nothing is selected, the entire sound will be deleted.

See Also
Deleting Part of a Sound

Edit|Delete unselected
Removes all but the selected part of the current sound.

See Also
Deleting Part of a Sound
Selecting Part of a Sound

Edit|Copy to file
Saves the selected part of the current sound to disk.

See Also

View Menu Commands

View|Actual size

Displays the waveform at actual size. Each line on the display represents one <u>sample</u>.

View|1:2 scale

Displays the waveform at a 1:2 scale. Each line on the display represents two samples.

View|1:5 scale

Displays the waveform at a 1:5 scale. Each line on the display represents five samples.

View|1:10 scale

Displays the waveform at a 1:10 scale. Each line on the display represents ten samples.

View|1:100 scale

Displays the waveform at a 1:100 scale. Each line on the display represents 100 samples.

View|Entire sound

Zooms out to display the entire sound.

View|Full height

Displays the waveform at full height.

View|Half height

Displays the waveform at half height, reducing the WHAM window's height. Use this to conserve screen space.

View|Solid display

Displays the waveform in solid form.

View|Outline display

Displays the waveform as a line.

View|Blob display

Displays the waveform as a symmetrical blob.

Effects Menu Commands

Effects|Change sign

Changes the <u>sign</u> of the current sound. This command allows signed sounds, such as Amiga sounds, to be converted to the Windows format.

See Also
<u>Converting Amiga Sounds</u>

Effects|Decode Mu-Law data

Converts the current sound from <u>mu-law</u> samples to linear samples. Be careful, because if the sound is not in mu-law format, this function will really make a mess of it.

Effects|Reverse

Reverses the selected part of the current sound, causing it to play backwards.
If nothing is selected, the entire sound is reversed.

See Also
<u>Reversing Part of a Sound</u>

Effects|Volume|Increase (200%)

Increases the volume of the selected part of the current sound, making it twice as loud. If nothing is selected, the entire sound's volume is increased.

See Also
<u>Changing the Volume of Part of a Sound</u>

Effects|Volume|Decrease (50%)

Decreases the volume of the selected part of the current sound, making it half as loud. If nothing is selected, the entire sound's volume is decreased.

See Also
<u>Changing the Volume of Part of a Sound</u>

Effects|Volume|Change

Changes the volume of the selected part of the sound by a user-specified percentage. At present, the percentage is rounded to the nearest 50%.

See Also
<u>Changing the Volume of Part of a Sound</u>

Effects|Playback rate

Changes the playback rate of the current sound. The playback rate is specified in kilohertz (kHz). The higher the playback rate, the faster the sound is played.

See Also
<u>Speeding Up or Slowing Down a Sound</u>

Effects|Stretch/Shrink

Physically changes the length of a sound. This allows a sound to be sped up or slowed down without changing its playback rate, or to be converted to a different playback rate.

Options Menu Commands

Options|Can modify unselected

If this menu item is checked then operations, such as copying and reversing, will be performed on the entire sound if nothing is selected. If this menu option is not checked, you have to select part of the sound before performing such an operation.

See Also
Selecting Part of a Sound

Options|Information

Calls up a dialog that allows you to select which file formats can contain user-defined information, the default copyright message and whether WHAM reads the DOS creation date of files.

See Also
Information Defaults Dialog

Speeding Up or Slowing Down a Sound

You can change the speed at which the sound is played back. The speed is specified in samples per second, or hertz (Hz). The default speed is 22,050 Hz, or approximately 22 kilohertz (kHz). Windows can handle any speed between 4000 and 44,100 Hz.

To change the playback speed of the current sound

1 From the Effects menu, select Playback Rate.
2 Enter the new speed in hertz, or select a standard speed from the drop-down list.
3 Click on OK, or press ENTER.

Editing Information about a Sound

Sounds stored in the Waveform and IFF <u>formats</u> can contain <u>information</u> about their contents. You can inspect this information, modify it or enter your own information.

To view or edit the current sound's information

1	From the File menu, select Information.
	You will be presented with a dialog containing any information present in the current sound. Here you can enter your own information.

See Also
<u>File Information Dialog</u>

Selecting Part of a Sound

You can select part of the current sound. Then you can play the selection, copy it to the Clipboard or modify it.
If you are not satisfied with how much you have selected, you can move the start and end of the selection.

To select part of the current sound
1   Position the mouse cursor over the start of the part of the waveform that you wish to select.
2   Hold down the left mouse button and drag to the end of the part that you wish to select.
3   Release the left mouse button.

The selected part of the sound is displayed inversed.

To change how much is selected

1   Position the mouse cursor over the <u>marker</u> beneath the start or end of the selected area.
2   Hold down the left mouse button and drag the marker to its new position.
3   Release the left mouse button.

Hint: To see whether you have selected the right part of the sound, press and hold down

Ctrl and press P, or click on the 'Play selection' button.

Changing the Volume of Part of a Sound

You can increase or decrease the volume of the current sound, or of any part of it.

To double the volume of part of a sound

1   <u>Select</u> the part of the sound whose volume you wish to double. This is not necessary if you wish to double the volume of the entire sound.
2   From the Effects menu, select Volume, and then select Increase (200%) from the menu that pops up.
Note: If part of a sound is already very loud, increasing its volume will distort it.

To halve the volume of part of a sound

1   Select the part of the sound whose volume you wish to halve. This is not necessary if you wish to halve the volume of the entire sound.
2   From the **Effects** menu, select **Volume**, and then select **Decrease (50%)** from the menu that pops up.

To change the volume of part of a sound by a percentage

1   Select the part of the sound whose volume you wish to change. This is not necessary if you wish to change the volume of the entire sound.
2   From the **Effects** menu, select **Volume**, and then select **Change...** from the menu that pops up.
3   Enter the percentage that you wish to change the volume by and click on OK or press Enter.
    For example, 300% will treble the volume and 50% will halve it.
Note: If part of a sound is already very loud, increasing its volume will distort it.

Clearing Part of a Sound

You can clear part of a sound. This erases that part of the sound, replacing it with silence.

To clear part of a sound

1   Select the part of the sound that you wish to clear.
2   From the **Effects** menu, select **Clear**.

Reversing Part of a Sound

You can reverse the order of part of a sound. This causes that part to be played backwards.

To reverse part of a sound
1   Select the part that you wish to reverse. If you wish to reverse the entire sound, do not select anything.
2   From the **Effects** menu, select **Reverse**.

Converting Amiga Sounds

You can convert <u>signed</u> sounds, such as Amiga sounds, to the unsigned format used by Windows. You can also convert sounds to signed format.

To convert the current sound from signed to unsigned format (or vice versa)

From the **Effects** menu, select **Change sign**.

Saving Part of a Sound to Disk

You can select part of a sound and save it to disk as a separate sound.

To save part of the current sound to disk
1   Select the part of the sound that you wish to save.
2   From the **Edit** menu, select **Copy to file**.
3   Enter the name for the new file in the dialog. You can also select the format to save the sound in.

Deleting Part of a Sound

You can delete part of a sound. That part is removed and the sound becomes shorter.

To delete part of the current sound
1   Select the part of the sound that you wish to delete.
2   From the **Edit** menu, select **Delete**.

To delete all but part of the current sound
1   Select the part of the sound that you wish to keep.
2   From the **Edit** menu, select **Delete unselected**.

Inserting Sound from the Clipboard

You can append sound that is on the clipboard to the end of the current sound, or insert it into the current sound at any point. You can also replace the current sound, if any, with sound from the clipboard.

To append sound from the clipboard to the end of the current sound
1   From the **Edit** menu, select **Paste**.

or click on the Paste button.
2   In the dialog that appears, select the **Add to end** option button and click on OK.

To insert sound from the clipboard into the current sound
1   <u>Select</u> the part of the sound that you wish to replace with the sound in the clipboard.
2   From the **Edit** menu, select **Paste**.

or click on the Paste button.
3   In the dialog that appears, select the **Replace selection** option button and click on OK.

To replace the current sound with the contents of the clipboard
1   From the **Edit** menu, select **Paste**.

or click on the Paste button.
2   In the dialog that appears, select the **Replace waveform** option button and click on OK.

Copying Sound to the Clipboard

You can copy the current sound, or part of it, to the Clipboard. From there, it can be inserted into sounds in WHAM.

To copy part of a sound to the clipboard
1   Select the part of the current sound that you wish to copy. If you wish to copy the entire sound, do not select anything.
2   From the **Edit** menu, select **Copy**.

or click on the Copy button.

To copy part of a sound to the clipboard and delete it
1   Select the part of the current sound that you wish to copy. If you wish to copy the entire sound, do not select anything.
2   From the Edit menu, select Cut.

or click on the Cut button.

See Also
Inserting Sound from the Clipboard

Saving a Sound to Disk

You can save the current sound to a file on disk. This file can be in one of several <u>formats</u> supported by WHAM.

To save the current sound to disk
1   From the **File** menu, select **Save**.

or click on the Save button.
2   If the sound has not been given a name, WHAM will prompt you to enter a name for it. You can also select the format in which it is saved.

To save the current sound under a different name or in a different format
1   From the File menu, select Save As.
2   WHAM will prompt you for a name for the sound. You can also select the format in which it is saved.

Loading a Sound from Disk

You can load an existing sound file, such as one of the sounds provided with Windows, into WHAM.

To load a sound file from disk
1   From the **File** menu, select **Open**.

or click on the Open button.
2   Select the file name from the list. You can change directories and drives through the dialog. You can also select the <u>type</u> of files that you wish to load.

Playing a Sound

You can play the current sound, or a part of it, through your sound output device.

To play the current sound
Press 'P',

[▶]

 or click on the 'Play' button.

To play part of the current sound
Press and hold down Ctrl and press P,

[▶..]

 or click on the 'Play selection' button.

File Information Dialog

The File Information dialog contains a number of fields that may contain information about the current sound. This information may be stored in sound files.

Title

This field contains the title of the current sound. You can give your sounds titles. This field can be stored in Waveform and IFF files.

Copyright notice

You may enter a copyright notice for your sound here. This field can be stored in Waveform and IFF files.

Creation date

This shows the date of creation for the current sound. This can be stored in Waveform files. If no date is stored in the current file, or it is not a Waveform file, WHAM can fill this field from the DOS creation date of the file.

Software

This shows the software used to create or edit the current sound. This field exists in Waveform and IFF files.

WAVE Info >>

Pressing this button expands the information dialog, revealing four additional fields. These are;

Artist

This contains the name of the artist who created the original sound used in the sample. If there is more than one artist, separate names with a semicolon and a space. This field is only present in Waveform files.
E.g.;   "James Brown"

Engineer

This contains the name of the person who edited the sound. If more than one person is involved, separate names with a semicolon and a space. This field is only present in Waveform files.
E.g.;   "John Smith; Joe Jones"

Technician

This contains the name of the person who digitised the sound. If more than one person is involved, separate names with a semicolon and a space. This field is only present in Waveform files.
E.g.;   "Fred Jackson; Ann White"

Comments

This contains any comments you may wish to insert into your file. This field is only present in Waveform files.

Information Defaults Dialog

This dialog allows you to set options relating to the storage of user-defined <u>information</u> in sound files.

Copyright notice

This allows you to set the default copyright notice. This will be copied into the <u>file information dialog</u>'s **Copyright notice** field.

(Save information in) Waveform (.WAV) files

If this is checked, information, as defined in the File Information dialog will be saved in Waveform files. If this is unchecked, no information is stored in these files.

(Save information in) IFF files

If this is checked, information, as defined in the File Information dialog will be saved in IFF files. If this is unchecked, no information is stored in these files.

Get creation date from DOS

If this is checked, WHAM will fill the Creation Date information field from a file's DOS creation date if no date is stored in the file. If this is unchecked, this field is left blank and filled with the current date when the file is saved.

Questions

Q: Can WHAM record sound?
A: At the moment, no. Yes, I know that the name "Waveform Hold and Modify" implies the ability to record sound, but while I was developing this program, I didn't have access to a sound card. However, I intend to put in a sound recording capability as soon as possible.

Q: Can I transfer sound between WHAM and Sound Recorder?
A: You can transfer sound from the Sound Recorder to WHAM, but not the other way. The Sound Recorder is an OLE application, and was not intended to transfer data by other means. Of course, you can save a sound in WHAM and open it in the Sound Recorder.

Q: What do I do if a sound sounds noisy and distorted?
A: If the sound sounds dirty and the waveform looks messy that the sound is probably in <u>signed</u> (Amiga) format. Before playing it, convert it to unsigned format by selecting the **Effects|Change Sign** function.
If the sound sounds slightly distorted and the waveform display shows many curved patterns, then the sound is probably in <u>Mu-Law</u> format. You can convert this to linear format by selecting **Effects|Decode Mu-Law data**.

Q: Can WHAM handle Macintosh sound formats?
A: Unfortunately not. I would have liked to have put in SND resource read and write capabilities, but I can't find the Macintosh sound resource format. I have only seen programs that write this format on the Macintosh, and I have heard that these use some system functions.

   If you wish to convert your favourite Windows sounds to Macintosh files, you must firstly save them to an intermediate format and use a Macintosh utility to do the conversion. To do this, I save files in IFF format and use a Macintosh program called *AmigaSndConvert* to convert them to Macintosh sound files.

Signed and Unsigned Samples

There are two ways of storing digitised sound; with signed samples and unsigned samples. Signed samples are values ranging from -128 to 127 and centered around 0. Unsigned samples are centered around 128 and range from 0 to 255. Windows uses unsigned samples.

Sample

Digitised sound consists of a series of samples. A sample is an individual reading of volume.

Marker ◢

A marker is a small triangle, immediately below the waveform display, representing the start or end of a selection. By dragging a marker, you can change the selection.

Sound File Formats

WHAM can read and write two sound formats;

Waveform   The Microsoft Windows 'WAVE' sound format. This format is used for Windows system sounds. Waveform files have the extension '.WAV'.

Raw 8-bit sample   Sound files in this format consist of nothing more than the samples that they are comprised of.

Creative Voice   This is the SoundBlaster sound format and has the extension, '.VOC'. WHAM can currently only deal with uncompressed .VOC files.

Amiga IFF   This is the standard Amiga 8-bit sound (8SVX) format. These files are often given the extension, '.IFF'.

Sun/NeXT sound   This is the standard sound format of the Sun and NeXT workstations, and traditionally have the extension, '.au'. These formats can contain either linear or <u>mu-law</u> samples. This version of WHAM can only read 8-bit linear and mu-law sounds and write linear sounds.

AIFF   This format was developed by Apple and is also used by Silicon Graphics (SGI) workstations. The AIFF file structure is based on the Amiga IFF tagged file structure, although it is <u>not</u> the same as the IFF (8SVX) format.

Linear and Mu-law samples

Most sounds are stored using linear <u>samples</u>. Here, the amplitude readings are conventional, linear numbers.
Mu-law samples are another way of encoding sounds. In mu-law-encoded sounds, samples are logarithmic, rather than linear. This has the advantage of giving 14-bit resolution, while only taking up eight bits of space. Mu-law encoding is used mainly on workstations.
Microsoft Windows 3.1 does not directly support mu-law encoding, which is a shame. This means that sounds currently have to be converted to linear samples in order to be played from Windows.   However, Microsoft have released an updated RIFF sound file specification, which includes support for mu-law encoding. I will add full mu-law support to WHAM as soon as I have a version of Windows that complies with the updated specification.

Information

User-defined information may be stored in Waveform and IFF sound files. This information included things such as the sound title, artist name and a copyright message.