OctaMED

COLLABORATORS			
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Contents

Chapter 1

OctaMED

1.1 Help Contents

```
                Welcome to the OctaMED help system. The following topics are  ↩
                   available:


                       Introduction
                 <-- Read first if you are new to OctaMED

                 Those upgrading from V4...

                     The user interface

                        Installation

                           Menus

                          Windows

                        Main screen

                       Player commands

                     Keyboard shortcuts
                * Click any boxed text to see more information on that subject.

* Use the up and down arrow keys to reveal more of a topic.

+ For more detailed information on using this help file, press the "Help"
  key.
```

1.2 OctaMED Menus

```
                The OctaMED menu bar contains the following menus:


                 Project
```

Display

Song

Block

Track

Instr

Edit

MIDI

Settings

1.3 The Project Menu

New This item displays the
New Project window
, with which
you may discard the current project and begin a new one.

[Keyboard shortcut: Amiga-N]

Open Displays a
file requester
to load a new song into memory.
The current song will be discarded. A confirmation
requester, offering to save the current song first, will
appear if the current project has been changed since last
saving.

When loading songs without instruments, a requester will
appear if an instrument cannot be located on disk, offering
to continue loading the other instruments or to stop
loading the song altogether.

Note that although you can load normal Tracker modules, you
can't load packed Tracker modules. Tracker player commands
will be converted to the OctaMED equivalent.

If a song isn't identified as any format listed in the

Save Options window
, a requester will appear wondering if
you wish to try to load the file as an old Soundtracker
song. If it is an old Soundtracker song it should load
correctly, but if not OctaMED may crash! You have been
warned ;-D

[Keyboard shortcut: Amiga-O]

Save Brings up the

Save Options window
, with which you can save
the current project on to disk.

[Keyboard shortcut: Amiga-S]

Save Timer
NEW
Opens the
Save Timer window
, which provides an option
similar to the "automatic save" function in wordprocessors.

[Keyboard shortcut: Amiga-.]

Delete Files
Displays a
file requester
allowing you to delete one or
more files (after confirmation).

[Keyboard shortcut: Amiga-D]

Print
Brings up the
Print Options
window, where you may print the
current song in various ways.

[Keyboard shortcut: Amiga-P]

Last Message
NEW
Displays the last message (error or information) that
appeared on the screen title bar.

[Keyboard shortcut: Amiga-/]

About
Displays information about OctaMED.

[Keyboard shortcut: Amiga-?]

Quit OctaMED
Quits the program. Will display a confirmation requester if
the project has been changed since last saving.

[Keyboard shortcut: Amiga-Q]

1.4 The Display Menu

Tracker Editor
Displays the
Tracker editor
.

[Keyboard shortcut: Amiga-[ ]

Notation Editor
Displays the
notation editor
.

[Keyboard shortcut: Amiga-]]

```
Synth Editor            Opens the
                Synthetic Sound Editor
                 window.

                        [ Keyboard shortcut: Left Alt-Y ]

Sample Editor           Opens the
                Sample Editor
                 window.

                        [ Keyboard shortcut: Left Alt-E ]

Sample List Editor      Opens the
                Sample List Editor
                 window.

                        [ Keyboard shortcut: Amiga-L ]

MIDI Message Editor     Opens the
                MIDI Message Editor
                 window.

                        [ Keyboard shortcut: Amiga-G ]

Input Map Editor        Opens the
                Input Map Editor
                 window.

                        [ Keyboard shortcut: Amiga-A ]

Notation Control        Opens the
                Notation Control window
                . Useful if, while
*NEW*                   working in the notation editor, you have closed
                        this window to relieve "cluttering".

                        [ Keyboard shortcut: Amiga-' ]
```

1.5 The Song Menu

```
                Select          Brings up the
                Song Selector window
                , with which you may
*NEW*           select the current song (of a multi-module).

                [ Keyboard shortcut: Left Alt-G ]

Add New         Creates a new song, and appends it as the last song.

                [ Keyboard shortcut: Shift-Ctrl-] ]

Delete Last     Deletes the last song of a multi-module. Has no effect if
                there is only one song in memory.

                [ Keyboard shortcut: Shift-Ctrl-[ ]
```

Playing Sequence — Opens the Playing Sequence window.

[Keyboard shortcut: Left Alt-Q]

Set Options — Opens the Song Options window. This window contains several song-specific options.

[Keyboard shortcut: Amiga-J]

Set Volumes — Opens the Track Volumes window, which is used to set the volumes of the tracks relative to the volumes of the notes in the song.

[Keyboard shortcut: Amiga-R]

Set Annotation — Opens a window containing a single text box. In this box you may type in any text up to 70 characters long. This text will be saved with the song, then displayed on the title bar when the song is reloaded. Suitable annotation text is, for example, copyright, composer's name etc.

[Keyboard shortcut: Amiga-,]

1.6 The Block Menu

New/Insert — Inserts a new block at the current block position. The length and width of the newly-created block will be taken from the current block.

[Keyboard shortcut: Ctrl-I]

New/Append — Adds a new block after the last block. The length and width will be taken from the current block.

[Keyboard shortcut: Ctrl-N]

New/Insert Def — As Insert, but uses the built-in default length/width (64 lines, 4 or 8 tracks - 8 tracks if the channel mode is 5 - 8-channel: see Song Options).

[Keyboard shortcut: Shift-Ctrl-I]

New/Append Def — As Append, but uses the built-in defaults.

[Keyboard shortcut: Shift-Ctrl-N]

Set Properties Opens the
Block Properties window
, which contains some
block-specific parameters.

[Keyboard shortcut: Amiga-B]

Block List Opens the
Block List window
. This window allows easy
NEW management of blocks.

[Keyboard shortcut: Left Alt-B]

Highlight Opens the
Highlight Options window
, where you may highlight
the lines in a block in a particular order.

[Keyboard shortcut: Amiga-H]

Cut Copies the current block to the copy buffer, and clears the
block.

[Keyboard shortcut: Shift-Right Alt-X]

Copy Copies the current block to the copy buffer.

[Keyboard shortcut: Shift-Right Alt-C]

Paste Copies the copy buffer’s contents to the current block.

[Keyboard shortcut: Shift-Right Alt-V]

Swap w/Buff Swaps the contents of the current block with the contents
of the copy buffer.

[Keyboard shortcut: Shift-Right Alt-Z]

Insert Line Inserts a new line at the cursor position.

Delete Line Deletes the line at the cursor position.

Expand/Shrink Opens the
Expand/Shrink window
.

[Keyboard shortcut: Amiga-E]

Split At Cursor Splits the current block into two blocks; the current line
becomes the first line of the next block.

[Keyboard shortcut: Shift-Ctrl-J]

Join With Next Joins the current block with the following one.

[Keyboard shortcut: Ctrl-J]

1.7 The Track Menu

Cut — Copies the current track to the copy buffer, and clears the track.

[Keyboard shortcut: Amiga-X]

Copy — Copies the current track to the copy buffer.

[Keyboard shortcut: Amiga-C]

Paste — Copies the copy buffer's contents to the current track.

[Keyboard shortcut: Amiga-V]

Swap w/Buff — Swaps the contents of the current track with the contents of the copy buffer.

[Keyboard shortcut: Amiga-Z]

Insert Empty — Inserts an empty track. Tracks on the right of the current track will be shifted right. The rightmost track will be discarded. The submenu allows you to apply the operation to either the current block only or *NEW* the entire song.

[Keyboard shortcut: Curr. Block = R.Alt-Shift-Backspace]

Delete — Deletes a track. Tracks on the right of the current track will be shifted left. The submenu allows you to apply the operation to either the current block only or *NEW* the entire song.

[Keyboard shortcut: Curr. Block = Right Alt-Backspace]

1.8 The Instr Menu

Set Parameters — Opens the Instrument Parameters window, which allows you to edit various instrument parameters.

[Keyboard shortcut: Left Alt-I]

Load Instrument(s) — Opens a file requester to load instruments into memory. OctaMED can load any type of instrument listed in Instrument Type. *NEW* If more than one instrument is selected, they are loaded into consecutive sample slots in alphabetical order.

[Keyboard shortcut: Amiga-I]

Save Instrument — Opens a file requester to save the current instrument on to disk. The sub-menu gives you the choice of saving as an IFF 8SVX file or as a pure binary file (Raw). The difference is that IFF files also contain loop information (making them slightly larger than Raw files): see Instrument Parameters.

[Keyboard shortcuts: IFF = Ctrl-S
Raw = Shift-Ctrl-S]

Flush Current — Removes the current instrument from memory, frees the memory used by it, and clears all its parameters.

[Keyboard shortcut: Ctrl-G]

Flush All Unused *NEW* — Removes all instruments unused by the current project (after a confirmation requester).

[Keyboard shortcut: Shift-Ctrl-G]

Automatic Flush *NEW* — When selected, a requester to flush unused instruments will appear on pressing the Clear Current gadget in the New Project window.

The following two items affect instrument names when loading songs or instruments.

Add Path — Adds the full path of the instrument when loaded. (The "path" is the disk and directory name, for example: "Samples1:Bass/"). This is useful when saving songs without instruments which include instruments not in your sample list. When the song is reloaded, the instruments will be loaded from the respective disks.

Remove Path — Usually songs made with Trackers have instrument names which include the full path. This option removes the paths of the instruments, so that they can be loaded using the sample list instead of directly from the appropriate disk.

Both of these may be active at once. In this case, the original path is removed, the instrument is loaded using the sample list, and the path name

from the sample list is added.

Note that the maximum length of an instrument name is 40 characters, so characters at the end of the name may be lost if the path is very long.

1.9 The Edit Menu

Apart from Transpose, all items in this menu act on the current range, which is selected by dragging the mouse in the Tracker editor.

(*NEW* The button used to drag is defined in the Mouse Options window).

Cut Range	Copies the range to the copy buffer, and clears the track. [Keyboard shortcut: Ctrl-X]
Copy Range	Copies the range to the copy buffer. [Keyboard shortcut: Ctrl-C]
Paste Range	Inserts the contents of the copy buffer at the cursor position. [Keyboard shortcut: Ctrl-V]
Paste To Selected Tracks	As Paste Range, but inserts consecutive tracks in the copy buffer to consecutive selected tracks in the block. For example, imagine the copy buffer contains 3 tracks, the cursor is on track 2, and tracks 2, 5 and 8 are selected. Choosing Paste to Sel Tracks pastes the copy buffer to tracks 2, 5 and 8 (instead of 2, 3 and 4 as with normal Paste). Tracks in the block are selected by setting the cycle gadget on the upper screen to "Select". [Keyboard shortcut: Shift-Ctrl-V]
Erase Range	Clears the notes in the range. [Keyboard shortcut: Ctrl-Z]
Discard Copy Buffer	Flushes the copy buffer and frees the memory it occupied.

[Keyboard shortcut: Amiga-F]

Transpose — Opens the Transpose window, which allows transposing and changing of notes, and changing of instruments.

[Keyboard shortcut: Amiga-T]

Range Current Track — Ranges the whole of the track the cursor is on.

[Keyboard shortcut: Ctrl-B]

Range Current Block — Ranges the whole of the current block.

[Keyboard shortcut: Shift-Ctrl-B]

Spread Notes — Opens the Spread Notes window, which allows spreading of the notes in the range across consecutive tracks to the right of the range.

[Keyboard shortcut: Amiga-W]

Pitch Slide — Creates a pitch slide, starting from the cursor position and ending at the next note encountered in the current track.

The sub-menus select which sliding command to use (see Commands 0 - 9), but the better result is usually achieved using Type 1. (The difference is that type 2 replays the note after sliding to it, while type 1 doesn't replay the note).

[Keyboard shortcuts: Type 1 = Ctrl-T
Type 2 = Shift-Ctrl-T]

Volume Slide — Creates a volume slide, with the cursor position between the starting and ending volume commands (that is, the "C" commands: see Commands A - F).

[Keyboard shortcut: Ctrl-O]

Generic Slide — As Volume Slide, but always in hexadecimal (even when Decimal Volumes is selected in the Song Options window). This results in slightly

NEW

faster execution.

[Keyboard shortcut: Shift-Ctrl-O]

Note Echo Opens the Note Echo window , which can produce echoes automatically using the "C" command.

[Keyboard shortcut: Amiga-=]

1.10 The MIDI Menu

OctaMED can output notes and some player commands (see MIDI Commands) to external MIDI devices, by way of a MIDI interface which you should connect to your Amiga's serial port. This menu contains the required functions and settings for MIDI operation.

You also need to set the MIDI channel and preset number of each MIDI instrument, using the Instrument Parameters window . (This window also contains the "Suppress NoteOff" gadget used with some MIDI instruments).

You may use MIDI instruments on any track, and you may also mix Amiga samples and MIDI instruments on the same track (but only on tracks 0 - 3).

Note: please refer to your MIDI device's manual if you come across terms in this topic that you aren't sure of.

MIDI Active Activates MIDI when selected. If the serial port is being used by another program, however, you can't use MIDI. You must quit the other program and try again. When this option is on, an "M" appears in the display box to the right of Cont Block in the upper screen .

[Keyboard shortcut: Amiga-M]

Input Active When selected, allows the entering of notes into the song using the MIDI device. Editing and MIDI Active must be on. An "I" appears in the display box mentioned above when this function is active.

You can also use your MIDI device to perform many editing functions, using the input map editor .

[Keyboard shortcut: Amiga-U]

Input Channel — Brings up the Input Channel window, with which you may set the MIDI input channel.

[Keyboard shortcut: Amiga-\ ]

Ext Sync and Send — "Synchronization" (or "sync" for short) involves OctaMED sending information which allows MIDI devices to keep in time with OctaMED.

When "Send Sync" is activated, this information is sent on clicking either Play Song or STOP (note that it isn't sent with Cont Song, Play Block or Cont Block).

When "Ext Sync" is activated, OctaMED can be synced "externally", meaning that an external MIDI device sends the sync information instead of OctaMED. As well as (of course) "MIDI Active", "Input Active" must be selected for Ext Sync to work.

[Keyboard shortcuts: Amiga-1 and Amiga-2]

Send Active Sensing — After "MIDI Active" has been selected, OctaMED periodically sends "active sensing" ($FE) messages when this is turned on.

[Keyboard shortcut: Amiga-3]

Send Out Input — When activated, OctaMED replays input MIDI notes. Useful for owners of a separate sound module and keyboard.

[Keyboard shortcut: Amiga-4]

Read Key-Up's — When switched on, OctaMED records key-up events (as "FFF" commands - see Commands A - F).

[Keyboard shortcut: Amiga-5]

Read Volume — If you have a touch-sensitive keyboard, the volume will be entered as a "C" command when notes are input (see Commands A - F).

[Keyboard shortcut: Amiga-6]

Reset Pitch/Presets — Resets pitchbenders and modulation wheels on all channels, and reacts to preset changes on your MIDI device.

[Keyboard shortcut: Ctrl-Space]

Send MIDI Reset — Sends a "MIDI Reset" command ($FF).

[Keyboard shortcut: Amiga- -]

Send Local Control — Sends a "Local Control On / Off" command. When using a keyboard synthesizer, the local control (when on) routes the keyboard directly to the internal synthesizer. In a multi-timbral setup, switch local control off; otherwise, it's usually best to keep it on.

[Keyboard shortcut: Amiga-< and Amiga->]

Note Killing — Selects the method for turning off all notes (by clicking "STOP" or pressing the space bar).

"$Bx 7B 00" sends "MIDI All Notes Off" messages for each MIDI channel, whereas "Note Off Msgs" sends standard "MIDI Note Off" messages for each track.

The former is recommended if your MIDI device supports it. It will kill all notes, not just those triggered by OctaMED.

(Also see the MIDI Message Editor)

1.11 The Settings Menu

Mouse Options — Displays the Mouse Options window , which allows you to change the function of each mouse button (when editing). *NEW*

[Keyboard shortcut: Amiga-;]

Keyboard Options — Displays the Keyboard Options window , which contains several parameters concerning using the keyboard when editing.

[Keyboard shortcut: Amiga-K]

Programmable Keys — Opens the Programmable Keys window , where you may edit the programmable keys (Shift-0-9).

[Keyboard shortcut: Amiga-Y]

Display Max Tracks — Selects the maximum number of tracks that can be

NEW displayed on-screen at once. The value that you select depends mostly on your eyesight ;-)

Palette Brings up the Palette Window, with which you can alter the screen's colors.

Equalizers Selects which "equalizers" to display. (They aren't actually equalizers, but this is their popular name). "Bar" toggles the colorful sprites, "Oscilloscope" toggles the signal displays at the bottom of the screen.

The equalizers are only active when there are no windows open on the screen.

Under the 68000 processor, the Oscilloscopes take up a lot of processor time (multi-tasking becomes poorer, disk activity is more audible etc.), so if you have a 68000 you may want to disable them permanently. Under all processors, they are disabled during disk activity.

Workbench Attempts to open / close the Workbench. Useful if you are low on memory.

H -> B Selects the name of the note between A# and C. In some countries it's H, in others it's B. When set, B's are displayed.

Play After Loading *NEW* When set, OctaMED automatically starts playing a song after it is loaded. Useful, for example, when listening to other people's songs.

Auto-Freeze Screen *NEW* When on, this automatically "freezes" the screen when the OctaMED screen is not the frontmost. This frees more processor time for multitasking. The screen can also be frozen using the Freeze Display gadget in the lower screen.

Load Settings *NEW* Opens a file requester to load a new settings file. The default name is "S:OctaMEDPro.config".

Save Settings Saves the current settings under the name "S:OctaMEDPro.config". OctaMED will attempt to load a file of this name on startup.

Save Settings As *NEW* Opens a file requester to save the settings under a non-default name.

For a list of the settings saved with the config file, see the

Settings File
.

1.12 OctaMED Windows

These are the windows included in OctaMED.

Synthetic Sound Editor
:

Synthetic Sound Volume

Synthetic Sound Stretch

Sample Editor
:

Change Volume

Change Pitch

Mix

Filter/Boost

Echo

Noise
NEW
Chord Creation
NEW
Pixel Density

Input Map Editor
:

Functions
Project menu:

New Project

Save Options
NEW
Save Timer

Print Options
Display menu:

```
          Sample List Editor

          MIDI Message Editor

           Notation Control
                 Song menu:

*NEW*
           Song Selector

          Playing Sequence

            Song Options

           Track Volumes
                 Block menu:


           Block Properties
                  *NEW*
              Block List

            Expand/Shrink

          Highlight Options
                 Instr menu:


          Instrument Parameters
                 Edit menu:


           Transpose

          Spread Notes

           Note Echo
                 MIDI menu:


          Input Channel
                 Settings menu:

*NEW*
            Mouse Options

          Keyboard Options

          Programmable Keys

               Palette
                 Main screen:

*NEW*
          Instrument Load
```

```
                Instrument Type
                       *NEW*
                 Section List
```

1.13 The New Project Window [Keyboard shortcut: Amiga-N]

```
                With this window you can discard the current project and begin a ↩
                   new one.
It is activated via the
                Project menu
                .

If the current project has been modified since last saving, the window's
title bar will display "WARNING: Current project modified!". This is the
only warning you are given: no confirmation requesters are displayed.

It contains three gadgets:

Clear All       Discards all samples and songs.

Clear Current   Clears the current song only. If
                Instr Menu
                /Automatic Flush
                is selected, a requester to flush unused instruments will
                also appear.

Cancel          Closes the window, canceling the operation.
```

1.14 The Save Options Window [Keyboard shortcut: Amiga-S]

```
                This window allows you to save the current project on to disk. It ↩
                   is opened
using the
                Project menu
                .

The text box at the top of the window is for typing in the filename of the
project. If the box is empty on opening the window, a
                file requester
                appears to select an appropriate filename. The file requester can ↩
                   also be
opened by clicking the small GetFile gadget to the left of the text box.

File Format             This radio button selects which file format to use
                        when saving. Options are:

   MMD2 (OctaMED V5)    This format is new to V5, and supports 1 - 64
   *NEW*                tracks and multiple playing sequences. If the song
                        requires any of these features, this gadget is
                        selected when the Save Options window is opened.

   MMD1 (OctaMED V3-V5) This is the V3-V5 format, so is (of course)
```

compatible with these versions. If MMD2 format is not required, this gadget is selected on opening the Save Options window.

Modules required MMD2 format can also be saved under MMD1. Blocks not containing 4 / 8 / 12 / 16 tracks will be saved perfectly with MMD1; and song sections will be converted into one long playing sequence, by ordering the sections in the arrangement defined by the section list.

MMD0 (MED & OctaMED) The pre-OctaMED V3 format, introduced in MED V2.10.

Note that some of V5's new features - default pitch, extended MIDI preset,
Instrument Parameters'
loop check box - are also saved with the
MMD1 and MMD0 formats.

Tracker Module — Sound/Noise/Protracker format, used to export modules to other "tracker" programs. However, since OctaMED supports many functions that trackers do not, some information may be lost, and this information appears in a requester before saving. (Player commands are converted to their Tracker equivalents).

Also note that the resulting file will be a 31-instrument module, incompatible with programs only supporting old 15-instrument modules.

The cycle gadget under the File Format gadget applies to multi-modules, and selects whether to save all the songs in the multi-module or only the currently selected song. By default, all songs are saved.

Save Secondary Data — Toggles whether to save "extra" information with the song: instrument names, line highlighting, block names, and the song name.

Create Icon — When selected, a Workbench icon file is saved with the song: a cassette image (designed by Izrael Similä of Iz Productions, thanks!).

Save Notation Data — When checked, saves some additional information used in the
notation editor
:

* The track gadgets' status
* Time and key signature
* The settings in the Instr. Notation window

Save Instruments (only applies to MMD2 and MMD1 modules) — Chooses whether the song should be saved together with its instruments. If not, only the instrument names are saved; when the song is reloaded, the instruments are loaded from your sample disks. This is done either by using the full path name of each instrument (see

Instr Menu
/Add Path), or more
commonly by way of the
sample list
.

To those upgrading from V4: MMD1 and MMD0 are equivalent to MOD1 and MOD0. MMD1 (+instr) can be selected by choosing MMD1 and switching Save Instruments on, and MMD1 (no inst) by switching Save Instruments off.

Compression *NEW* This cycle gadget selects the compression (if any) to use before saving the module.

No Compression — Does not compress the module (default).

PowerPacker Compression — Uses the popular powerpacker.library by Nico François to compress.

SFCD Compression — The Stephan Fuhrmann Compact Density algorithm is used for compression (requires lh.library, not included with OctaMED).

Calculate Size *NEW* Calculates the size in bytes of the project if it was saved using the current file format.

Save — Saves the song using the above parameters.

Exit — Closes the window.

** OctaMED can emulate the "automatic save" function of many wordprocessors using the
Save Timer window

1.15 The Save Timer Window *NEW*

This window, activated using the
Project menu
, emulates the "automatic
save" function of many wordprocessors. You can automatically open the

Save Options window
periodically.

The window contains a single integer gadget, whose value is the time in minutes between subsequent openings of the Save Options window. A value of 0 turns this function off, and is the default.

1.16 The Print Options Window [Keyboard shortcut: Amiga-P]

This window, opened using the
Project menu

, allows printing of the song and
various song information. You can print the song as text (the format of the

Tracker editor
) or as graphics (as in the
notation editor
).

The gadgets are as follows:

Output File — Consists of a text box and a GetFile gadget to the left of the text box. With these you may redirect output to a file instead of a printer. You can only redirect the header and text output, not graphics.

Start Block / End Block — These numerical boxes set the starting and ending block of the printout; you may type in any valid block numbers.

All Blocks — Sets the boxes to the first and last block of the song.

Current Block — Sets the boxes to the current block number.

Print Header — Selects whether to print the header before the song contents. The header consists of a list of instruments and their parameters, the default tempo, play transpose, track volumes and the playing sequence(s). It is printed as ordinary text.

Form Feed — Sends a form feed after printing each block.

The remaining cycle gadget selects whether to print as graphics (default), text, or not to print the blocks at all (i.e. only the header, if Print Header is checked).

Any Preferences-compatible printer should work in graphics mode, and the printout's appearance can be changed using Commodore's Preferences program. In text mode, highlighted lines are printed in bold text.

"Print" prints using the specified options, and "Exit" closes the window.

1.17 The Synthetic Sound Editor [Keyboard shortcut: Left Alt-Y]

Synthetic sounds (or "synthsounds") are made from simple waveforms ↩
, which
can be joined together and have their volume and pitch altered by using a simple "programming language". This window contains the functions to construct these sounds, and is opened either by using the
Display menu
or
by clicking the "Edit SynthS" gadget on the
upper screen
.

The main advantage of synthsounds is that they take up far less memory than their sampled counterparts, so often it's worth trying to create a

synthetic version of a sampled instrument before devoting yourself to one or the other. However, this doesn't mean synthsounds are a poor substitute, especially if you enjoy the sounds produced by analogue synthesizers and the good old Commodore 64! Synthsounds are also particularly useful when composing in certain styles of music, Acid House and Rave being notable examples.

To use this window's functions, the current instrument must be a synthsound (selected either by using the
Instrument Type window
, or *NEW* by choosing
"New Synthsound" from the synth editor's Project menu).

When editing is on, the keyboard is used to program the synthsound (see the

Synthetic Sound Programming Language
), but when off you may play the current sound using the keyboard, like ordinary samples.

Waveform editing

There are two waveform displays: the left one is the "master waveform display" and the right one is for intermediate editing (it also serves as a copy buffer). Either of the waveforms can be activated by clicking on them, and the current waveform is recessed (it seems to "go into" the screen). Initially the right display is active.

There are gadgets between the displays that are used for transferring waveforms between displays:

Copy — Copies one waveform to the other (in the arrow direction).

Exchanges — Exchanges both waveforms.

Mix — Mixes the left waveform to the right waveform.

Add — Like Mix, but it doesn't produce any average between the waveforms.

UNDO — "Undoes" (reverses the effects of) the last editing operation.

Range All — Selects the whole of the current waveform.

Freehand drawing

One way to create waveforms is to draw them from scratch, by dragging the left mouse button along a waveform display.

There are four drawing modes, selectable by toggling the "Draw Mode" cycle gadgets.

Pixel — Draws in pixels (default).

Line — Used for drawing straight lines.

Mix — Mixes the drawn lines / pixels with the data already present.

Direct Draws without mixing (default).

(The upper cycle gadget also selects Range, with which you can select a part of the waveform: see below).

The Preset and Project menus

Instead of drawing freehand (which can be inaccurate), some often-needed basic waveforms are available from the Presets menu. Selecting a waveform inserts it into the active waveform display. [Shortcuts: Amiga-1-6]

Also in this menu is "Clear Wave", which clears the active display. [Keyboard shortcut: Amiga-0]

The following items are included in the Project menu:

New Synthsound Clears the whole synthsound (take care...). Also forces the current instrument to be a synthsound.

[Keyboard shortcut: Amiga-N]

Exit Synth Editor Closes the window.

[Keyboard shortcut: Amiga-E]

Waveform length

Each synthetic waveform can be 2 - 128 bytes long (although the number must be even). The shorter the waveform, the higher the pitch (the pitch also depends on the waveform itself). Usually, to make the pitches compatible with other instruments, you should use length 2, 4, 8, 16, 32, 64 or 128. The length can be changed by using the "Length" slider.

Multiple waveforms

Up to 64 waveforms can be defined for one synthsound. The gadgets to the right of "Waveform:" are: the current waveform integer gadget (you can type in the number of the waveform), the current waveform number in hex and the last waveform number in decimal, and arrow gadgets that increase / decrease the current waveform number [keyboard shortcuts: Alt - <left> / <right>]. *NEW* Shift-clicking these arrow gadgets selects the first / last waveform.

Relevant gadgets are as follows:

New Waveform Adds a new waveform after the last waveform.

New Here Inserts a new waveform at the current waveform position.

Delete Last Deletes the last waveform.

Delete Current Deletes the current waveform.

Range operations

Some basic operations exist that apply to the current range. A range is marked by cycling the upper Draw Mode cycle gadget to "Range", then dragging the left mouse button over a waveform display. The whole waveform can be selected by clicking "Range All". The "Range" / "End" gadgets at the lower-right of the window can be used to make small corrections to the range area.

A range of one byte in length is displayed as a single vertical white line. This is the cursor; some editing operations need it. It may be set either by clicking the left mouse button on a waveform display (with "Range" cycled), or by using the "Cursor" gadgets: from left to right, they are "cursor to start", "cursor to middle of waveform", and "cursor to end".

The range gadgets are as follows:

Cut — (works only on left waveform display) Moves the range contents to the right display, and clears the range.

Copy — (only left display) Copies the range to the right display.

Paste — Copies right display to the cursor position on the left display.

Clear — Clears the range.

Double — "Doubles" the range, making the pitch one octave higher.

Reverse — Reverses the range.

<< / >> — Shifts the ranged data to the left or right.

The Waveform menu

Change Volume — Opens the Synthsound Volume window.

[Keyboard shortcut: Amiga-V]

Stretch — Opens the Synthsound Stretch window.

[Keyboard shortcut: Amiga-S]

Start / Do Transformation — Allows you to change one waveform to another smoothly, by creating the waveforms between them.

For example, allocate 9 new waveforms by clicking "New Waveform" 9 times. Move to waveform 0 and select a pulse waveform, and select "Start Transformation". Now move to waveform 9 and select a sine waveform. Select "Do Transformation" to carry out the operation, and if you view waveforms 1 - 8 you'll notice the smooth

transition between the pulse and sine wave.

[Keyboard shortcuts: Amiga-T and Amiga-D]

(Programming language documented in
Synthetic Sound Programming Language
)

1.18 The Synthsound Volume Window [Keyboard shortcut: Amiga-V]

This allows you to increase / decrease the volume of a selected ↩ range, in
the
synthetic sound editor
. It is brought up by selecting "Change Volume"
from the editor's Waveform menu.

The integer gadget contains the percentage of volume change required. For example, 50 would halve the volume, and 200 would double the volume. Pressing RETURN while the gadget is active executes the function.

The OK gadget carries out the operation, the Cancel gadget aborts it.

1.19 The Synthsound Stretch Window [Keyboard shortcut: Amiga-S]

This allows you to stretch a point on the waveform towards another ↩ point,
in the
synthetic sound editor
. It is activated using the editor's Waveform
menu.

For example: select a sine wave. Then position the cursor at the middle of the waveform. Now open this window and type the amount of movement into the integer gadget (e.g. 32).

Typing in a negative number stretches the point to the left. Pressing RETURN while the gadget is active executes the function.

The OK gadget carries out the operation, the Cancel gadget aborts it.

1.20 The Synthetic Sound Programming Language

Note: Please read this section carefully before experimenting, ↩ because you
can lock your machine up with the synthsound programming language (as with any other language).

The programming language is used for controling the volume, pitch, and order of waveforms in a synthsound. It consists of simple keywords, of

which some have an argument. For a description of these keywords, see

Synthetic Sound Language Keywords
.

The programming is done using two lists of commands/numbers. These lists are displayed in a small window below the right waveform display in the

synthetic sound editor
. The two leftmost columns display the line numbers in decimal and hex. The middle column contains the volume sequence, while the rightmost is the waveform/pitch sequence. (The numbers in the volume sequence are preceded by an "ó").

```
       volume ctrl seq
          |
line      |    waveform ctrl seq
  |       |    |
  00 00  ó40   00
  01 01  END  END
```

These lists are both a maximum of 127 ($7F) entries long. The list is always automatically terminated with the "END" instruction. You can scroll the list with the cursor up/down keys, and use the F6-F10 keys as in the

Tracker editor
.

The cursor can be moved horizontally using the cursor left/right keys. There are six possible horizontal cursor locations (3 for each list). When entering commands, the cursor should be on the leftmost position of the appropriate list. Values are entered by positioning the cursor over the number to be changed and typing in a new value. Commands and numbers are entered via the keyboard, and editing must be on before either list can be changed.

You may insert entries to the list with the Return key (or by clicking the "Insert" gadget), and delete using the Del key (or by clicking "Delete"). JMP commands are renumbered when entries are inserted or deleted.

NEW With the release of V5, editing has been tidied up somewhat. The cursor no longer moves down beyond END; and inserting any command except HLT and RES (which don’t take parameters) also inserts a new 00 value.

The "Transition" gadget creates transitions. For example, consider this waveform sequence:

```
line
 00   00
 01   0F
 02  END
```

If you position the cursor at line 01, making sure that editing is on, clicking "Transformation" creates all the numbers between 00 and 0F (01, 02, 03, 04 ... 0E). This saves a lot of typing!

* ALL NUMBERS IN THE SEQUENCE LISTS ARE

```
                HEXADECIMAL
                 *
```

First, let's examine some example sequences.

This is a volume sequence:

```
        00  40 <= set initial volume to 64 (hex $40)
        01 CHD <= command, that means "Set volume change down speed"
        02  03 <= argument (speed = 3)
        03 END
```

Here's another:

```
        00  00 <= initial volume = 0
        01 CHU <= Command: Set volume change up
        02  07 <= speed = 7
        03 WAI <= Command: Wait
        04  10 <= wait 10 pulses
        05 CHU <= Set volume change up
        06  00 <= speed = 0 -> stop changing volume
        07 WAI <= Wait
        08  70 <= 70 pulses
        09 CHD <= Cmd: Set volume change down
        0A  01 <= speed = 1 (slow)
        0B END
```

A third:

```
        00  40 <= vol = $40
        01  30 <= vol = $30 (without a command, the values are volume
        02  20 <= vol = $20  changes)
        03 END
```

And finally, a fourth:

```
        00  40    <= vol = $40
        01 CHD <+ <= change down speed..
        02  01  | <= ..= 1
        03 WAI  | <= Wait..
        04  20  | <= ..20
        05 CHU  | <= change up
        06  01  | <= ..1
        07 WAI  | <= Wait..
        08  20  | <= ..20 again
        09 JMP  | <= Jump (= goto)
        0A  01 -+ <= to line number 01
        0B END
```

Now for some waveform/pitch sequences. The waveform/pitch sequence is the "master sequence" while the volume sequence is a kind of "slave sequence".

First: (the simplest case)

```
        00  00 <= set waveform #00
        01 END
```

A bit more complex:

```
        00 VBS <= set vibrato speed
        01  40 <= speed = $40
        02 VBD <= set vibrato depth
        03  02 <= depth = 2
        04  00 <= waveform #00
        05 END

And very complex:
        00 ARP <= start arpeggio sequence
        01  00 \
        02  03  arpeggio values 0, 3, 7 (minor chord)
        03  07 /
        04 ARE <= end arpeggio sequence
        05 VBD <= vibrato depth
        06  06 <= 6
        07 VBS <= vibrato speed
        08  40 <= $40
        09  00 <= set waveform #0
        0A  01 <= set waveforms 01 - 0A (one timing pulse/waveform)
        0B  02    | |
        0C  03   \   /
        0D  04    \_/
        0E  05
        0F  06
        10  07
        11  08
        12  09
        13  0A and back to #01...
        14  08
        15  07
        16  06
        17  05
        18  04
        19  03
        1A  02
        1B  01
        1C JMP <= jump
        1D  09 <= to position 09 (restart waveform changing)
        1E END


About timing
------------
After executing most commands, in both sequence lists, OctaMED immediately
executes the next command. However, with some commands OctaMED waits for
the next timing pulse before executing the next command. Without these few
commands, OctaMED would spend all its time executing the sequence lists
(and hang up). You should therefore ensure that all loops contain one, and
they are WAI (Wait), vol chg (a plain number in the volume list) and set
waveform (a plain number in the pitch/waveform list).

For example, the following loops would hang up your computer:

        00 JMP          00  CHU <-+ command CHU doesn't wait
        01  00          01   02   |
        ...             02  JMP   |
                        03   00 --+
```

While the following would not:

```
00  20          00  WAI
01 JMP          01   02
02  00          02  JMP
                03   00
```

Execution speed

The synthsound handling routine is called once every timing pulse, so for every note played handling is done the number of times specified by the secondary tempo. However, the sequence list entries can be executed less frequently than that, and the number of timing pulses between the execution of each entry is known as the "execution speed".

The execution speed of each list can be set independently, by using the arrow gadgets to the left of the sequence list. Wave and Volume set the waveform/pitch and volume sequences respectively, and can have values of 1-15 (F hex). The execution speed can also be changed during execution, by using the SPD command.

Synthsound-handling player commands

With synthsounds, command E in songs triggers a jump in the waveform/pitch sequence. (See
Commands A - F
)

For example, if you wanted to decrease the pitch of the sound after a certain point, your waveform/pitch sequence could look like this:

```
00  VBS
01   40
02  VBD
03   06
04   00 ;play waveform 00
05  HLT
06  CHD ;pitch changing entry point
07   02
08  END
```

Now you could compose a track like this:

```
C-2 3000  ;this is the previous synthsound
--- 0000
--- 0000
--- 0E06  ;cause a jump to position 06 (pitch starts to slide down)
--- 0000
...
```

Using the JVS command, you can make command E affect the volume sequence as well.

Hold and Decay (see
Instrument Parameters Window

```
                ) work well with
synthsounds too. The decay value with synthsounds, however, triggers a jump
in the volume sequence list. At the point when decay normally starts,
execution will jump to the entry in the vol seq list specified by the decay
value. This means that you can handle the decay in any way you like. You
can also make it affect the waveform/pitch seq using the JWS command.

Example volume sequence list:

        00  40  ;volume
        01 HLT  ;end
        02 CHD  ;decay handling (entry point) -> cause decay
        03  03
        04 END

The decay value for this synthsound should be 2. The decay values are saved
and loaded with synthetic sounds.

Hybrid Sounds
-------------
Hybrid sounds are much like synthsounds, except that instead of waveform
pieces a normal sample is used. All commands of the synthsound handling
programming language can be used with hybrid sounds, except the "set
waveform" command: since there's only a single waveform, it neither works
nor is necessary.

Also, volume-changing commands (A, C, D, 5, 6, 1A, and 1B) don't work with
hybrid sounds. (See
                Player Commands
                )

And finally...
--------------
Don't worry if you don't understand synthsounds at first glance! The
language used in this topic has been necessarily technical, but read it
through again... :)

Anyway, you don't need to learn all this information to use synthsounds,
only to design them.
```

1.21 The Synthetic Sound Language Keywords

```
VOLUME SEQUENCE LIST COMMANDS
=============================

1.      Set volume
        Command: ---
        Keyboard: --- (key needed to enter the command)

        This is the default command (no command identifier). It sets the
        absolute volume of the synthsound. It should be 00 - 40. Note that
        the relative track volumes are not used in synthsounds (mostly for
        performance reasons).

        Example:
```

```
00  30 ;volume = $30
01  10 ;volume = $10
...
```

2. End sequence
Command: END
Keyboard: ---

This command terminates the volume sequence list. It's always there and automatically inserted. You can't insert commands past this one.

3. Set volume change down speed
Command: CHD
Keyboard: D

This command sets the speed at which the volume is decreased each timing pulse. The volume starts changing automatically after this command. To stop automatic volume sliding, issue this command with speed 00.

Example:

```
00  CHD
01   05 ;speed = 5
...
10  CHD
11   00 ;speed = 0 -> stop sliding
```

4. Set volume change up speed
Command: CHU
Keyboard: U

This command is like CHD, except it sets the volume change up.

5. Wait
Command: WAI
Keyboard: W

This command waits for a specified amount of timing pulses (pause).

Example:

```
03  WAI
04   10 ;wait for 16 ($10) pulses to occur
```

6. Jump
Command: JMP
Keyboard: J

Causes an immediate jump to another volume list position.

Example:

```
05  JMP
06   0A ;jump forward to line 0A
```

7. Jump waveform sequence
Command: JWS
Keyboard: Shift-J

This command causes a jump in the waveform sequence. This can be used, for example, to trigger a pitch change at the end of the vol seq list. Note that this DOESN'T cause a jump TO the waveform seq.

Example:
```
04  JWS
05   0F ;Causes a jump to line 0F in the waveform sequence list
```

8. Halt
Command: HLT
Keyboard: H

This has the same effect as command END (halt execution), but it can be inserted in the middle of the sequence list.

Example:
```
03  HLT
04   04 ;other code (can be accessed with JMP instruction, for
...      example)
```

9. Set speed
Command: SPD
Keyboard: S

Sets the execution speed.

Example:
```
0A  SPD
0B   01 ;speed = 1 (fastest)
...
```

10. One-shot envelope
Command: EN1
Keyboard: E

This command allows you to draw the shape of the envelope with the mouse. When the end of the envelope is reached, nothing occurs.
```
02   40
03  EN1
04   05
```
Waveform 05 is used as an envelope. Note that the envelope execution starts on the next interrupt, so the volume is initialized to $40. The envelope waveform must always be 128 bytes long!!

11. Looping envelope
Command: EN2
Keyboard: Shift-E

This works like command EN1, except that when the end is reached, execution will start again from the beginning.

WAVEFORM/PITCH SEQUENCE LIST COMMANDS
==========

1. Set waveform
   Command: ---
   Keyboard: ---

   This command is used to indicate the waveform number (starting from 00). After this instruction, the execution stops until the next timing pulse occurs. Don't use waveform numbers that are higher than the actual number of the last waveform.

   Example:
   ```
   00  00 ;waveform 00
   01  01 ;waveform 01
   ...
   ```

2. End sequence
   Command: END
   Keyboard: ---

   This command terminates the volume sequence list. It's always there and automatically inserted. You can't insert commands past this one.

3. Set pitch change down speed
   Command: CHD
   Keyboard: D

   This command sets the sliding speed for sliding the pitch down. The sliding automatically starts after this command and stops, when the speed is set to zero.

   Example:
   ```
   00 CHD
   01  03 ;set speed to 3
   ...
   ```

4. Set pitch change up speed
   Command: CHU
   Keyboard: U

   Like the previous command, but slides the pitch up.

5. Wait
   Command: WAI
   Keyboard: W

   This command waits for a specified amount of timing pulses (pause).

   Example:
   ```
   03  WAI
   04   02 ;wait for 2 pulses to occur
   ```

6. Jump
   Command: JMP
   Keyboard: J

   Causes an immediate jump to another waveform/pitch list position.

```
        Example:
        05  JMP
        06   0A ;jump forward to line 0A
```

7. Jump volume sequence
   Command: JVS
   Keyboard: Shift-J

   This command causes a jump to happen in the volume sequence. Can be used e.g. for triggering volume changes after some waveform event.

```
   Example:
   09  JVS
   0A   00 ;start volume sequence from the beginning
```

8. Halt
   Command: HLT
   Keyboard: H

   This has the same effect as command END (halt execution), but it can be inserted in the middle of the sequence list.

```
   Example:
   03  HLT
   04   04 ;some other code (can be accessed with JMP instruction, for
   ...      example)
```

9. Set speed
   Command: SPD
   Keyboard: S

   Sets the execution speed.

```
   Example:
   0A  SPD
   0B   01 ;speed = 1 (fastest)
   ...
```

10. Begin arpeggio definition
    Command: ARP
    Keyboard: A

    This command starts the arpeggio sequence. The subsequent values are the arpeggio offsets from the base note. The arpeggio sequence is terminated with the ARE command. The arpeggio starts automatically after the sequence is defined.

```
    Example:
    03  ARP ;start arpeggio
    04   00 ;offset values
    05   04
    06   07
    07   0A
    08  ARE ;end arpeggio definition
```

11. End arpeggio definition

```
        Command: ARE
        Keyboard: E

        Ends an arpeggio definition. See above.

12.     Set vibrato depth
        Command: VBD
        Keyboard: V

        This command is used to set the vibrato depth (00 - 7F).

        Example:
        02  VBD
        03   04 ;set depth to 4

13.     Set vibrato speed
        Command: VBS
        Keyboard: Shift-V

        This command sets the vibrato speed (00 - 7F). Both speed and depth
        must be non-zero for vibrato to occur.

        Example:
        02  VBD
        03   04 ;depth = 4
        04  VBS
        05   30 ;speed = 30

14.     Reset pitch
        Command: RES
        Keyboard: R

        This command resets the pitch of the note to its initial pitch.

15.     Set vibrato waveform
        Command: VWF
        Keyboard: Shift-W

        Sets the vibrato waveform. The argument is the number of the
        waveform. The waveform should always be 32 bytes long!! Note that
        it's actually played reversed (use the Reverse gadget to reverse
        it). By default, a sine wave is used.

        Example:
        00  VBD
        01   06
        02  VBS
        03   40
        04  VWF
        05   04 ;use waveform number 04 as vibrato waveform
```

1.22 The Sample Editor [Keyboard shortcut: Left Alt-E]

```
        This window allows you to edit and digitize samples. It is ↩
           activated either
```

by using the
Display menu
or by clicking "Edit Sample" on the
upper screen
.

Displayed in the window is either the current sample's waveform, or the words "No sample loaded" if the current instrument slot is empty.

The scroll bar below the waveform represents the size of the display relative to the size of the whole sample. It also allows you to scroll around the sample (after zooming in, see later) by dragging it. Scrolling can also be done using the cursor left / right keys.

Many operations act on a specific range, which is set by dragging the left mouse button along the waveform. After selecting the range, you may re-adjust the start or end positions by holding down the Shift key while dragging the left mouse button.

The gadgets above the waveform are as follows:

Display	This display box contains the number of bytes currently being displayed in the waveform. It changes when zooming in or out (see later).
Buffsize	The size of the current sample (waveform buffer). Typing in a new size brings up a requester, asking whether to clear the sample or retain the sample already in memory. One use of retaining the sample is adding extra "workspace" to the end of a sample, which is useful in some editing operations (e.g. echoing). By choosing "Clear" you may create a new sample, and this is often the first step when digitizing (see later). There need not be a sample in memory in order to enter a new size. The maximum buffer size is 131072.
Range Start / End	These gadgets show the actual byte positions of the start and end of the range, and can be changed by entering a new value into them.

The following gadgets lie below the waveform:

Play Display	Plays the current display using the current period value (see "Period" below).
Zoom In / Out	Zooms in / out. Important for accurate editing.
Show All	Restores the whole waveform to view after zooming.
Range Display	Ranges the whole display.
Sample< / >Buffer	Copies the copy buffer to the sample, and the sample to the copy buffer. Can be used to implement a simple "undo". Before trying out a function, a snapshot of the sample

can be made with "Sample<". If you're not satisfied with the outcome of the function, the sample can be restored with ">Buffer".

Monitor — Opens a window that displays the real-time input waveform from a sampler (connected to the parallel port). The rest of the program is disabled, i.e. no other functions can be selected. Closing the window stops monitoring.

Digitize — Starts digitizing (also called "sampling"). The screen blanks, and multitasking is disabled. The sampling stops when the buffer is full, but it can be interrupted with the right mouse button.

Pitch — The numerical box displays the current sampling / playing period, and the raised box shows the equivalent note to the period value. The default is 428 (note C-2), but this can be changed by either entering a value into the gadget, or holding the left mouse button on the note box and entering a new note using the keyboard.

Freehand — When on, you may edit the waveform with the mouse. The maximum display size is 628 bytes, but you may zoom closer if you wish. In Freehand mode, the Pixel display mode is automatically selected.

Loop — A sample having a loop means that a note you play with the sample is sustained until it is stopped. This is due to a particular section of the sample being continually repeated (or "looped"), and the boundaries of this section are defined by the two "loop pointers".

These pointers appear as dotted lines over the waveform, and as small triangles in the rectangle immediately below the waveform. They mark the start and end of the looped section.

The "Loop" check box is a duplicate of the "Loop On" gadget in the
Instrument Parameters window
. Selecting this gadget
activates the loop.

Loop Point — The loop pointers can be moved in three different ways:

* Typing in the Repeat and/or RepLen value in the

Instrument Parameters window
* Dragging the small triangles across the waveform

* Using the Loop Point gadgets

The < and > gadgets move a loop pointer two bytes to the left or right.

<0 and 0> move a loop pointer to the left or right until a zero is found. For a decent-sounding loop, it ideally needs to start and end at the same value, which can often be zero (i.e. no amplitude). So these

gadgets are useful in finding good loop points.

The cycle gadget selects whether the < > <0 0> gadgets act on the loop start (default) or loop end pointer.

Bear in mind that zooming in allows far more accurate loop positioning.

The following gadgets act on the currently selected range (see above):

Show	Magnifies the range to fill the whole display.
Play	Plays the range at the current pitch.
Cut	Deletes the range and moves it to the copy buffer. [Keyboard shortcut: Amiga-X]
Erase	Deletes the range (but doesn't move it to the copy buffer).
Clear	Clears the range.
Copy	Copies the range to the copy buffer. [Keyboard shortcut: Amiga-C]
Paste	Inserts the copy buffer's contents at the start of the range. The sample size will increase by the number of bytes inserted. [Keyboard shortcut: Amiga-V]
Reverse	Reverses the range, useful for interpreting hidden messages in a few rock songs ;)

The menus attached to this window are as follows:

Project

Flush Sample	Removes the current instrument from memory.
Load Sample	Opens a file requester to load a sample. [Keyboard shortcut: Amiga-L]
Save Sample As	Opens a file requester to save an IFF sample. Note that the loop values are also saved with IFF samples. [Keyboard shortcut: Amiga-S]
Exit Sample Editor	Closes the sample editor window.

[Keyboard shortcut: Amiga-E]

Edit

With this menu you may edit the sample.

The Cut, Copy, Paste, Erase, Clear and Reverse items have equivalent functions to the respective Range gadgets.

Invert *NEW*
Inverts the range (turns it upside-down). This can be useful when trying to find a smooth loop or a smooth join between two waveforms (freehand mode also helps this).

[Keyboard shortcut: Amiga-I]

Chop *NEW*
Deletes the non-ranged parts of the sample. Only the part defined by the range is left.

[Keyboard shortcut: Amiga-Z]

Remove Unused Space *NEW*
Deletes empty space (i.e. of zero volume) on either side of the waveform. This both saves memory and keeps the timing in songs precise.

[Keyboard shortcut: Amiga-R]

Copy to Synth Editor
Transfers the current range to the synthetic sound editor, thus allowing you to create a less memory-consuming instrument. The synth editor can only handle waveforms of 128 bytes maxmimum, so if the range is longer than that, only the first 128 bytes marked are copied. The range is copied to the right-hand waveform display. If you want the new synthetic instrument to replace the sample in memory, you need to make the current instrument synthetic.

[Keyboard shortcut: Amiga-2]

Play Buffer Contents *NEW*
Plays the contents of the copy buffer at the current pitch.

[Keyboard shortcut: Amiga-B]

Discard Copy Buffer
Discards and frees the memory occupied by the copy buffer.

[Keyboard shortcut: Amiga-U]

Effects

This menu adds special effects to the sample.

Change Volume
Brings up the Change Volume window.

```
                [ Keyboard shortcut: Amiga-O ]

Change Pitch    Brings up the
                Change Pitch window
                .

                [ Keyboard shortcut: Amiga-P ]

Mix             Brings up the
                Mix window
                .

                [ Keyboard shortcut: Amiga-M ]

Filter/Boost    Brings up the
                Filter/Boost window
                .

                [ Keyboard shortcut: Amiga-F ]

Echo            Brings up the
                Echo window
                .

                [ Keyboard shortcut: Amiga-K ]

Create Noise    Brings up the
                Noise window
                .

                [ Keyboard shortcut: Amiga-N ]

Create Chord    Brings up the
                Chord Creation window
                .
*NEW*
                [ Keyboard shortcut: Amiga-H ]
```

Note that all effects aside from Change Pitch, Mix and Create Chord affect the current RANGE. So if you wish these effects to apply to the whole sample, use the Range Display gadget.

Also, shift-clicking any of the action buttons (i.e. those which perform a function) in these windows executes the function then closes the window.

Settings

```
Display         "Line" selects the normal line display mode, but when
                "Pixel" is turned on, the sample is displayed as pixels
                instead of lines. *NEW* "Pixel Density" activates the

                Pixel Density window
                 with which you can choose the density
                of the pixels in "Pixel" mode. [ Shortcut: Amiga-D ]
```

Sampler Voice Monitor *NEW* When selected, you can hear the sound you are sampling during digitizing. Turning this off may marginally enhance the digitizing quality on slower machines (those using a 68000 processor).

1.23 The Change Volume Window [Keyboard shortcut: Amiga-O]

This window allows you to change the volume of the current range, and is opened using the sample editor 's Effects menu.

The sliders select the starting and ending volume change, and both are percentages of the original waveform. For example, setting the start volume to 150 % and the end volume to 75 % fades downwards from one-and-a-half times the original volume to three-quarters of the original volume. Each slider can select a value of 0 - 500 %.

Clicking CHANGE VOLUME changes the volume using the current slider values.

NEW There are also some commonly-used presets below the CHANGE VOLUME gadget. "Fade In" changes from 0 % to 100 %, "Fade Out" from 100 % to 0 %, "Halve" 50 % - 50 %, and "Double" 200 % - 200 %. Clicking any of these gadgets sets the sliders to the values they represent, then changes the volume.

Fade In / Out are useful partly in eliminating the "click" that you sometimes hear at the very start and end of a sample. To do this, range a small piece of waveform at the start or end of the sample, and click Fade In for the start or Fade Out for the end.

Normally, if the volume is increased too much, the normal waveform limits are exceeded and distortion (or "clipping") will occur. *NEW* If the "Don't Clip" gadget is switched on, however, the waveform limits will not be exceeded: the volume won't be changed at all if clipping will occur.

The "Exit" gadget closes the window.

1.24 The Change Pitch Window [Keyboard shortcut: Amiga-P]

This window lets you change the pitch of (or "retune") the sample. The sample's size will also change: it will decrease if the pitch is made higher, and increase if the pitch is lowered. (The window is opened by using the sample editor 's Effects menu).

For example, if you'd like to retune the current sample to play the note G-2 when you press the C-2 key:

1. Set the source note to C-2 by holding the left mouse button on the "Source" note box and pressing the C-2 key;

2. Set the destination note to G-2 in the same way;

3. Click "Change Pitch". The sample is retuned, and its size in this case will decrease by roughly two-thirds.

Other gadgets are:

Octave Up / Down	Retunes the sample one octave up / down, halving / doubling the sample's size. The "Period" gadgets are changed to the values the operation represents.
Cancel Finetune *NEW*	Retunes the sample so that the Finetune value in the Instrument Parameters window no longer applies. So if the finetune value was -4, the sample would be retuned 4 steps down and the instrument's finetune would be set to zero.
Anti-Alias *NEW*	When on, does some anti-aliasing when retuning. This means that noise is reduced, and is the default.
Exit	Closes the window.

1.25 The Mix Window [Keyboard shortcut: Amiga-M]

This window contains the gadgets required to mix two samples ↩ together, and is activated using the Effects menu in the sample editor. The sample placed in the copy buffer (using the >Buffer gadget in the sample editor) will be mixed with the current sample.

NEW The two sliders control the volumes of the two waveforms to be mixed. To understand them fully, you need to bear in mind that mixing is achieved by ADDING the two samples together. So if the samples were both mixed at 100 % volume, the resulting mixed sample would be 200 % (double) in volume.

For this reason, the default for each sample is 50 %, giving a 100 % (normal volume) mixed sample. Each slider's value may be 0 - 100 %.

The volume of the sample in the copy buffer is altered using the "Dest. Level" slider, and that of the current sample using the "Source Level" slider.

The "Mix" gadget mixes the sample, and "Exit" closes the window.

1.26 The Filter/Boost Window [Keyboard shortcut: Amiga-F]

This window includes a function to filter the current range, reducing noise, and to boost the current range, making it sound brighter and more audible. The window is brought up using the sample editor 's Effects menu.

Filtering is done by calculating the average of each individual value in the sample and the values on either side of it. Boosting employs an opposite process.

There are two sliders, both of which can have a value of 1 - 128:

Averaging — The strength of the filter/boost (technical note: the proportions of each individual value compared to the values on either side of it). The higher the value, the greater the strength. The default is 16.

Distance — The distance between the averaged values. In practical terms, this slider affects the sound in an odd way! (It's best to experiment with different values). For a normal filter/boost, set this to 1 (the default).

The Filter gadget filters, Boost gadget boosts, and Exit closes the window.

1.27 The Echo Window [Keyboard shortcut: Amiga-K]

With this window, interesting echo effects can be produced. It is revealed using the sample editor 's Effects menu. The echo function affects the current range.

Before echoing, you usually need to add some extra space to the end of the sample, by typing a new value into Buffsize (in the sample editor) then choosing "Retain" in the requester. You need to range both the waveform to be echoed and the blank space that the echo is to affect.

There are three integer gadgets:

Echo Rate — The distance, in bytes, between two echoes. A very low rate can make a speech sample sound like a robot :-D

Volume Decrease — Specifies the rate of volume decrease in the echo. The lower the value, the lower the rate, but a value of zero spreads the volume evenly throughout the range.

Number of Echoes — The total number of echoes produced, usually quite low (1 - 10).

The best way to learn this feature is through experimentation.

The "Do Echo" gadget executes the function, and "Exit" closes the window.

1.28 The Noise Window [Keyboard shortcut: Amiga-N]

This window is opened using the
sample editor
's Effects menu.

The fairly unique feature in the window allows you to add noise to the current range. It may seem useless at first glance, but with it you can easily create effects such as wind and sea sounds, and it can be a source of more complex instruments when used together with other effects. So it's possible to create good-sounding instruments even without using a sampler!

The slider sets the noise strength (1 - 128), which is really the volume of the produced noise. The "Noise" gadget creates noise, and "Exit" closes the window.

1.29 The Chord Creation Window *NEW* [Keyboard shortcut: Amiga-H]

With this window you can create chords of two to four notes from ↩
the
current sample. The window is brought up using the
sample editor
's Effects
menu.

The window consists of four pitch gadgets, whose contents can be changed by holding down the left mouse button and pressing a note on the keyboard. You may also clear the note by pressing Return.

The basenote is the note to which the chord notes relate. In practical terms you can think of it as the "bass note". The other gadgets are the other notes in the chord, of which some may be blank if desired.

Note that you are not restricted to the normal three-octave range of a sample: you may use pitches over the full 10.5-octave range. Also note that higher notes are shorter in length than lower notes, so the notes in the chord will not end simultaneously.

"Create Chord" creates the chord and stores it in the current sample.

"Exit" closes the window.

1.30 The Pixel Density Window *NEW* [Keyboard shortcut: Amiga-D]

The slider in this window sets the density of the pixels (1 - 50) ↩
used when
drawing the waveform in "Pixel" mode (see the

Sample Editor
, Settings
menu).

The slider value is in reality the number of pixels displayed in every horizontal pixel position.

The "Exit" gadget closes the window.

1.31 The Sample List Editor [Keyboard shortcut: Amiga-L]

Because many people have hundreds or thousands of samples, spread ↩ over many
different disks and directories, the samples need to be organized. This window provides the necessary functions for organising and storing a list of all your samples. (It is opened using the
Display menu
).

Basically, a list is created by clicking "Add Dir..." and choosing a directory containing samples from the
file requester
. The directory and its filenames are then added to the list, and this can be repeated for all your sample directories / disks. You may view a directory's filenames by clicking the required directory name in the "Directories" list.

The list is saved using "Save List...", and the filename is "MED_paths". On startup, OctaMED looks for the MED_paths file in the current directory and in the S: directory. The default save path is S:.

The gadgets in this window are as follows:

Add — Adds the current instrument to the filenames list (it will be inserted in alphabetical order). Note that the sample's loop, tuning, MIDI, and relative volume values will also be stored, as well as its default pitch.

Remove — Removes the instrument selected in the sample list (i.e. click on a filename and press "Remove").

Save Ins — Saves the current instrument to the currently selected directory (stores it on disk as well as in the list).

Del Ins — Like "Remove", but also deletes the instrument from disk. These last two options remove the need to use a file requester to save or delete instruments in the sample list.

Add Dir — Opens a
file requester
to add a directory to the list.
NEW A requester will also appear, inquiring whether you wish to add the directory after the currently selected directory or to the end of the list.

Remove Dir Removes the current directory from the list.

Save List Opens a
file requester
 to save the list to disk. Note that
on startup OctaMED looks for the MED_paths file in the
current directory and the S: directory, so be sure to
either save it in the S: directory or in the same directory
as the OctaMED program. It is usually best to choose the S:
directory, as then it doesn't matter what the current
directory is when starting OctaMED.

Load Inst Loads the selected sample list instrument to the current
sample slot. (An easier method of loading instruments in
the sample list is found in the
Load Instrument Window
).

Save All Insts Saves all instruments in the song to the current directory.
This can be handy for extracting (or "ripping") all the
samples from other people's songs, for use in your own
songs.

The Name text gadget displays the name of the selected instrument. You may rename the instrument by typing a new name into this gadget.

The remaining integer gadgets are the current loop / *NEW* tuning / MIDI / volume values of the selected instrument, and the Pitch gadget is the current default pitch of the selected instrument (if any). They can be changed by entering a new value, or by holding the left mouse button on the Pitch gadget and pressing a new note on the keyboard. Note that the MIDI and loop (Repeat / RepLen) gadgets cannot both be used at the same time: changing a MIDI gadget value sets the loop gadgets to zero, and vice-versa.

(For a description of loop / tuning / MIDI / relative volume values, and the default instrument pitch, see the
Instrument Parameters Window
).

The Exit gadget closes the window.

1.32 The MIDI Message Editor [Keyboard shortcut: Amiga-G]

This window offers the tools required to capture, send, and store ↩
MIDI
data, and to edit MIDI messages in
hexadecimal
. (Opening this window is
achieved using the
Display menu
).

The message editor is especially suitable for, but not limited to, capturing System Exclusive (SysEx) messages. These are very versatile

messages which can (for example) be used to set and alter the parameters of sounds on machines supporting this facility. You can edit sounds using your synthesizer, then transfer either the original sound or the edited sound into your Amiga and save it. Later on, OctaMED can send the sound back to the synthesizer for playing.

The gadgets to the right of "Msg" are: current message number, previous message, next message, and total number of messages in the buffer.

Other gadgets include:

New Msg — Adds a new message to the end of the list. Use this gadget to create a new message after booting OctaMED.

New Here — Inserts a new message at the current point in the list. Usually "New Msg" is preferred to this gadget.

Del Msg — Deletes the current message.

Clear Msg — Clears the current message (sets all bytes to zero).

Msg Size — Newly created messages are eight bytes long, but to capture (for example) SysEx messages, a much larger buffer is required. So use this gadget to change the message size. The arrow gadgets decrease / increase the size by one. *NEW* The maximum size is 1048560 bytes.

Name — Allows you to name the message: it's usually hard to recognize a message from its hex dump! :)

Save Msg — Opens a file requester for saving messages. Note that MIDI messages are automatically saved with modules (except Tracker modules, see Save Options).

Load Msg — Opens a file requester for loading messages.

Capture Msg — To capture data from your MIDI device, click this gadget then start sending data. Clicking it again stops capturing (although with SysEx messages there is an easier way to stop capturing, see "Auto-Terminate Capture" below). MIDI Active and Input Active in the MIDI menu are automatically selected when Capture Msg is pressed.

Send Msg — Sends out the current MIDI message. Command 10 also does this (see MIDI Commands).

Auto-Terminate — Causes OctaMED to stop capturing when a SysEx end byte

Capture ($F7) is received. OctaMED will also remove all unused bytes at the end of the buffer: you shouldn't leave any unused (zero) bytes after the actual MIDI data. These zeroes are MIDI data too, which will be sent, and this is likely to cause problems. So this gadget is usually kept switched on.

If this gadget is off, however, OctaMED will capture all incoming bytes until either the "Capture Msg" gadget is released or the end of the buffer is reached.

The display box to the right of Auto-Terminate Capture shows "Recording..." when a MIDI message is being captured.

Exit Closes the window.

You may also edit the hex data. Make sure editing is on, then simply use the cursor keys to move around the data and the numeric keys (0-9, A-F) to modify the hex data. Use the Del key to delete a byte, and Shift-Del to insert a new one.

(See also
MIDI Commands
, the
MIDI Menu
, and the
Input Map Editor
)

1.33 The Input Map Editor [Keyboard shortcut: Amiga-A]

With this window you may remap all the input keys on your keyboard ↩
. It is
opened using the
Display menu
.

Each key can be assigned to:

- -- enter any note/command you wish (similar to
  Programmable Keys
)
- -- perform an editing action

This also works with a standard Amiga keyboard: a MIDI keyboard is not required.

The following gadgets are included in this window:

Map Active When this is selected, the current input map will be used in preference to the default OctaMED keyboard map.

Create New Map By default there is no input map, so this must be clicked to create a new one.

Now, for each note an entry like this is displayed:
"C-1xxxxxx", which means that the C-1 key will just enter
C-1 with the current instrument number, and leave the
command numbers untouched.

You may edit an entry in the same way as in the

Programmable Keys
window. Select an entry by clicking on
it, hold down the mouse button, point at the number you
wish to change and press a key on the keyboard to change
it.

Delete This Map — After a confirmation requester, removes the current map.

Select Function — Displays the Functions window, with which you may select an editing function for the currently selected key.

Reset Selected — Changes the selected key back to its original function.

Load Map — Displays a file requester, allowing you to load a new input map from disk. A requester will appear if the current input map has been changed since last saving.

Save Map — Opens a file requester, offering to save the current input map to disk.

1.34 The Functions Window

This window displays a list of editing functions for use with the

input map editor
. It is opened by clicking "Select Function" in the editor.

Clicking one of the functions in the window changes the selected key in the input map editor to that function.

All functions should be self-explanatory.

1.35 The Song Selector Window *NEW* [Keyboard shortcut: Left Alt-G]

This window allows you to select, add and delete songs in a multi- ↩
module.
(A "multi-module" is a project that contains more than one song, with all

songs sharing the same set of instruments). It may be brought up by choosing

Song menu
/Select, or by clicking "Sg" on the upper screen
.

The window displays a list of all songs in the module, and a song may be selected by clicking on it. The song's name appears in the display box immediately below the list.

The gadgets in this window are as follows:

Add New Adds a new song to the end of the list.

Add Here Adds a new song at the currently selected position.

Delete Deletes the selected song.

Select Makes the selected song the current song, and closes the window.

Exit Closes the window.

(Song selection gadgets are also contained on the upper screen
)

1.36 The Playing Sequence Window [Keyboard shortcut: Left Alt-Q]

The playing sequence consists of a list of block numbers and names ↩
arranged
in the order they should be played in the song. With the release of OctaMED V5.0, more than one playing sequence may be defined (called "sections"), and the

section list
contains the order in which to play these multiple playing sequences. When the last section has been played, the song will by default start again from the beginning (although it's also possible to stop the playing).

This window contains the functions required to create playing sequences, and is activated by either clicking "Sq" on the upper screen
or using the

Song menu
. A sequence may use the same block number more than once, and a maximum of *NEW* 999 entries in each playing sequence is allowed. ("Playing sequence" will be referred to as "playseq" from now on). The maximum number of separate playseqs allowed is 65535 (should be enough!).

The current playseq position ("currentpos") is highlighted in white, and may be set by clicking on a block name. Selecting currentpos while the song is playing immediately plays from the beginning of the entry selected.

The following gadgets for editing playseqs are included in this window:

Top Sets currentpos to the top of the display.

[Keyboard shortcut: Ctrl-NM7 ("NM" = numeric keypad, apologies (Home) to Amiga 600 owners!)]

Bottom Sets currentpos to the bottom of the display.

[Keyboard shortcut: Ctrl-NM1 (End)]

Insert Duplicates the entry highlighted by currentpos.

[Keyboard shortcut: Ctrl-NM0 (Ins)]

Ins Curr Inserts a new entry, the current block, at currentpos.

[Keyboard shortcut: Ctrl-NM5]

Note that to append a playseq entry to the end of the list, you must click just below the final playseq entry before using one of the insert gadgets.

Delete Deletes the current entry.

[Keyboard shortcut: Ctrl-NM.]

Clear After a confirmation requester, clears the current playseq.

[Other keyboard shortcuts: Ctrl-NM8 scrolls up, Ctrl-NM2 scrolls down. Note that with the Caps Lock on, the playing sequence can be edited without holding down the Ctrl key.]

Follow *NEW* Using the scroll bar, it is possible to scroll around the list independent of currentpos. When "Follow" is selected, the position of the list will be automatically updated during play.

The integer gadget to the left of "Follow" contains the block number of currentpos, which can be altered either by typing in a new number or by using the arrow gadgets. You can’t increase the block number beyond the number of the last block in the song. [Keyboard shortcuts for the arrow gadgets: Ctrl-NM4 decreases block number, Ctrl-NM6 increases]

The arrow gadgets act slightly differently when currentpos is below the last playseq entry. Pressing the left arrow gadget deletes the last entry; pressing the right one appends block 000 to the end of the sequence.

The display box to the right of the integer gadget contains the number of currentpos and the total number of entries in the current section.

NEW Multiple playseqs (sections) can be created using the following buttons:

Name Displays the name of the current section, which you can edit.

New Sec Adds a new section after the last section.

New Sec Here Inserts a new section at the current position.

Delete Sec Deletes the current section.

Below these buttons is an integer gadget showing the current section number. It may be changed by either typing in a new number or using the arrow gadgets. The display box to the right of the integer gadget contains the total number of sections.

The Exit gadget closes the window.

(Note that the song can be stopped at any time by using player command FFE: see
Commands A - F
).

(See also the
Section List
and the
Block List
)

1.37 The Song Options Window [Keyboard shortcut: Amiga-H]

This window contains various song parameters. In a multi-module, these parameters can be different for each song. (It is opened using the

Song menu
).

The gadgets are listed below:

Name This text gadget contains the name of the current song, displayed on the title bar. You may type in a new name.

Channel Mode The Amiga has four sound channels, but by mixing two notes together and playing them through one channel, up to eight notes can be played at once. This radio button is used to select the number of channels OctaMED should use. (See

5-8 Channel Mode
for more info).

Note: for MIDI use, "4 Channels/MIDI" should be selected (this is also the default).

The cycle gadget chooses whether the data bytes of "C" commands (see

Commands A - F
) should be in hexadecimal

or decimal. If you aren't a
programmer (and even if you are), it may be easier to think in decimal.
"Decimal Volumes" is the default, but we recommend using hexadecimal
volumes wherever possible. They're slightly faster (not noticeably, but
faster anyway ;^).

You can easily convert all volume commands from decimal to hex and vice-
versa with the "Convert" gadget. Clicking this gadget prompts you for the
type of conversion desired.

Audio Filter Active	Turns the low-pass audio filter on/off. When on, the Amiga's power LED will be bright. However it is best to keep the filter off, since the sound quality is usually better.
High Quality Mode	When on, this significantly increases the audio quality in 5-8 channel modes. Unfortunately, it will also double the processor load, so a 68020 processor or higher is required to use this gadget in seven and eight-channel modes. Under OctaMED Pro V3 and V4, High Quality Mode slowed down the tempo a fraction. In V5 the tempo is now unaffected. So when loading songs created with V3 or V4 that use this mode, you'll need to slightly decrease the tempo for the song to play at the intended speed.
No Slide On 1st Pulse	Normally effects are done on every timing pulse, but with this on, the effects are not done on the first timing pulse. This is the way the Trackers perform effects, and this switch is for compatibility only: it is automatically switched on when a Tracker module is loaded. (For information on timing pulses, see Upper Screen).
Play Transpose	This slider transposes the whole song by the value selected. It doesn't change the notes, it just affects playing. The minimum and maximum is -12 and 12 respectively (i.e. \ensuremath{\pm} 1 octave). Other transposition functions ↩ may be found in the Transpose window .
Exit	Closes the window.

1.38 The Relative Track Volumes Window [Keyboard shortcut: Amiga-R]

This window contains sliders to set the proportional volume of ↩ each track
and the master volume. It is opened using the
Song menu
.

Each volume can be 1 - 64. The master volume sets the overall volume of

the song. If both the master volume and the volume of a track were 64, that track is played at full volume. If, however, the master volume and a track volume were 32, the volume of that track would be a quarter of full volume.

NEW The two large arrow gadgets at the bottom left of the window are like the track arrow gadgets on the
upper screen
- clicking them show the previous/next sixteen tracks, and shift-clicking them show the first/last sixteen tracks in the song. (They only really apply to blocks containing over sixteen tracks).

The Exit gadget closes the window.

1.39 The Block Properties Window [Keyboard shortcut: Amiga-B]

This window allows you to edit the properties of the current block ↩
. It is activated using the
Block menu
.

The gadgets are:

Name — Contains the name of the block, which can be changed by typing in a new name. (The name is also displayed on the
upper screen
and in the
Block List window
). A maximum of 41 characters is allowed.

Tracks *NEW* — Selects the number of tracks in the block. The minimum is 1 and the maximum 64. (The number of tracks that can be displayed on-screen at any one time is set by
Settings Menu
/Display Max Tracks).

Note that track 8 onwards can only be used with MIDI devices (see the
MIDI Menu
), and tracks 4-7 only with the Channel Mode gadget in the
Song Options window
set appropriately (except for MIDI use).

Also note that when you decrease the number of tracks, the higher tracks will be lost (with no "Are you sure?" requesters).

Length — The number of lines in the block. Can be changed by either typing in a new number or using the arrow gadgets. < and > decrease / increase by 1, and << and >> decrease / increase by 10. The

preferred way is to type in a new number directly, since less "memory fragmentation" occurs.

The maximum length of a block is 3200 lines.

Exit Closes the window.

1.40 The Block List Window *NEW* [Keyboard shortcut: Left Alt-B]

New to V5.0, the block list is an "at-a-glance" list of the current song's blocks and their names. It is brought up by either using the Block menu or clicking the small "B" gadget on the upper screen.

The current block, highlighted in white, may be changed by clicking on another block. Keyboard shortcuts for changing the current block are:

Shift - <up> / <down>	Previous / next block
Left Alt - <up> / <down>	First block / last block

The text gadget displays the current block's name, which can also be changed by typing in a new name. Up to 41 characters are allowed in each name.

The window contains the following gadgets:

Insert New Inserts a new block at the current block position.

Append New Inserts a new block after the last block. These gadgets are like the New/Insert and New/Append items in the Block menu.

Ins to Seq Inserts the current block's number at the current playing sequence position (see Playing Sequence Window).

App to Seq Appends the current block's number to the playing sequence (see Playing Sequence Window).

Delete Deletes the current block. Equivalent to the Delete items in the Block menu.

Exit Closes the window.

1.41 The Highlight Options Window

In this window you can highlight the current block's lines in a particular order. This is helpful when positioning notes, especially in widely-spaced blocks. It is opened using the Block menu.

The top row of small square gadgets highlight the block lines with the respective spacing. For example, the 4 gadget highlights every fourth line. You'll probably use this particular gadget (4) the most often, since in a normal default block of 64 lines, the gadget highlights every beat in the block (i.e. every four 16th notes).

The other gadgets are as follows:

Clear — Clears all the highlighted lines in the block.

Offset *NEW* — Sets the first line to be highlighted. For example, an offset of 2 begins highlighting on line 002.

Spacing *NEW* — Allows a custom highlight spacing to be entered. For example, entering 12 highlights every twelfth line.

Exit — Closes the window.

You'll notice that the 1, 2, 3, 4, 6 and 8 gadgets are all underlined, meaning (of course) that they have a Left Alt shortcut. These shortcuts, however, only work with the numeric keypad keys (not the keys on the main keyboard).

Note that when editing, the Tab key highlights the current line. Also note that highlighting an already highlighted line removes the highlighting.

1.42 The Expand/Shrink Window

This window, activated by choosing Block Menu /Expand/Shrink, is used for expanding or shrinking the current block.

The "Expand" gadget creates empty lines between each note, and "Shrink" removes lines. The "Factor" gadget contains the amount of expansion or shrink.

For example, if Factor was 3, pressing Expand would insert two empty lines between each note (thus trebling the block length), and pressing Shrink would remove every second and third line (thus thirding the block length).

"Factor" may be 1 - 99, but the expanded block length must not exceed 3200 lines, and the shrink factor must be divisable by the number of lines in the block. If either of these rules are infringed, a message appears to communicate this.

Expansion is useful, for example, if you would like to include some quick rhythms in a block but realize that the block plays too slowly for the rhythms. (However, fast rhythms may also be created using commands FF1, FF2, FF3, and 1Fxx - see
Player Commands
, so try these before expanding).

The only real use of shrinking is to reverse the effect of a previous expansion.

1.43 The Instrument Parameters Window [Keyboard shortcut: Left Alt-I]

With this important window you may alter the characteristics of ↩
the current
instrument. It is opened by either using the
Instr menu
or clicking the
"Inst Params" gadget on the
upper screen
.

The gadgets are as follows:

Name Contains the name of the instrument, which may be renamed by typing in a new name. (However, it is advisable not to rename instruments when saving songs without instruments, since the renamed instruments will probably fail to load). The maximum name length is 40 characters.

The display box to the right of Name contains the current sample number. (By the way, "instrument" and "sample" essentially mean the same thing).

Flush Removes the current instrument from memory and clears all its parameters. (Equivalent to
Instr Menu
/Flush Current).

The instrument selection gadgets

The slider and arrow gadgets are used to select the current instrument:

1st Selects the first instrument (01).

Last Selects the last instrument (1V).

L.U. Selects the last instrument in memory (stands for "Last Used").

Keyboard shortcuts for selecting the instrument include:

Shift - <left> / <right>	Previous / Next instrument
Alt - <left> / <right>	16 samples forward/backwards

Instruments may also be selected using the numeric keypad (see the

Keyboard Options window
).

The loop gadgets

The "Repeat", "RepLen" and "Loop On" gadgets are the loop gadgets. A sample loop means that the notes you play with the sample will be sustained until they are stopped. This is due to a particular part of the sample being continually repeated (or "looped").

The Repeat value is the beginning of the loop in bytes from the start of the sample, and the RepLen value is the length of the loop. Selecting Loop On activates the loop. Loops are set in steps of 2 bytes, i.e. only even numbers may be used.

The loop may also be set by using the loop pointers and gadgets in the

sample editor
. When you load IFF instruments, these values are automatically loaded.

The tuning gadgets

Under the loop gadgets is a cycle gadget and a slider, used for setting the tuning of an instrument. The slider sets either the "Transpose" or the "Finetune" value, depending on the state of the cycle gadget (Transpose is default).

"Transpose" is the number of halfsteps (semitones) lower or higher than their normal pitch that the current instrument's notes should be played at. For example, if the transpose value was 3 and note C-2 was to be played with the current instrument, it would be transposed 3 halfsteps higher (D#-2). A negative value transposes lower. The maximum and minimum transpose values are 127 and -128 (although higher values only affect MIDI instruments).

The finetune value allows you to tune instruments in small steps, which is useful for incorrectly sampled instruments. The value can be -8 to 7.

The two numbers separated by a "/" are the transpose and finetune values.

Hold and decay

These gadgets allow you to set the exact duration and the speed of fading of a note. "Hold" is the duration in timing pulses (see
Upper Screen
for a
description of timing pulses, you'll need it to understand this section!), and "Decay" is the speed of fade when the hold duration has completed.

In these examples, the secondary tempo is assumed to be the default 6. One line in the examples is one timing pulse.

```
    1. No Hold Set                      2. Hold Set To 2
    --------------                      ----------------
    0  Play note (e.g. C-2 10000)       0  Play note (e.g. C-2 10000)
    1                                   1
    2                                   2  STOP note
    3                                   3  (silence)
    4                                   4
    5                                   5
    6  Play new note (e.g. D-3 10000)   6  Play new note (e.g. D-3 10000)
```

In example 2, the note is stopped on the second timing pulse.

BUT: if the note is followed by a "keep holding symbol" in the track, the note is not stopped on the second timing pulse but carries on playing. For example:

```
000 C-2 10000                /  Line No.  Pulse No.  Action
001 -|- 10000               /     003         0      Continue note...
002 -|- 10000              /      003         1      Continue note...
003 -|- 10000 ==> ZOOMED =>       003         2      STOP note
004 --- 00000              \      003         3      (silence)
005 D-3 10000               \     003         4
```

So on the last "keep holding symbol" encountered, the usual hold value is used. This symbol is inserted by either clearing the note and entering only the instrument number, or more easily by pressing Return or the A key.

If the decay is zero, the note is turned off immediately after holding. If it is a non-zero value, however, the note will fade after holding. A value of 1 produces the slowest decay. Decay only works if Hold is non-zero. Both Hold and Decay can have a value of 0 to 127.

Note that Decay doesn’t work with MIDI instruments, and is handled very differently with synthsounds or hybrids (see
Synthsound Program Language
).

Hold and Decay is quite a useful feature, and although it may sound complicated, it isn’t really :-), so we recommend that you learn to use it! (Thanks to Håkan "ZAP" Andersson for suggesting this feature to the author!).

Default volume and *NEW* pitch

The "Volume" gadget sets the default volume of the current instrument. It ranges from 0 (silent) to 64 (full volume).

"Default Pitch" allows you to set a default pitch for the current instrument. When you press the F key the instrument is played at that pitch. This can be very useful for untuned instruments like percussion.

The pitch box contains the default pitch of the instrument (or --- if no pitch is set). To change this, hold down the left mouse button on the box and press a note on the keyboard. You may also clear the pitch by pressing Return.

MIDI gadgets (see the MIDI Menu and MIDI Commands)

Before using a MIDI instrument, you need to set the functions in this part of the window to the required values. They are:

MIDICh — This slider sets the MIDI channel for the instrument (0 - 16). For example, setting it to 5 means this instrument's notes are sent through MIDI channel 5.

Preset — Sets the preset number of the instrument (max. 128 or 2800).

With this set to zero, OctaMED uses your keyboard's default preset for the instrument's MIDI channel (see above). But by giving this gadget a non-zero value, you may use more than one preset on the same channel: OctaMED sends a program change message whenever a note is played.

If you want to send a preset change command without playing a note, use the C00 command with any note played by the instrument with the new preset.

Suppress NoteOff — Suppresses Note Off messages for the current instrument. Some devices may have some instruments (e.g. one-shot drum sounds) which actually ignore the Note Off messages. When this is selected, Note Offs aren't sent for the current instrument, reducing unnecessary output (therefore slightly faster).

Extended Preset *NEW* — When off, the maximum value of the Preset gadget is 128, but when on the maximum is increased to 2800. However, this can only be used on some MIDI devices which support the exact method of sending the preset:

* Presets 1 - 100 are sent in the normal manner.
* Presets above 100 are sent by first sending the "hundreds" part and then the 0-99 part. For example, the number 1156 is sent as 11 followed by 56.

Consult your manual to see if this is the way supported by your device.

In order to hear a MIDI instrument, you must also set its default volume.

Note: a MIDI instrument's name doesn't really have any use. It's good practice, however, to type the name of the presets into the Name gadget. This way you can easily see the presets, and if you give the song to someone else who may have different MIDI equipment, he / she can easily change the preset numbers to use the correct presets on his / her MIDI device.

** The loop, tuning, default volume, and MIDI values, and the default pitch can all be set in the path file using the

sample list editor
.

1.44 The Transpose Window [Keyboard shortcut: Amiga-T]

This window contains functions that "transpose" (change the pitch of) the
notes in a particular area of the current project. It is activated using
the
Edit menu
.

The gadgets under "Affect" choose which area of the song the transposition
should affect, and the notes played by which instruments. These gadgets
should be selected before choosing a function, and are:

Song — Affects the whole song (default).

Block — Affects the current block.

Track — Affects the current track (the track that the cursor is on).

Selected Tracks — Affects selected tracks (tracks are selected by setting the cycle gadget on the
upper screen
to "Select").

Range — Affects the range, selected using the mouse. (The button used to mark a range is chosen in the
Mouse Options window
).

All — Affects all instruments (default).

Current — Affects the currently selected instrument.

The "Transpose" functions are Octave Up / Down and Halfstep Up / Down, and
should be self-explanatory. (Note to British users: "halfstep" means
"semitone").

The "Change Notes" operations act on the Source and Destination notes,
which are selected by clicking and holding the left mouse button on the
note box and pressing a key (for example, the I key selects note C-3).

Change — Allows occurences of a single note to be changed throughout the specified area. It changes all notes in the selected area from the source note to the destination note.

Swap — Swaps all source notes in the selected area with the destination note.

The "Change Instrument" functions perform on notes played by the Source and
Destination instruments, which are picked by selecting the required
instrument (using Shift - <left> / <right> etc.) and clicking "Source" or
"Destination".

Change Changes the notes (in the selected area) played by the source instrument to the destination instrument.

Swap Swaps the source and destination instrument numbers of notes having either.

Delete Deletes the notes with the source instrument number.

1.45 The Spread Notes Window [Keyboard shortcut: Amiga-F]

This window allows you to spread the notes in the currently marked range across consecutive tracks to the right of the range. It is opened using the

Edit menu .

The "Width" slider selects the number of tracks to spread the notes across (2 - 10).

"Spread" spreads the notes, and "Exit" closes the window.

1.46 The Note Echo Window [Keyboard shortcut: Amiga-E]

With this window, opened using the Edit menu , you may produce echoes automatically with the "C" command (see Commands A - F). The volume halves with each echo. For example:

```
C-1 10000   (the initial note)
--- 00000
C-1 10C32   (half volume. Decimal volumes are used in this example)
--- 00000
C-1 10C16   (quarter volume)
--- 00000
C-1 10C08   (eighth volume)
...
```

Echoed notes will only be placed on empty note slots.

The gadgets are as follows:

Distance The distance in lines between echoes, e.g. 4 means echo every fourth line.

Minimum Volume The minimum volume of an echo. Echoes with a smaller volume than this won’t be generated.

```
Do Echo     Creates the echo.

Exit        Closes the window.
ENDNODE
```

1.47 The Input Channel Window [Keyboard shortcut: Amiga-\ ]

```
                This small window, activated using the
                MIDI menu
                , contains the MIDI input
channel number through which notes will be received when
                MIDI Menu
                /Input
Active is on.

If it is zero, OctaMED will accept input from all MIDI channels.
```

1.48 The Mouse Options Window *NEW* [Keyboard shortcut: Amiga-W]

```
                This window contains three cycle gadgets, which are used to select ↩
                    the
function of each mouse button when the button is clicked in the

                Tracker editor
                . It is opened using the
                Settings menu
                .

The available functions are as follows:

No Operation       The button has no effect.

Track On/Off       The button switches the clicked track on or off.

Select Track       Switches the clicked selected track on or off. (The
                   status of selected tracks are displayed by setting the
                   cycle gadget on the
                upper screen
                 to "Select").

Position Cursor    Sets the cursor position under the mouse pointer.

Select Range       Marks a range. (See the
                Tracker Editor
                )

                   Note: due to conflicts with the menu system, the right
                   mouse button cannot be used to select a range as it has
                   done in previous versions of (Octa)MED.
```

Also note that if the Right Mouse Button gadget is set to anything other than "No Operation", the menu shortcuts (Right Amiga + key) can't be used when the mouse pointer is over the tracker editor. (They instead act as if the right mouse button has been pressed: OctaMED has no control over this!)

The default for Left Mouse Button is Select Range, and the default for the other gadgets is No Operation. Of course, the Middle Mouse Button setting is ignored if you own a two-button mouse!

The Exit gadget closes the window.

1.49 The Keyboard Options Window [Keyboard shortcut: Amiga-K]

This window contains many settings used when editing in the Tracker editor
,
and also holds settings for the numeric keypad. It is brought up using the

Settings menu
.

Cursor advance

The three gadgets at the top of the window are the directions the cursor should advance after entering something in the editor. They are:

Line Up / Down — Advances up / down a line.

[Ctrl-A toggles Don't Advance / Down]

Track Prev / Next — Advances to the previous / next track when the cursor is on the note.

Cursor Left / Right — Advances left / right when the cursor is on the command digits.

Advance Line Down is the usual preferred setting, and the default.

Numeric keypad mapping (Amiga 600 owners may ignore this section)

The two cycle gadgets select a total of four different ways to configure the function of the keypad.

The first gadget cycles "Tracks On/Off" and "Select Instr". With the first option you may turn tracks 0-F or 0-9 on/off, and with the second option you can select instruments quickly.

The second gadget selects the "Normal" or "Alternative" layout of the keypad, and are as follows:

Normal layout (button = selects track no. / selects instrument no.)

(= 0 / 01) = 1 / 02 / = 2 / 03 * = 3 / 04

```
   7 = 4 / 05      8 = 5 / 06      9 = 6 / 07      - = 7 / 08
   4 = 8 / 09      5 = 9 / 0A      6 = A / 0B      + = B / 0C
   1 = C / 0D      2 = D / 0E      3 = E / 0F      . = F / 0G
```

Alternative layout - Tracks On/Off

Keys 0 - 9	Turns tracks 0 - 9 on/off.
The . key	Turns all tracks off.
Enter key	Turns all tracks on.

Alternative layout - Select Instr

Keys 1 - 9	Selects instruments 1 - 9
The . key	Changes the first instrument digit (for example, from 05 to 15 or from 15 to 05)
'0'	Selects instrument 10
'+'	Next instrument
'-'	Previous instrument
'{'	Decrease volume of the current instrument by one
'}'	Increase volume of the current instrument by one
'/'	Select last used instrument
'*'	Pick instrument number nearest the cursor

Default is Normal Tracks On/Off.

Spacing (see Upper Screen)

The slider sets the space value. A space value of 3, for example, enters notes every third line. The maximum value is 16 (and minimum 2).

Other spacing options are:

Destructive Spacing *NEW*	When selected, any notes that lie between the lines used for entering spaced notes will be deleted when a note is entered.
Auto-Round Spacing *NEW*	When on, restricts cursor movements to lines divisible by the spacing value. For example, with a spacing value of 2, you can only move the cursor to lines 000, 002, 004 etc. Note that this only applies to movement using the cursor keys.

By default these two options are on, which has been the normal operation in previous versions of OctaMED.

Other options

Chord Reset	When on, after entering a chord (see Upper Screen) the cursor returns to the initial track.
Space = DEL	Some users prefer using the space bar to enter blank notes, in preference to the Del key. This check box allows this.

Protracker Shortcuts — This switch changes the keyboard layout so that the most common Protracker keyboard options are recognized. This is helpful for those who have become used to the Protracker keyboard layout. The following PT shortcuts are recognized:

Right Shift	Turns editing on, plays the block (record)
Right Alt	Continue Song
Right Amiga	Play Block
L-Alt+curs.L/R	Previous / next block
Shift+curs.L/R	Increase / decrease playseq position
Space bar	Stops playing / toggles editing
Tab	Next track
Shift-Tab	Previous track
Shift-F3 - F5	Cut / Copy / Paste track
Alt-F3 - F5	Cut / Copy / Paste block

Advance with sound — When activated, the notes in the block are played when the cursor is moved up or down. Useful for non-real time editing.

1.50 The Programmable Keys Window [Keyboard shortcut: Amiga-Y]

The programmable keys ("progkeys" from now on) allow music to be entered much more easily and quickly. You can assign notes or groups of notes, including commands, to 10 different keys. The assigned notes can then be inserted in the Tracker editor by holding down Shift and pressing key 0 - 9.

This window contains the functions necessary to view and edit the progkeys, and is opened using the Settings menu.

The cycle gadget is used to select whether you wish to edit the normal Shift- 0 - 9 definitions (default) or the Right Alt definition. The Right Alt definition consists of the command digits only, and if you enter notes with the Right Alt key held in the Tracker editor, the specified command will be inserted with the note.

The slider to the right of the cycle gadget selects which progkey you would like to edit (0 - 9). By default key 1 is selected. The slider is ghosted when "Right Alt" is picked.

The box below this, containing a note and command digits, is the definition of this progkey. A note or digit may be edited by clicking and holding the left mouse button on the note / digit, then entering a new note / number using the keyboard.

A note / digit being "x" indicates "transparency", which means that, when entered in the

Tracker editor
, the corresponding existing note / digit will
remain unchanged. The Right Alt key's definition always has transparent
note and instrument numbers.

For example, the definition "xxxxx0000" would clear the command digits,
but leave the notes. Since the note is "xxx" and the instrument number
"xx", they won't be changed, so only the command is set to zero. (This
definition is the same as pressing Alt-Del).

The Clear gadget clears the current definition, i.e. sets it to "--- 00000"
for a normal progkey and to "xxxxx0000" for Right Alt.

The Pick gadgets copy either the note under the cursor, the current range,
or the copy buffer to the current definition. If a range is picked, the
definition box shows the word "=Range=". [Shortcut: Shift-Ctrl-0-9 picks
note under cursor]

The Save/Load Keys gadgets open a file requester allowing you to save and
load a set of progkey definitions. The default name is S:OctaMEDPro.defkeys
(OctaMED attempts to load a file of this name on startup), but definitions
can be saved under any filename.

The Exit gadget closes the window.

(Note: when Caps Lock is on, the programmable keys may be entered simply by
pressing the 0 - 9 keys: Shift doesn't have to be held).

1.51 The Palette Window

With this window, activated using the
Settings menu
, you may change the
screen's colors.

A color is selected by clicking on it, with the chosen color appearing in
the recessed box at the top left of the window.

The Red, Green and Blue sliders alter the intensity of red, green and blue
light in the selected color.

NEW The sliders' range is set using the Palette Type cycle gadget. With
8-Bit selected (default), the range is 0 - 255, allowing compatibility with
the new AGA chip set present in the A1200 and A4000 computers. With 4-Bit
selected, the range is 0 - 15, more suitable for use with older Amigas.

Note that either setting can be used with either chip set; but with an
inappropriate setting, AGA computers could only select 1 in every 4096
available colours, and with other computers the colour would only change
once every 16 slider values (which is a little uncomfortable!).

The OK and Cancel gadgets accept or reject the color changes and close the
window.

1.52 The Instrument Type Window [Keyboard shortcut: Left Alt-T]

```
               This window, brought up by clicking "Type" on the
               upper screen
               , chooses
which type the current instrument is to be. The options are:

Sample         The "normal" instruments, played either through the Amiga or
               using a MIDI device.

               OctaMED can load both "raw" (pure binary) samples and IFF 8SVX
               1 - 7-octave samples. In addition to these, OctaMED Pro V4
               introduced the loading of "delta-compressed" samples. These
               samples' lengths are exactly halved (in fact they are
               converted to a kind of 4-bit resolution of Fibonacci delta
               codes: much simpler than it sounds!). There is, however, a
               slight loss in sound quality. Currently OctaMED can't actually
               create delta-compressed samples, but some dedicated sample
               editor programs such as Audiomaster can.

               Note that raw and 1-octave IFF samples can only use octaves
               1 - 3: octaves higher than 3 play using octave 3's range. Also
               note that the highest octave of a 7-octave sample can't be
               played.

               For MIDI use, the instrument is not strictly an instrument,
               but simply a few settings which result in the notes played
               with that instrument being sent through a MIDI interface. MIDI
               instruments can use the full 10.5-octave range. (For more
               information on MIDI, see
                  MIDI Menu
                   and
                  Instr Parameters
                  ).

Hybrid         As "Sample" above, but can be controled using the same
               "programming language" as synthsounds. (See the

                  Synthetic Sound Programming Language
                  ).

ExtSample      ExtSamples are like normal Amiga samples, except two lower
*NEW*          octaves are added to the octave range (octaves 1 and 2). The
               octaves used with normal samples are moved up two places to
               make way for the new octaves (i.e. octave 1 becomes octave 3,
               octave 2 becomes octave 4 etc.).

               However, because of an undesirable feature in the Amiga's
               hardware, especially under faster processors, ExtSamples
               should be used with care. After playing a note with an
               ExtSample using one of the new octaves, the following note
               will often not be correctly triggered. The solution is to use
               the FFF command before the following note is played. For
               example:

               C-1 20000 <- ExtSample
```

```
            --- 00000
            --- 00FFF <- use FFF before the next note
            C-2 10000 <- this instrument doesn't need to be an ExtSample
                         for the bug to occur

            However, in "split" channels in
               5-8-channel mode
               , this problem
            doesn't appear at all!

            Note: more experimentative users may discover that octaves 8
            and 9 of a normal sample also appear to play two lower
            octaves. These octaves should, however, *NEVER* be used in
            songs (apart from with MIDI): believe it or not, it is in fact
            a complete coincidence that they work! ExtSamples are the only
            "legal" way of using the two lower octaves. In any case,
            octaves 8 and 9 are also one finetune step sharp :-)

Synthetic   These special instruments, known as "synthsounds", are made
            from simple waveforms which can be joined together and have
            their volume and pitch altered by using a simple "programming
            language". Synthsounds usually sound quite simple, but they
            can be very effective and don't take up nearly as much memory
            as normal samples. In addition, they can play from octaves
            1 - 5, two octaves greater than normal samples. For more
            details, see the
               Synthetic Sound Editor
               .

The Octaves slider shows the number of octaves that the current sample
consists of (1 - 7). Changing the slider's value often messes up the
sample, so it's best not to :^)

The Exit gadget closes the window.
```

1.53 The Section List Window *NEW* [Keyboard shortcut: Left Alt-C]

```
               This window, opened by clicking "Sc" on the
               upper screen
               , contains the
order in which to play song sections. These sections are created in the

               Playing Sequence window
               .

The current section position ("secpos") is highlighted in white, and may be
set by clicking on a section name. Shift-clicking on a section name selects
the section clicked in the Playing Sequence window. A maximum of 65535
entries are allowed (note, however, that only the lower three digits are
displayed).

The integer gadget contains the section number of secpos, which can be
altered either by typing in a new number or by using the arrow gadgets. You
can't increase the section number beyond the number of the last section in
the song.
```

The display boxes to the right of the integer gadget contains the number of secpos and the total number of entries in the current section list, and the total number of sections in the song.

Other gadgets are as follows:

Insert Inserts a new entry 001 at currentsecpos.

Append Appends a new entry 001 to the end of the section list.

Delete Deletes the current entry.

Exit Closes the window.

1.54 The Instrument Load Window *NEW*

This window, activated using the small gadget immediately to the ↩ right of the instrument number on the upper screen, is a convenient way of loading instruments contained in the sample list. (See the Sample List Editor).

The right-hand list contains the directories, and the left-hand list contains the filenames in the current directory. The current directory is set by clicking on a directory name, and an instrument is loaded into the current slot by clicking on an instrument name.

The other gadgets in this window are:

Flush Removes the current instrument from memory.
[Keyboard shortcut: Ctrl - G]

Prev / Next Inst Selects the previous / next instrument.
[Keyboard shortcuts: Shift - <left> / <right>

Prev / Next Free Selects the previous / next empty instrument slot.
[Keyboard shortcuts: Shift - Ctrl - "<" / ">"]

Exit Closes the window.

1.55 The Main Screen

The main screen is split into several parts:

Tracker editor

Notation editor

Upper screen

Lower screen

Note that EITHER the Tracker editor OR the notation editor is displayed in the middle of the screen (not both at once). Which editor is to be displayed is chosen in the Display menu .

1.56 The Tracker Editor

OctaMED Pro started off its life as MED, a public domain clone of a program named "Sound Tracker". Although as MED grew it incorporated numerous features that Sound Tracker lacked, separating it from the competition, one basic feature remains that Sound Tracker pioneered: the Tracker editor.

The Tracker editor is a grid-like system, where the rows are known as "lines" and the columns "tracks".

Assuming a standard 4-track, non-MIDI setup is being used, each track corresponds to one of the Amiga's "sound channels", of which the Amiga has four. These sound channels are used for playing instruments, and each channel can only play one note at a time. So using the above setup, four notes can be played simultaneously (not necessarily all by the same instrument).

The exact time at which these notes are played is set by entering the notes on the appropriate line. When playing, OctaMED plays each of these lines in turn, with a user-defined pause between the playing of each line. So the greater the number of lines between notes, the greater the time span between them. The line numbers are displayed on the extreme left of the screen, and the current line is highlighted in white.

A typical note looks like this:

```
             octave  command digits
               |      / |
          D # 3   5 0 C 2 0
          \ |     |     \ |
           note   |      \|
                  |       data byte (more information
            instrument    about the command digits)
```

The note can be C, C#, D, D#, E, F, F#, G, G#, A, A#, and H (or B), as in standard music. The octave number is which octave the note should be played on, and three octaves can be used with normal Amiga samples.

The instrument number is the number of the instrument that the note should be played with.

The command digits are the number of the command or effect to play, in

hexadecimal
. If there are no effects or commands for this particular note, the digits are "0000". Commands and effects are documented in

Player Commands
.

A blank note (silence) looks like this: --- 00000.

Now for a few examples. To play a C major chord (notes C, E, G) with instrument number 1, a line could look like this:

```
000 C-2 10000  E-2 10000  G-2 10000  --- 00000
|                                           |
line number      "blank" note simply indicates no note on this track
```

To play a C major scale from C to G (i.e. notes C, D, E, F, G), the following could be used:

```
000 C-2 10000
001 D-2 10000
002 E-2 10000
003 F-2 10000
004 G-2 10000
```

To play a C major scale from C to G AT HALF THE SPEED of the above example, this could be used:

```
000 C-2 10000
001 --- 00000 <= In this way, these blank notes
002 D-2 10000    are used as "spacers" between the
003 --- 00000 <= other notes. A blank note doesn't
004 E-2 10000    stop the previous note, it allows
005 --- 00000 <= it to carry on. To stop the note,
006 F-2 10000    player command FFF is used (see
007 --- 00000 <=
```

Commands A - F
).

```
008 G-2 10000
```

So in that instruments are triggered using a vertical list, Tracker editing somewhat resembles programming a drum machine.

Entering notes

Notes are usually entered using the Amiga's keyboard (a MIDI keyboard can also be used, see

MIDI Menu
). The keys are ordered in a piano-like style:

```
 2 3   5 6 7   9 0   = \     (Notes C# D# F# G# A# C# D# F# G#)
Q W E R T Y U I O P [ ]      (Notes C D E F G A H (B) C D E F G)

 S D   G H J   L ;           (Notes C# D# F# G# A# C# D#)
Z X C V B N M , . /          (Notes C D E F G A H (B) C D E)
```

The upper two rows of keys are the upper octave, the lower two rows of keys are the lower octave. Note that keys to the right of the "U" key enter in an even higher octave, and that there is a slight overlap in the lower and upper octaves: the keys to the right of the "M" key are duplicated in the first few keys of the upper octave.

The upper and lower octave "keyboards" repesent octave numbers 1 and 2 by default. Other consecutive octave numbers can be selected using the octaves cycle gadget on the
upper screen
.

If you have an instrument loaded into the current slot, you can hear it by pressing one of these keys. In addition, if editing is on (selected with the Edit gadget on the
upper screen
), the note is entered at the cursor.
A blank note is entered using the Del key.

The cursor is the small grey patch on the current line. As well as being on a note, it may be on a digit (to the right of the note), and digits are changed by simply by typing the new number (with editing on).

If you need to change the fifth digit (which lies between the note and the second instrument digit, and is usually a blank space), which means that sample 10 - 1V is used, position the cursor over the second instrument digit (that is always visible), hold the Shift key and enter the second instrument digit. For example, to change the instrument number to 1E, press Shift-E. Because Shift- 0 - 9 have another use, use Amiga-Shift-0 - 9 to change the instrument number to 10 - 19. This isn't very convenient, but songs with over 31 instruments are rare, so it doesn't matter too much.

The cursor can be moved using the cursor keys, and also by using these keyboard shortcuts:

```
Alt - <left> / <right>        = Previous / next track
Ctrl - <left> / <right>       = Previous / next screenful of tracks
Shift - Ctrl - <left / right> = Track 0 / last track

Shift - <up>      = Previous block (see the next section for a
Shift - <down>    = Next block      description of blocks)
Left Alt - <up>   = First block
Left Alt- <down>  = Last block

Ctrl - [          = Previous song
Ctrl - ]          = Next song / Add song
Shift - Ctrl - [  = Delete last song
Shift - Ctrl - ]  = Add song with no requester

F6   =  First line of block
F7   =  Second quarter of block
F8   =  Middle of block
F9   =  Last quarter of block
F10  =  Last line of block
```

Blocks and the playing sequence

As mentioned in the introduction, a song is made up of "blocks", which are simply defined numbers of tracks and lines. A block can contain up to 3200 lines, and up to 8 tracks (using the Amiga's internal sound chip) or up to 64 tracks (using a MIDI instrument). You can set the number of lines and tracks in each block using the Block Properties window. There can be 1000 blocks in a song (numbered 000 - 999).

The default number of lines in a block is 64, which allows 4 measures of 4/4 time, and means that each line represents a 16th note (British users: 16th note = semiquaver). Notes may be more easily positioned in a block by using line highlighting in the Highlight Options window (for example, with a default block a highlighting of 4 would mark every beat).

Again as touched on in the introduction, the order in which these blocks should be played is defined in the "playing sequence", which is simply a list of block numbers. (See the Playing Sequence window for more information).

Each block may have its own name, and block names may be edited both in the Block Properties window and in the Block List window. The current block and its name is shown on the upper screen.

A list of blocks and their names, and gadgets for inserting and deleting blocks can be found in the Block List window.

The Range

A "range" is a rectangular area of notes that is marked by dragging a mouse button. (Which mouse button is used is chosen in the Mouse Options window). It may be as small as one note or as large as an entire block.

Many editing functions act on the notes in the current range, including some in the Edit menu, Transpose window, and Programmable Keys window.

A range can be canceled by simply clicking the chosen mouse button with a range marked. This is useful, for example, if you have pressed the mouse button by mistake.

1.57 The Notation Editor

The notation editor, activated using the Display menu, offers an alternative to the normal Tracker editor. It can display notes and rests in standard musical notation, which is both useful for those who read music and for printing songs to be played on an external instrument.

Note, however, that although notes can be entered using the notation editor, player commands and effects may only be entered using the Tracker editor.

One line of the Tracker editor is displayed in the notation editor as a 16th note, so a quarter note would be four lines long in the Tracker editor. The notation editor displays and prints one measure at a time.

The notation editor consists of the notation itself on the main screen, and a Notation Control window which contains various editing options. This window may be closed using its close gadget, then reopened using the Display menu.

Note that when the notation editor screen is active, the mouse pointer is displayed as the current note instead of the default pointer symbol. The pointer's "hotspot" (the pixel used to "point" the pointer) is in the note's circle, not at the top of the note's stick. So for example, to click on the Play Block gadget in the upper screen, position the note's circle (not the top of the note's stick) over the gadget and press the left mouse button.

Selecting displayed tracks

The editor quickly becomes cluttered if all tracks are displayed at once. For this reason, you can select exactly which tracks should be displayed. This is achieved with the three rows of small square track gadgets:

Shown — Simply select which tracks are to be shown.

Ghost — Show the tracks in a "ghosted" (semi-visible) form.

Select — Clicking a track gadget clears all Shown tracks except the track clicked, and ghosts the tracks that were previously shown.

NEW The two large arrow gadgets to the right of the track gadgets operate

like the track arrow gadgets on the
upper screen
- clicking them show the
previous/next fourteen tracks, and shift-clicking them show the first/last fourteen tracks in the song. (They only really apply to blocks containing over fourteen tracks).

Presets

You can choose five different combinations of selected and ghosted tracks, and select them using the Preset cycle gadget immediately to the left of the track gadgets. The default is preset number 1.

Usually it's convenient to put different components of the song on the same tracks throughout the song. For example, drums and percussion could be on tracks 0 and 1, the bass line on track 2, the chords on tracks 3-5 and so on. Using the preset function you can quickly display different parts of the song. For example:

Preset 1 All tracks
Preset 2 Only the chords (tracks 3 - 5)
Preset 3 Only the bass line (track 2)
Preset 4 The chords and the bass line (tracks 2 - 5)
Preset 5 Only the melody line (e.g. track 6)

Signatures

You may set the key signature of the song using the Key Signature window, opened using the appropriate menu item. It contains a slider setting the number of accidentals - sharps or flats - required (0 - 6), and a radio button selecting whether the accidentals should be sharps (default) or flats.

A reminder of the number of accidentals used in different keys:

Number of accidentals	Sharps		Flats	
	Major key	Minor key	Major key	Minor key
0	C	A	C	A
1	G	E	F	D
2	D	B	Bb	G
3	A	F#	Eb	C
4	E	C#	Ab	F
5	B	G#	Db	Bb
6	F#	D#	Gb	Eb

The time signature is set to 3/4 or 4/4 by using the Time Signature menu item. 3/4 is three quarter note beats per measure, 4/4 is four quarter note beats per measure.

Instrument settings

Two options relating to the current instrument can be found in the Instr. Notation window, activated using the Current Instrument menu item.

The Tranpose slider is the display transposition value (-24 to 24) for the current instrument. This can be used, for example, to shift the main melody one octave up to separate it from the bass line on the display (its actual pitch is not affected). Usually you'll want to use steps of one octave (i.e. -24, -12, 12, 24), but any value can be chosen. Note that the editor can display just over four octaves (C-1 to D#-4), whereas OctaMED supports 10.5 octaves.

If the Hide Instrument check box is selected, the current instrument won't be displayed in the notation editor (although its notes are played). For example, if notes of a chord extend into the drum track, you can hide the drum instrument(s), showing only the chords.

Also relating to instruments, if the Show Instrument Numbers menu item is selected, instrument numbers will be displayed above the notes on the selected track.

Entering notes

After making sure editing is on (in the upper screen), you can enter notes either using the keyboard or with the mouse. Before editing using either method, you need to select which track the note should be entered to, using the Select track gadgets. Make sure the track you select exists in the current block, or you'll get a warning message: for example, don't select track 6 in a 4-track block.

Edit using the keyboard in the usual way, noting that the cursor is the large blue block.

To edit with the mouse, you must first select its length. This is done by clicking on one of the diagrams of notes or rests at the very left of the Notation Control window. The length of the note in multiples of 16th notes is shown in the Length display box.

Next you position the mouse pointer (which now resembles the chosen note) over the point where you wish to place the note, and press the left mouse button. If you hold down the mouse button and move the mouse up and down, you can hear the note corresponding to its position on the stave, and this note is shown in the Note display box.

The cycle gadget below the two display boxes sets which entering mode you require when using the mouse to edit. Replace (the default) replaces the notes - a bit like the Overwrite option found in wordprocessors. Insert inserts the notes, pushing the following notes to the right. Delete deletes the notes you click on, moving the following notes to the left.

1.58 The Upper Screen

This part of the
main screen
, above the
Tracker editor
 or

notation editor
,
contains some important general functions and displays.

The upper screen is laid out in five rows, which contain the following functions and status displays:

The first row

Play Song — This gadget plays the current song from the start of the first playing sequence.

[Keyboard shortcut: Shift-Alt-Space]

Cont Song — Plays the current song from the current playing sequence position, starting at the current line (or *NEW* the first line if the gadget is clicked with Shift held).

[Keyboard shortcut: Shift-Space]

The remaining gadgets on this line have to do with instruments.

The display box to the right of "Cont Song" contains the current sample number, and is followed by a gadget which opens the Instrument Load Window.

To the right of this gadget is a GetFile gadget which opens a file requester to load one or more instruments (see Instr Menu/Load Instrument(s)). After this is a text gadget containing the name of the current instrument. A new instrument may also be loaded into the current slot by typing a new name into this gadget.

The display box after this displays the size of the sample, or "-Synth-" if it is a synthsound or "-------" if the slot is empty. The size is prefixed by an "H" if the sample is a hybrid sound. The last gadget on this line opens the Type window, with which you may select the type that the current instrument is to be.

The second row

Play Block — Plays the current block from the first line. It will be replayed when the last line is reached.

[Keyboard shortcut: Amiga-Space]

Cont Block Plays the current block from the current line.

[Keyboard shortcut: Alt-Space]

The display box contains the channel mode of the current song, an "M" if MIDI is active, and an "I" if MIDI Input is active (see MIDI Menu).

The remaining gadgets open certain instrument windows:

Instr Params Opens the Instrument Parameters window , which allows you to edit various instrument parameters.

Edit Sample Opens the Sample Editor window.

Edit SynthS Opens the Synthetic Sound Editor window.

The third row

D Continues the block from the current line when a note is entered. Editing must be on. The display box in the lower screen changes to "Waiting Input".

STOP Stops playing the song / block. Shift-clicking (clicking it with Shift held) stops playing and inserts command FFE at the cursor. (See Commands A - F).

[Keyboard shortcut: Space bar]

The next gadget, four digits with a ":" between them, is the timer gadget. This is the number of minutes and seconds since Play/Cont Song/Block has last been clicked, and can be reset (to 00:00) by clicking the "R" gadget. It is also reset by clicking Play Song or Play Block.

NEW The timer gadget also remembers the current song position. When you click the R gadget, the current line / playseq position / section position is stored. Clicking the timer gadget itself moves back to the stored position.

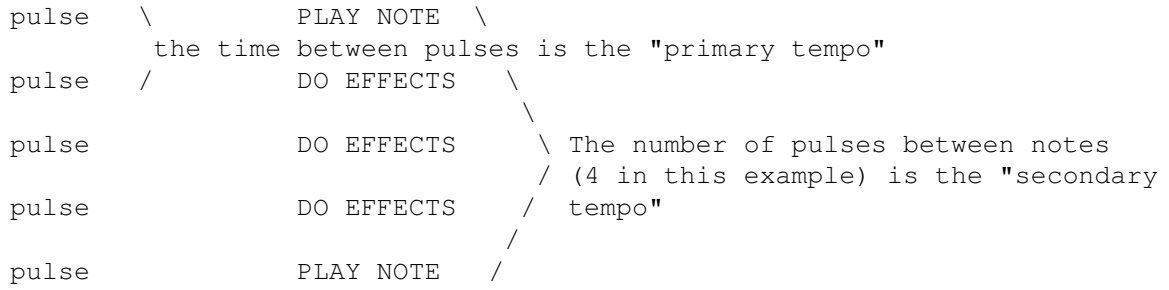
The remainder of this row contains the tempo gadgets, that are used to set the playing speed. The first cycle gadget cycles BPM, which allows you to set the tempo in Beats Per Minute, and SPD (default), with which you may

set the tempo in the usual way.

To understand this completely, technical aspects need to be known. Timing is handled using the CIAB timers, which give out "timing pulses" which trigger OctaMED's player interrupt. On each timing pulse effects are handled (see
Player Commands
), but a new note is usually not played every pulse.

In SPD mode, the time between pulses can be changed using the left-hand slider. This is called the "primary tempo". Usually notes are played every 6th pulse, but this also can be changed using the right-hand slider (it is called the "secondary tempo"). For example, if a new note was played every 3rd pulse, the playing speed would be twice as fast. This doesn't affect the speed of effects.

Graphically:



The primary tempo can be 1 - 240. The higher the number, the faster the speed, and the default is 33. For 4-channel or MIDI songs, values 11 - 240 should be used (1 - 10 can also be used, but they only exist for Sound/Noise/Protracker compatibility). For 5 - 8-channel songs, values 1 - 10 should be used; 11 - 240 are equivalent to 10 (to techies: this works in 5 - 8-channel mode not by changing the time between pulses but by changing the size of the mix buffer).

The secondary tempo can be $01 - $20 (in
HEXADECIMAL
, i.e. 33 values are possible), and the default is 6. The lower, the faster. This allows a fairly rough tempo setting (it's the way the other Trackers set their tempos). For MIDI use (especially for synchronization), you should leave this at 6 and adjust the primary tempo instead. Note that the secondary tempo doesn't affect the speed of effects, unlike the primary tempo.

In BPM mode, the first slider controls the number of beats per minute (for example, 60 is one beat per second). The second slider controls the number of lines per beat (for example, 8 means eight lines are considered as one beat). Make sure that the secondary tempo in SPD mode is set to 6 before using BPM; otherwise, the timing won't be accurate. (This may, in fact, be useful to some users. For example, double the normal BPM accuracy can be obtained by setting the secondary tempo to 3).

The cycle gadget on the far right of the row plays at normal speed when NRM (default), two-thirds speed when at 2/3, and half-speed when at 1/2. This is useful for editing while the song is playing: you can slow the song

down without changing the tempo values, to make entering notes easier.

NOTE: It's possible to make a song which takes up all of the processor time. It will therefore be impossible to stop it. This shouldn't happen accidentally, but it can be done, for example, by filling a block with notes and setting the primary tempo to 240 and the secondary tempo to 1... To stop playing, hold both mouse buttons down for about five or six seconds.

The fourth row

This row contains many status displays and the octave cycle gadget.

The "Sg" gadget opens the
Song Selector window
, and the status display immediately to its right displays the current song and the last song in a multi-module. (A multi-module is a project consisting of more than one song, but which all share the same set of instruments).

The arrow gadgets are used to decrease / increase the current song number. If the current song is the last song, and the right arrow gadget is clicked, an "Add new song?" requester appears, and OctaMED will add a new song to the project if you click "Add". Shift-clicking the right arrow gadget adds a new song without the requester. Shift-clicking the left arrow deletes the last song in memory after displaying a requester. (Equivalent to the "Add New" and "Delete Last" items in the
Song menu
).

NEW The "Sc" gadget opens the
Section List window
, and the following display shows the current section list position and the total number of entries in the section list.

The "Sq" gadget opens the
Playing Sequence window
, and the following display shows the current playing sequence position and the total number of entries in the playing sequence.

NEW The "B" gadget opens the
Block List window
, and the following display shows the current block number (starting at 000), the number of the last block, and the current block name. The last block number + 1 is the total number of blocks in the song (since the numbering starts at 000).

The octave gadget shows which octaves are currently in use when you play the Amiga's keyboard (see the
Tracker Editor
). The first digit is the octave number of the lower row of keys, the second is that of the upper row. If the current instrument has a MIDI channel of 0, keys F1 - F5 select octaves 1+2, 2+3, 3+4, 4+5, and 5+6. If its MIDI channel isn't zero,

F2 - F4 select 4+5 to 6+7, F1 toggles 1+2 to 3+4, and F5 toggles 7+8 to 9+A. To clarify:

Function key	Octave selected (non-MIDI)	Octave selected (MIDI)
F1	1+2	3+4 / 2+3 / 1+2
F2	2+3	4+5
F3	3+4	5+6
F4	4+5	6+7
F5	5+6	7+8 / 8+9 / 9+A

The fifth row

This row contains three important check boxes and the track selection gadgets.

Edit Toggles editing on/off. With editing on, you may insert notes or numbers into the song (see the Tracker Editor).

[Keyboard shortcut: Esc]

Space With this switch on, a set number of lines are skipped when a note is entered into the song. (The number of lines skipped, and other spacing options, are set in the Keyboard Options window).
Useful for entering slow pieces of music, since you don't have to press the Del key as often.

When you enter notes during playing (in "real-time") with Space on, the notes will be quantized. For example, with a spacing value of 2, the notes will only be placed on even-numbered lines (if Auto-Round Spacing is on, see Keyboard Options).

When shift-clicked, spacing is turned on and the Keyboard Options window is opened (with a view to editing the spacing options). This only works when spacing is off.

[Keyboard shortcut: ~ (the key just below Esc)]

Chord When on, the chord entering mode is active. First you should select the tracks which the chord entering affects (using the Select track gadgets documented below). The chord always starts from the current track and continues to the following selected tracks.

Now, holding keys down will enter a chord. For example, to enter a C major chord: hold down the Q key, press the E key and keep both keys held down, then press the G key. On releasing the keys, the cursor moves back to the inital track (if Chord Reset in the Keyboard Options window is on). Chord entering also works well using a MIDI keyboard (see the

MIDI Menu
).

NEW (Chords may be deleted using Left Amiga-DEL: see
Edit Shortcuts
).

[Keyboard shortcut: Shift-Esc]

The remaining gadgets are the track selection gadgets. The row of small gadgets toggle the tracks on/off. The cycle gadget toggles On/Off (default), where the tracks in the song can be turned on/off, and Select, which is used in many editing functions (including Chord,
Edit Menu
/Paste
to Sel Tracks, and
Transpose
). *NEW* Shift-clicking a track selection gadget "solos" the track, i.e. clears all tracks apart from the one selected.

NEW The arrow gadgets display the previous / next fourteen tracks in the small gadgets. Shift-clicking the arrow gadgets displays the first / last fourteen tracks in the current block. The "Set" and "Clr" gadgets set / clear all tracks.

1.59 The Lower Screen

This part of the
main screen
, below the
Tracker editor
or
notation editor
,
contains a few display boxes and one gadget.

On the left-hand side is a display box showing the free memory. "Chip" memory is the memory used to store graphics and samples, and "Fast" memory stores everything else. So if you have a song with many samples in it, it will probably be the Chip memory status you'll be watching. A more detailed account of the free memory can be obtained on the title bar by pressing Ctrl - F.

The smaller display box in the middle of the screen shows the status of the song's playing ("Playing Song", "Playing Block", or "Stopped"), and the current disk activity ("Loading", "Saving").

When on, the "Freeze Display" check box removes the
Tracker editor
from
the screen and replaces it with "Frozen". This releases more processor time, advantageous when multitasking. The screen is automatically frozen when it isn't at the front if
Settings menu

/Auto-Freeze Screen is on.

The four larger boxes at the bottom of the display showing the waveform currently being output by each of the Amiga's sound channels. The displays take up quite a lot of processor time when using a standard 68000 processor, so they may be turned off in the
Settings menu
. When enabled,
the line in the center of them is blue: when disabled, it is white.

1.60 Player Commands

Player commands provide a way of composing music that sounds more interesting. They consist of numbers that are attached to a note, and generally they perform effects on the notes they are attached to (for example, pitch / volume sliding etc.). Some commands control various functions not directly applicable to notes: for example, changing the song's tempo, jumping to a new playing sequence entry, or sending a MIDI message to a MIDI device.

The data byte allows you to control the command's intensity, depth etc. Both the command number and data byte are in
HEXADECIMAL
!!!

They are entered in the command digits using the Tracker editor, by simply positioning the cursor on the digit and typing a new number (with editing on). In addition, the left command digit can be set to 1 by positioning the cursor over the right command digit, holding down Alt and pressing the right command digit's value. For example, Alt-9 inserts command 19.

```
C - 2  1 2 3 4
       \ | \ |
command digits  \|
                 data byte
```

Advance Line Off and Advance Cursor Right may help in editing the command digits. (See the
Keyboard Options Window
).

The player commands can be split into four groups:

Commands 0 - 9
(These topics contain descriptions of each

Commands A - F
player command)

Commands 11 - 1F

MIDI Commands
Before you read the descriptions, make sure you understand timing ↩
pulses

```
(see the
                Upper Screen
                ) !!
```

1.61 Commands 0 - 9

```
                Command 0:  ARPEGGIO                (
                MIDI
                : controller value)
-------------------------------------------------------------
```

This command changes the pitch of the note quickly (once every timing pulse). It can be used to create "chords" or special effects. If you've listened to music made with the Commodore 64, you MUST have heard arpeggios!

The pitch is changed between three different pitches during one note:

```
        Pitch 1:  The original note
        Pitch 2:  Pitch 1 + the first data byte digit halfsteps up
        Pitch 3:  Pitch 1 + the second data byte digit halfsteps up
```

Note: Pitch 3 is played first, then pitch 2, pitch 1, pitch 3, pitch 2 etc. (the number of pitches for each note depends on the secondary tempo).

For example, to create a C major arpeggio:

```
        Pitch 1:  C-2   (for example)
        Pitch 2:  E-2 = 4 halfsteps higher than C-2
        Pitch 3:  G-2 = 7 halfsteps higher than C-2

This produces:  C-2 10047
                --- 00047
                --- 00047 and so on... Note that the data byte with a
                          blank note continues the arpeggio.
```

The data byte for a minor chord would be 37.

Arpeggios sound better with some instruments than others

```
(Note that this works differently with MIDI, see
                MIDI Commands
                )


Command 1:  SLIDE UP                (
                MIDI
                : pitchbender up)
-------------------------------------------------------------
```

This command slides up the pitch of the current track.

It actually works by decreasing the period of the note the amount of the databyte every timing pulse. Sounds rather technical?? Yes.. but a detailed description is not really necessary, since slides can be made automatically: see

```
                Edit Menu
```

```
                / Pitch Slide / Type 2.

If you use this function for special effects, experimentation is the key...
For example:
             A-1 10000
             --- 00000
             --- 0010F <- slide up a bit


Command 2:  SLIDE DOWN             (
                MIDI
                : pitchbender down)
------------------------------------------------------------
Same as command 1, except slides down.


Command 3:  PORTAMENTO             (
                MIDI
                : set pitchbender)
------------------------------------------------------------
Another slide command, with which you can create perfect slides more
easily than with commands 1 and 2. The difference is that commands 1 and 2
replay the note they slide to: command 3 doesn't replay the note.

The data byte is the slide speed. An example is the easiest way to explain
this:

    C-2 50000 <- Note C is played
    --- 00000
    E-2 50305 <- This note isn't played! Instead, the slide target is set
    --- 00300    to E-2 with a slide speed of 5
    --- 00300 <- When the speed is zero, the previous speed is used
    --- 00306 <- The speed may be changed during a slide

This example would slide from C-2 to E-2, but the slide stops EXACTLY when
a pitch of E-2 is attained (with commands 1 and 2 you can slide beyond the
note).

Again, slides can be created automatically in
                Edit
                 / Pitch Slide / Type 1.


Command 4:  VIBRATO                (
                MIDI
                : modulation wheel)
------------------------------------------------------------
Rapidly increases and decreases the note's pitch. The first digit of the
data byte is the vibrato speed, the second is the vibrato depth. If either
digit is zero, the previous speed and/or depth is used.

The higher the digit's value, the greater the speed / depth. (Remember that
the digits are in hexadecimal: values 0 - 9 and A - F can be used, giving
a total of 16 possible values for each digit).


Command 5:  SLIDE AND FADE         (
```

MIDI
: controller number)

This command combines commands 300 and Dxx. The slide speed is the previous speed entered with command 3, and the fade speed is the data byte.

```
C-1 10000
D-3 10303 <- slide at speed 3
--- 00300 <- continue sliding
--- 00502 <- continue sliding and fade at speed 2 (see command D later)
--- 00502
```

Command 6: VIBRATO AND FADE

Combines commands 400 and Dxx. Again, the vibrato speed is the previous speed entered with command 4, and the fade speed is the data byte.

Command 7: TREMOLO

This command is a kind of "volume vibrato". The first data byte digit is the tremolo speed, the second is the depth. The depth must be quite high before the effect is audible (try A - F).

The higher the digit's value, the greater the speed / depth.

Command 8: SET HOLD/DECAY (

MIDI
: set hold only)

This command must be located on the same line as a note. The command sets the hold and decay values for the note (see
Instrument Parameters
).

The first digit is the decay value, the second is the hold value.

```
C-3 30824  (decay = 2, hold = 4)
-|- 30000
-|- 30000
--- 00000
```

Command 9: SECONDARY TEMPO (

MIDI
: no action)

Sets the secondary tempo (the number of timing pulses per note). The data byte must be $01 - $20.

(See also
Player Commands
,
A - F
,

11 - 1F
, and
MIDI Commands
)

1.62 Commands A - F

Command A: VOLUME SLIDE (
MIDI
: polyphonic aftertouch)

This is exactly the same as command D, for Sound/Noise/Protracker compatibility. However, please use D instead of this.

Command B: POSITION JUMP

Allows you to make songs that have a beginning, which is played only once, and another part, which is repeated continuously. The command causes a jump to the
playing sequence
number given by the data byte. If the data byte is zero, the song is played from the first playseq entry.

Note that when more than one playing sequence is defined, the specified entry in the CURRENT playing sequence is jumped to. At present, no command exists to jump to an entry in the section list.

Example: --- 00B02 <- start playing from playseq number 003

Command C: SET VOLUME

You can override the default volume of the instrument with this important command.

For example, "A-3 40C20" is played with volume 20.

There are 65 volume levels (0 - 64), 0 = silent, 64 = maximum. The data byte may be either 00 - 64 or $00 - $40 (decimal or hex: see
Song Options
).

It is also possible to change the volume of an already played note:

```
A-3 40000
--- 00000
--- 00C10 <- change volume to 10
```

In addition, you may actually set the default instrument volume. The value MUST be in HEX!, and is between 80 and C0. 80 = volume $0, C0 = volume $40 (hex). In other words, add 80 to the normal volume in hex.

Note that setting default instrument volumes can cause trouble in multi-modules, since all the songs share the same set of instruments. So it is

recommended that default instrument volumes are only changed in non-multi-modules.

Command D: VOLUME SLIDE (MIDI : channel pressure)

You can increase / decrease volume smoothly with this command. The first data byte digit is the amount of volume increase ("crescendo"), the second digit is the amount of decrease ("decrescendo"). If crescendo is zero, decrescendo is performed: otherwise, only crescendo is performed.

```
C-2 30C40
--- 00D01 <- a bit quieter
--- 00D01 <- even quieter
--- 00D20 <- and crescendo back to original volume
```

In this command the volume is changed every timing pulse. So if the secondary tempo was 6, a decrescendo value of 1 would decrease the volume by 6. The example above would look like this using C commands (except it doesn't sound as smooth):

```
C-2 40C40 (volumes are decimal in this example)
--- 00C34 <- -6
--- 00C28 <- -6
--- 00C40 <- +12
```

Command E: SYNTH JUMP (MIDI : pan control)

This command only applies to synth/hybrid (and MIDI) instruments. It is used to trigger a jump in the waveform sequence. The data byte is the jump destination (line number).

```
C-4 40000 <- should be a synth/hybrid instrument
--- 00000
--- 00E05 <- causes a jump to line #5  (see
             Synthsound Programming
             )
```

Command F: TEMPO/MISC

Command F has many different actions depending on the data byte.

If the data byte is 00, it causes an immediate jump to the next entry in the playing sequence (or the beginning of the block if you are only playing the current block). This function is better to implement by making the block shorter, as it takes less memory, so it mainly exists for Tracker compatibility.

```
C-2 40F00 <- this is the last note of the current block
```

When the data byte is $01 - $F0, the command changes the primary tempo (the

time between timing pulses).

If the new tempo is 01 - 0A, it is compatible with Trackers, but you should use command 9 instead of this command as it's directly Tracker-compatible (but make sure the primary tempo is set to the default 33).

```
    E-3 60FF0 <- quickest tempo (240 decimal)
    --- 00000
    --- 00F0B <- slowest (11 decimal)
```

Data bytes FF1 - FFF are reserved for special actions, some of which are currently in use:

FF1 causes the same note to be actually played twice. In this way it's possible to create fast rhythms. It's identical to command 1F03. With a secondary tempo of 6:

```
        C-3 20FF1 is the same as C-3 20000
                                 C-3 20000 with double tempo (i.e. 3)
```

FF2 plays the same note only once, but it is not started immediately. It's identical to command 1F30. Again with a secondary tempo of 6:

```
        C-3 20FF2 is the same as --- 00000
                                 C-3 20000 with double tempo
```

FF3 works like FF1 except the note is played three times (very quick).

[Again with a secondary tempo of 6:

```
        C-3 20FF3 is the same as C-3 20000
                                 --- 00000
                                 --- 00000
                                 C-3 20000
                                 C-3 20000
                                 C-3 20000 with sec. tempo = 1.
```

(Through tests with pri. tempo = 11). Is this correct??]

FF4 delays the note one-third of a line.

FF5 delays the note two-thirds of a line. FF4 and FF5 can be used, for example, to create triplets:

```
        C-2 10000  Here, the three notes will be evenly spaced throughout
        D-2 10FF4  the four lines (they'll have a length of one-and-a-third
        E-2 10FF5  lines each)
        --- 00000
```

They only work accurately when the secondary tempo is divisible by 3 (3, 6, 9 etc.).

FF8 turns the low-pass filter off (see the
Song Options Window
)

FF9 turns the low-pass filter on

FFD (doesn't work with MIDI) causes the pitch of the channel to be set to the pitch of the new note, but the new note is not replayed.

```
C-1 20000 <- play note
--- 00000
C-2 20FFD <- don't replay the note, just set the pitch to C-2
```

This is especially useful in playing long samples or samples with a loop set (like strings, choirs etc.), as the undesirable "click" that you can sometimes hear when playing a new note is eliminated.

FFE stops playing immediately. If you want to make a song which only plays once, put this command at the end of the song. It can be easily inserted by clicking STOP with the Shift key held.

FFF stops the note on the current track. Is almost like C00 with Amiga samples, but while C00 sets the volume of the note to zero, FFF turns the note off completely (there is a subtle difference :).

(See also
Player Commands
,
0 - 9
,
11 - 1F
, and
MIDI Commands
)

1.63 Commands 11 - 1F

Command 11: SLIDE PITCH UP ONCE

Whereas command 1 slides the pitch smoothly, this command only changes it once per note (for greater accuracy).

```
C-2 31105 <- slightly above C-2
```

To techies: with this command, you may play a note at any period value you wish. For example, C-2 is 428. To play at period 431, simply enter "C-2 31103".

Command 12: SLIDE PITCH DOWN ONCE

Equivalent to command 11, except slides down.

Command 14: PT-COMPATIBLE VIBRATO

In Protracker, the vibrato command was changed from NoiseTracker. The maximum depth was halved to give greater accuracy. This command is compatible with the new Protracker vibrato (loading Protracker songs automatically changes the PT vibrato command to this command 14).

```
Command 15:  SET FINETUNE
-------------------------
```

Overrides the default finetune value of the instrument.

Since these are hexadecimal numbers, negative numbers must be expressed as:

```
    -1 = FF        -3 = FD        -5 = FB         -7 = F9
    -2 = FE        -4 = FC        -6 = FA         -8 = F8

    C#3 21503 <- finetune = +3
    D-2 315F8 <- finetune = -8
```

```
Command 16: LOOP
----------------
```

This interesting command enables you to construct a loop within a block. For example:

```
    ...
    004 C-3 11600 <- data byte = $00: mark loop beginning
    005 D#2 10000
    006 --- 11603 <- data byte = $03: loop three times
    ...
```

This example would play lines 004 - 006 three times before continuing. You can't nest loops!

```
Command 18:  CUT NOTE              (
                MIDI
                : no action)
-----------------------------------------------------
```

Almost like hold (command 8), except it sets the volume to zero instead of actually switching the note off. This is Protracker-compatible.

```
Command 19:  SAMPLE START OFFSET    (
                MIDI
                : no action)
-----------------------------------------------------
```

When playing a sample, this command sets the starting byte in steps of 256 bytes (= $100 hex). Useful for speech samples.

```
    C-2 11904 <- play the sample starting at byte $400 = 1024
```

```
Command 1A:  SLIDE VOLUME UP ONCE   (
                MIDI
                : no action)
-----------------------------------------------------
```

Allows you to make slow volume slides, since the volume is slid only once per line (on the first timing pulse of each line).

```
    D-2 11A01 <- a looped string, perhaps, default volume 0
    --- 01A01
    (and so on..)


Command 1B: SLIDE VOLUME DOWN ONCE  (
                MIDI
                : no action)
-----------------------------------------------------
Equivalent to 1A except slides down.


Command 1D: JUMP TO NEXT PLAYSEQ ENTRY
--------------------------------------
This command is like F00, except that you can specify the line number of
the first line to be played. The line number is (as usual) given in HEX.

    --- 01D0A <- next playseq entry, start at line 10 (skip lines 000-009)


Command 1E: DELAY LINE
----------------------
Plays the commands of the current line the specified number of times.
Doesn't replay the notes.

    C-2 10000 --- 00000
    --- 00101 --- 01E06 <- replay the commands of this line six times


Command 1F: NOTE DELAY AND RETRIGGER
------------------------------------
Gives you accurate control over note playing. You can delay the note any
number of timing pulses, and initiate fast retrigger. The first data byte
digit is the note delay value, the second one is the retrig value.

    C-2 11F20 <- delay 2 timing pulses

     => pulse  0  ---
               1  ---
               2  C-2
               3  ---
               ...

    C-2 11F02 <- retrig every second pulse

     => pulse  0  C-2
               1  ---
               2  C-2
               3  ---
               4  C-2
               ...

    C-2 1FF22 <- delay 2 pulses THEN retrig every second pulse

     => pulse  0  ---
               1  ---
               2  C-2
```

```
               3  ---
               4  C-2
               ...
```

    Command 0FF1 is equal to 1F03, and 0FF2 to 1F30.

(See also
Player Commands
,
0 - 9
,
A - F
, and
MIDI Commands
)

1.64 MIDI Commands

Please read the other command explanations (see
Player Commands
) before
reading this. This topic is like an "erratum" for MIDI, in that it documents the changes to the other command documentation required for MIDI use.

Commands B, F, 16, 1D, 1E, and 1F all work identically with MIDI to Amiga instruments. Commands 15, 18, 19, 1A, and 1B have no effect when used with MIDI.

If you are unfamiliar with any of the terms used in this topic, please consult your MIDI device's manual.

Command 0: CONTROLLER VALUE

See command 5 for a description.

Command 1: PITCHBENDER UP

This command "turns" the pitchbender 8 $\times$ data byte steps up on each timing pulse. However, automatic slide making (unfortunately) cannot be used here. Because the actual range of the pitchbender may be different for different MIDI devices, you must find the right value by experimenting.

When a new note is played, the pitchbender is not reset automatically. To reset it, use this command with a data byte of 00.

```
    G-2 L01FF <- turn pitchbender up very quickly
    --- 00000
    --- 00100 <- then reset the pitchbender
```

Command 2: PITCHBENDER DOWN

As command 1, except turns the pitchbender down.

```
Command 3:  SET PITCHBENDER
---------------------------
```

With this command you may set the pitchbender to an exact value, instead of sliding as in commands 1 and 2. The data byte is the pitchbender value, expressed as a signed hexadecimal digit (aargh!! ;-)

```
        $00       = center position
        $80 (-7F) = smallest value
        $7F       = largest value

    C-2 30000
    --- 0037F <- pitchbender to maximum value
    --- 00300 <- reset
```

```
Command 4:  MODULATION WHEEL
----------------------------
```

Affects the modulation wheel of the current channel. The data byte can be 00 - 7F: 00 = no modulation, 7F = maximum. Values 80 - FF are reserved for future expansion (i.e. won't work ;).

```
Command 5:  CONTROLLER NUMBER
-----------------------------
```

This command, in conjunction with command 0, allows you to change any MIDI controller (command $Bx cc vv, where cc = controller number, vv = value).

First you set the number of the controller you wish to change with command 5. Then you can select the value with command 0. Subsequent uses of command 0 will affect the controller previously set with command 5. Remember that each MIDI channel has its own controller number.

If you need to use a controller value of $00, you can't use "00" as a data byte because command "0000" means "do nothing". Instead, you need to use "80". Acceptable controller numbers and values are $00 - $7F.

For example (assuming instrument 3 is set to MIDI channel 1):

```
    C-2 30000
    --- 00507 <- controller $07 = volume, according to the MIDI standard
    D-2 3007F <- set max. volume (7F), command $B0 $07 $7F is sent
    --- 00000
    F-3 30001 <- small volume ($01)
    --- 0055C <- select controller $5C (tremolo depth)
    G-4 30080 <- set to 0 (note: $80 = $00)
```

```
Command 8:  SET HOLD ONLY
-------------------------
```

Just to underline that decay cannot be used with MIDI instruments. (This is because with MIDI, the volume of an already played note cannot be altered).

Command A: POLYPHONIC AFTERTOUCH

Changes the polyphonic aftertouch of the most recent note. The value should be 00 - 7F.

```
    C-3 40000
    --- 00A30 <- aftertouch $30 (remember, hex!)
    --- 00000
    --- 00A00 <- aftertouch $00
```

Command C: SET VOLUME

Again, just to underline that the volume of a note cannot be changed after it has been played (as it can with Amiga samples).

Command D: CHANNEL PRESSURE

This command sends a channel pressure (channel aftertouch) message using the channel in which the most recent note was sent. The databyte should be $00 - $7F.

Command E: PAN CONTROL

Controls the stereo location of the note. The data byte can be $00 - $7F.

```
    left        mid         right
     |           |            |
    00          3F           7F
```

Command F: TEMPO/MISC

Just two additions for MIDI use:

FFA sends the "hold pedal on" command.

FFB sends the "hold pedal off" command.

Command 10: SEND MIDI MESSAGE

Sends a MIDI message, created using the MIDI message editor. The data byte is the message number. Note that with this command the first message is number 0, so you need to subtract one to convert the message number from the message editor for use with this command.

```
    C-2 11000 <- send the first message, then plays note C-2 (messages are
                 always sent before notes)
```

MIDI timing pulses are sent immediately even if a message dump is going on.

Command 13: SET PITCHBENDER WITH NOTE

Like command 3, but can also be used when there's a note next to the command.

Command 1C: CHANGE MIDI PRESET

Changes the MIDI preset number of the current instrument. As with all commands which modify the song parameters, you should be very careful when using this command in multi-modules (or even don't use it at all in multi-modules).

(See also
Player Commands
,
0 - 9
,
A - F
, and
11 - 1F
)

1.65 Keyboard Shortcuts

"Keyboard shortcuts" are combinations of keys used to carry out the equivalent of a mouse operation. The mouse operation may be selecting a menu item, clicking a gadget etc. Hence you are "taking a shortcut" by using the keyboard instead of using the mouse.

Perhaps the simplest form of keyboard shortcuts are menu item shortcuts. These are displayed in the menu itself, as a strange-looking "A" and a letter. All menu shortcuts are accessed by holding down the Right Amiga key and pressing the appropriate key. The "A" symbol represents the Right Amiga key, and the letter represents the appropriate key. Note that the menu shortcuts can only be used when the main screen is active (that is, when no windows are active).

Shortcuts can also be attached to gadgets in windows and on the main screen. These shortcuts are accessed by holding down the Left Alt key and pressing the appropriate key. This time, the appropriate key is represented by an underlined letter in or beside the gadget that the shortcut acts on. This type of shortcut can only be accessed when the window or main screen containing the gadget is active. The effect of shortcuts on the various types of gadget in the user interface can be found in Gadget Shortcuts.

Other shortcuts are not visually represented on the OctaMED screen, but have to be remembered by the user. A full list of shortcuts is provided in the following topics:

1.66 Menu Item Shortcuts

All keys listed have to be pressed with the Right Amiga key held. Note that you may only use these shortcuts when the main screen is active.

[V4 upgraders: all shortcuts are *NEW* aside from cut/copy/paste track]

A	Open Input Map Editor window
B	Open Block Properties window
C	Copy track
D	Delete file
E	Expand / Shrink
F	Discard copy buffer (mnemonic: Free)
G	Open MIDI Message Editor window
H	Open Highlight Options window
I	Load instrument(s)
J	Open Song Options window
K	Open Keyboard Options window
L	Open Sample List Editor window
M	MIDI Active on/off
N	New project
O	Open project
P	Open Print Options window
Q	Quit OctaMED
R	Open Relative Track Volumes window
S	Open Save Options window
T	Open Transpose window
U	Input Active on/off
V	Paste track
W	Spread notes
X	Cut track
Y	Open Programmable Keys window
Z	Swap track with copy buffer
1	Ext Sync on/off
2	Send Sync on/off
3	Send Active Sensing on/off
4	Send Out Input on/off
5	Read Key Up's on/off
6	Read Volume on/off
[	Tracker editor
]	Notation editor

```
    '       Open Notation Control window
    -       Send MIDI reset
    =       Note echo
    ;       Open Mouse Options window
    ,       Set annotation text
    .       Open Save Timer window
    <       Local Control on
    >       Local Control off

Note that the following Left Alt shortcuts also act as menu item shortcuts
(with the main screen active):

    B       Open Block List window
    E       Open Sample Editor window
    G       Open Song Selector window
    I       Open Instrument Parameters window
    Q       Open Playing Sequence window
    Y       Open Synthetic Sound Editor window

Other menu item shortcuts (excluding settings) are documented in the other

                keyboard shortcut
                 topics.
```

1.67 Gadget Shortcuts *NEW*

```
                The following table describes the effects of "Left Alt" shortcuts  ↩
                   on the
various types of gadgets, both with and without the Shift key held. (Note
that the words "button" and "gadget" essentially mean the same).

(See
                User Interface
                 for a description of the gadget types, and
                Keyboard
                Shortcuts for more information on keyboard shortcuts)


 Gadget Type   | Effect on holding L Alt | Effect on holding Shift + L Alt
---------------+-------------------------+---------------------------------
Action button  |     Action executed     |          As unshifted
               |                         |
Check box      | Box checked / unchecked |          As unshifted
```

1.68 Editing Shortcuts

```
                These shortcuts are used in editing with the
                Tracker editor
                .

      Esc             Editing on/off
*NEW* Shift-Esc       Chord on/off
```

```
      ~               Space on/off

      Del             Delete note or number under cursor
      Shift-Del       Delete note and command numbers
      Alt-Del         Delete only command numbers

*NEW* Left Amiga-Del  Delete chord. When L-Amiga is held down, every time
                      you press Del the note under the cursor is deleted
                      and the cursor moves one track to the right. When
                      L-Amiga is released, the cursor advances (in the way
                      defined in
                Keyboard Options
                ).

      A               Inserts hold symbol (-|-)
      Return          Also inserts hold symbol (-|-)
      Shift-Return    Inserts hold symbols to all tracks of the previous
                      chord.

*NEW* F               Insert / play note at default pitch

      Backspace       Delete note and move following notes up
      Shift-Backsp    Insert empty note slot
      Alt-Backspace   Delete current track
      Alt-Shift-Bksp  Insert new track

      Shift- 0 - 9    Enter programmable key 0 - 9 (Note: with Caps Lock
                      on, progkeys may be entered without holding the Shift
                      key)
      Shift-Ctrl-0-9  Pick note under cursor as programmable key 0 - 9

      Tab             Highlight current line

*NEW* Ctrl-J          Join block with next
*NEW* Shift-Ctrl-J    Split block at cursor

*NEW* Ctrl-O          Create volume slide
*NEW* Shift-Ctrl-O    Create generic (hexadecimal) volume slide
*NEW* Ctrl-T          Create type 1 slide (using command 3)
*NEW* Shift-Ctrl-T    Create type 2 slide (using commands 1 and 2)

*NEW* Shift-R.Alt-Z   Swap block with copy buffer
*NEW* Shift-R.Alt-X   Cut block
*NEW* Shift-R.Alt-C   Copy block
*NEW* Shift-R.Alt-V   Paste block

*NEW* Ctrl-Z          Erase range
      Ctrl-X          Cut range
      Ctrl-C          Copy range
      Ctrl-V          Paste range
*NEW* Shift-Ctrl-V    Paste to selected tracks

*NEW* Ctrl-B          Range current track
*NEW* Shift-Ctrl-B    Range current block

*NEW* Ctrl- <         Swap note under cursor with following note, taking
                      account of the current spacing value
```

```
*NEW* Ctrl- >          Swap notes on adjacent tracks

*NEW* Ctrl-K           Kill notes to end of track
*NEW* Shift-Ctrl-K     Kill notes to end of block
*NEW* Alt-Ctrl-K       Kill notes to end of block and actually remove the
                       deleted part of the block. In other words, the
                       current line becomes the last line of the block.
```

1.69 Cursor Movement Shortcuts

```
                These shortcuts allow cursor movement in the
                Tracker editor
                . The cursor
keys move the cursor one place up/down/left/right.

      Alt-<left>          Cursor to previous track
      Alt-<right>         Cursor to next track

      Ctrl-<left>         Previous screenful of tracks
      Ctrl-<right>        Next screenful of tracks

*NEW* Shift-Ctrl-<left>   Cursor to track 0
*NEW* Shift-Ctrl-<right>  Cursor to last track

      Shift-<up>          Previous block
      Shift-<down>        Next block
      Left Alt-<up>       First block  (Can't use R.Alt to avoid accidental
      Left Alt-<down>     Last block    jump when using Alt-<left>/<right>)

*NEW* Ctrl-[              Previous song
*NEW* Ctrl-]              Next song / Add song
*NEW* Shift-Ctrl-[        Delete last song
*NEW* Shift-Ctrl-]        Add song with no requester

      F6                  Cursor to first line of block
      F7                  Cursor to second quarter of block
      F8                  Cursor to middle of block
      F9                  Cursor to last quarter of block
      F10                 Cursor to last line of block

*NEW* Alt-Ctrl-<left>     Go to where sample previously appeared in the
                          song. The sample number is taken from either the
                          number under the cursor, or (if that is
                          "--- 00000") from the current instrument number.
*NEW* Alt-Ctrl-<right>    Go to where sample next appears in the song
```

1.70 Other Shortcuts

```
                    Shift-Alt-Space     Play song        [ You may also use the  ↩
                       Left Alt
      Shift-Space         Continue song      shortcuts underlined in the
      Amiga-Space         Play block         playing gadgets ]
```

```
      Alt-Space           Continue block
      Space bar           Stop playing

      Ctrl-Space bar      Reset MIDI presets / pitchbenders / mod. wheels

      Shift-<left>        Previous sample
      Shift-<right>       Next sample
      Alt-Shift-<left>    16 samples backward
      Alt-Shift-<right>   16 samples forward
*NEW* Shift-Ctrl- <       Previous free sample slot
*NEW* Shift-Ctrl- >       Next free sample slot

      F1 - F5             Select octaves 1+2 - 5+6 in normal mode,
                          3+4 - 7+8/8+9/9+A in MIDI mode

*NEW* Ctrl-I              Insert new block
*NEW* Shift-Ctrl-I        Insert new default block
*NEW* Ctrl-N              Append new block
*NEW* Shift-Ctrl-N        Append new default block
*NEW* Ctrl-D              Delete current block
*NEW* Shift-Ctrl-D        Delete last block

*NEW* Ctrl-S              Save IFF instrument
*NEW* Shift-Ctrl-S        Save raw instrument
*NEW* Ctrl-G              Flush current instrument
*NEW* Shift-Ctrl-G        Flush all unused instruments

      Ctrl-A              Automatic Advance Down on/off
      Ctrl-F              Display free memory

*NEW* Alt-~               Set spacing value to length of current range - 1.
                          E.g. marking a range from 000 - 002 sets spacing
                          to 2. It's logical to subtract 1 since with a
                          spacing of 2, the cursor skips from line 000 to
                          002 which is 3 lines long).
```

The following shortcuts apply to the numeric keypad.

```
      Ctrl-8              Scroll playing sequence up
      Ctrl-2              Scroll playing sequence down
      Ctrl-4              Decrease the current playseq entry
      Ctrl-6              Increase the current playseq entry
      Ctrl-7              Top of playseq
      Ctrl-1              Bottom of playseq
      Ctrl-5              Insert current block to playseq
      Ctrl-0              Insert block 000 to playseq
      Ctrl-.              Delete current playseq entry
```

Note that with the Caps Lock on, the playing sequence can be edited without holding down the Ctrl key.

The non-shifted functions of the keypad are listed in
Keyboard Options
.

1.71 Introduction

Welcome to OctaMED Professional V5.0! The "MED" in "OctaMED" stands for "Music EDitor", and that's exactly what OctaMED is. With the program you may compose music for games, demos, animations and presentations, or simply use the program as a stand-alone editor.

There is little previous knowledge you need to use OctaMED, but a general familiarity with the Amiga is helpful. You should know the basic mouse-using terms "click" and "drag", know about using windows and menus, know the operation of the ASL file requester, and be able to copy and format disks and create directories. If you are unfamiliar with any of these, please consult your Amiga's manual. Communication with the program is covered in the User Interface topic.

You must also remember which processor your Amiga uses. The A1200 contains a 68020 processor, and the A3000 and A4000 either a 68030 or 68040. Other Amigas (without accelerator boards fitted) use 68000 processors. In addition to this, a few functions in OctaMED are selected with the mouse using a technique called "shift-clicking". This simply involves holding down the Amiga's Shift key while pressing and releasing the left mouse button quickly.

Before you begin using OctaMED, you must make a copy of the program disk and store the original disk in a safe place. This serves as a precaution in case your copy of OctaMED becomes corrupt. The original disk should only be used to make further copies.

A brief overview of the program

OctaMED is used to create "songs" (which are also known as "modules"). Each song consists of small pieces of music called "blocks", which are linked together by creating a list of blocks arranged in the order in which they should be played. Blocks can be played in any order, and any number of times. In this way a song is broken down into more manageable pieces; and if a song contains parts that are repeated, you need only create the duplicated section once, and then tell the computer to play it as often as required.

Blocks are usually edited using the Tracker editor, in which the music is represented by note names and numbers. In this form, the music is quite fast and convenient to edit (when you get used to it!), but it has limited use when printed since no-one could play it (although printing is still possible).

For those who read music and wish to compose using the more traditional format of notes placed on a stave, a notation editor is provided for this purpose. However, the Tracker editor is still very important so learning to

use it is essential.

Usually songs are played using the Amiga's internal stereo sound chip, but you may also use a MIDI keyboard. For sound chip use, the instruments used in the song usually consist of digitized sounds known as "samples". A sample can consist of any sound at all: it could be a single note, a chord, speech, sound effects, anything! Using OctaMED and a "sound sampler" (which you must buy separately), you can create new samples by simply connecting the sound source to the sampler. Alternatively you can use the many thousands of samples already available, which are obtained through various distribution channels such as the public domain or commerical companies. Some samples are included on the OctaMED disk to get you started.

OctaMED can be thought of as a player of samples in a predetermined sequence at predetermined pitches on predetermined sound channels. (Of course, you - the user - determine these factors). Since samples are played in a set sequence, programs like OctaMED are often referred to as "sample sequencers". Different pitches are produced by simply playing the samples at a quicker or slower speed: the quicker the speed, the higher the pitch. These pitches of samples are called "notes" (no matter whether the sample really is a single note or instead a chord, speech etc.).

OctaMED has a special function for use with samples that is virtually unique in programs of its type. Normally the Amiga's sound chip can play only four samples simultaneously, but in OctaMED you can play up to eight samples at once. Although this may sound rather attractive, there is a small price to pay in sound quality and in various restrictions (which are documented in
5-8 Channel Mode
). (The "Octa" in OctaMED's name refers to the eight simultaneous samples).

(Remember, click on any boxed text to see more details on that topic. In addition, pressing Return chooses the topic highlighted in blue).

How are songs made?

1. Load instruments

There can be up to 63 instruments in a song, and they are numbered 01 - 1V. The numbering works as follows: 01, 02, 03 ... 09, 0A, 0B ... 0V, 10, 11, 12 ... 19, 1A, 1B ... 1V.

Just below the title bar of the OctaMED screen is a small box containing the current sample's number, followed by a text box containing the current sample's name. The previous or next instrument can be selected by holding the Shift key down and pressing the left or right cursor (arrow) key respectively.

A sample can be loaded into the current instrument slot by either typing its filename into the text box, or clicking the small gadget immediately to the left of the text box: you may now choose its filename using the
file requester
. The instruments on your disks may

also be organized into a list known as the
sample list
for easy
loading.

2. Set block size, number of tracks etc.

See the
Tracker Editor
for more information on this.

3. Set instrument parameters

Instrument characteristics such as tuning and volume are set in the

Instrument Parameters window
.

4. Edit blocks and add new blocks

As previously mentioned, blocks are edited predominantly using the Tracker editor. New blocks can be created using the
Block List window
,
or by using
Block Menu
/New. (This means using the New item in the Block menu).

5. Link blocks together

The list of block numbers used to order the playing of a song is created in the
Playing Sequence window
.

6. Play song

The song playing gadgets are located on the
upper screen
. You may play the whole song or just the current block, or continue the song or block from the current position.

7. Save song

There’s no point in creating a masterpiece if it can’t be saved! Saving is achieved using the
Save Options window
, where you may select what format to save the song in, whether the song is to be compressed etc.

Multi-modules

"Multi-modules" are projects containing more than one song. Each song shares the same set of instruments. This allows you, for example, to compose different songs for each level of a game, without having to load or keep the same instrument in memory more than once.

Multi-modules are also very useful when editing just one song, as you can treat one song in the multi-module as "workspace", much like Deluxe Paint's "spare screen" option. You may design and compose in one song, then cut and paste to another.

Songs are added by using either the relevant gadgets on the upper screen or the Song Selector window.

OctaMED can automatically remap instruments while loading. This feature can save you a lot of work. If you have one or more songs already in memory, and you load an additional song, a "Remap instruments?" requester will appear.

If you click "No" in the requester, all previous instruments in the entire multi-module will be lost and the instruments of the new song will be loaded. This could be used, for example, to use the new, different instruments with the other songs in the module.

But if you reply "Yes": firstly, the instruments of the new song will be loaded to empty slots, i.e. instruments already in memory will be preserved; secondly, the instrument numbers of the loaded song will be remapped so that they point to the new instrument places. This means that the several sets of instruments used in the several songs can be contributed to one large overall set of instruments.

Some other features of OctaMED

* Friendly and reasonably simple appearance (considering the program's complexity!): see the User Interface
    * Numerous editing operations, including Cut/Copy/Paste as found in wordprocessors, note transposition etc. (see Block Menu, Track Menu, and Edit Menu)

* Sample waveforms can be edited and digitized in the sample editor

```
          ,
  and simple synthetic instruments may be designed using the

          synthetic sound editor
              * The relative volume of each track and the overall song  ↩
                 volume can be
  altered in the
          Track Volumes window
              *
          MIDI
           may be used, with up to 64 notes played simultaneously and many
  MIDI settings and operations (including a
          MIDI Message editor
          )
```

* Complete PowerPacker and SFCD-compression load support: OctaMED can load and decrunch any PowerPacked or SFCD-compressed file. (The only file you can't compress, unfortunately, is this one: OctaMED.help).

  OctaMED has built-in compression facilities for songs, but currently not for other files. To compress other files, you must use either the PowerPacker program (from UGA software, distributed by various companies) or the PowerPlayer Music Cruncher (for SFCD-compression, included on e.g. Fish 769).

  Requires powerpacker.library for PowerPacker, and lh.library for SFCD. Lh.library is not included on OctaMED's distribution disk, but it forms part of the PowerPlayer distribution archive on e.g. Fish disk number 769 (ask your favourite public domain library).

* Numerous

```
          keyboard shortcuts
           exist. Note the conventions used: for
  example, "Ctrl-A" means "hold down the Ctrl key and press the A key";
  also, the cursor (arrow) keys are represented by <left>, <right>,
  <up> and <down>.
```

In order to learn how to use the program, we suggest that you study the

```
          Main Screen
           topics first, and then perhaps the
          User Interface
           topic. Then
```

simply experiment! If you find something you don't understand, just press the Help key and select the appropriate topic. For example, if you don't quite understand the function of the Input Map Editor window, select "Windows" from the contents page then select "Input Map Editor" from the Windows topic.

(Please ignore the occasional word "*NEW*" that you might find: it simply indicates to upgraders from V4 which features are new to V5.0).

We hope you will find this program useful and enjoy it!

P.S. In this help file (and in many other computer documents and bulletin boards) you may come across odd-looking symbols, often consisting of a

semicolon or colon, an optional hyphen and a closed bracket. To understand these, just tilt your head 90 degrees to the left :-)

1.72 5 - 8-Channel Mode

(Parts of this topic are really intended as a reference for more experienced users of OctaMED, so don't worry if you don't understand everything at the moment!)

The Amiga has four stereo sound channels in its sound chip, and through each channel one note can be played at once.

5 - 8-channel mode works by mixing two samples in real time and then outputting them through one sound channel. This takes up a lot of the processor's power, and the mixing process reduces the sound quality (causes distortion). The distortion can be reduced using High Quality Mode or (as a last resort ;) by using the audio filter (both selected in Song Options, and channel mode changing is also contained in this window).

The processor load that 5 - 8-channel playing causes, and some technical reasons set some limitations to playing in these modes:

* Different playing speed selection. Use the secondary tempo as usual, but use primary tempo values 1-10.

* Synthetic / hybrid sounds can't be used

* All equalizers are disabled

* All MIDI features are disabled

* Instrument default volume is ignored, as are the track and master volumes

* Limited sample loop length, only in a minimum of 200-byte steps (when the primary tempo is 1). Every time the primary tempo is increased by one, the loop length byte-steps increases by 20. So with a primary tempo of the maximum 10, the length is set in 400-byte steps.

In addition to this, samples should be "halved". This means that each

sample's volume should be half of its normal volume, so that they can be mixed with the minimum of distortion. The halving is done automatically when changing channel mode (answer "Halve" in the requester).

The sound channels that play these mixed samples are called "split channels". In eight-channel mode all channels are split, but in five-channel mode only one channel is split, allowing better quality samples on the other three channels. You may use non-halved samples on non-split channels, but attempting to use non-halved samples on split channels when two notes are played simultaneously usually creates awful noise.

The channel configuration in each of the channel modes is as follows:

(S = split, N = non-split, (L) = left speaker, (R) = right, - = unused)

Channels	0	1	2	3	4	5	6	7
4	N (R)	N (L)	N (L)	N (R)	-	-	-	-
5	S (R)	N (L)	N (L)	N (R)	S (R)	-	-	-
6	S (R)	S (L)	N (L)	N (R)	S (R)	S (L)	-	-
7	S (R)	S (L)	S (L)	N (R)	S (R)	S (L)	S (L)	-
8	S (R)	S (L)	S (L)	S (R)	S (R)	S (L)	S (L)	S (R)

Note that 5 - 8 channel mode does NOT mean how many tracks there are. You must also select 5 - 8 tracks in the
Block Properties window
.

For best results, there should be as few channels as possible. If, for example, your song doesn't use more than six tracks at once, you should select 6-channel mode instead of 7 or 8-channel mode. This both increases the execution speed and gives you two non-split (i.e. high quality) tracks (2 and 3).

Volume limitations

Because there are only 4 sound channels and 4 volume registers, two channels must share each volume register. Channels 0 and 4, 1 and 5, 2 and 6, and 3 and 7 each share one register. This means that every
volume
command (C) affects both tracks. For example:

```
Track:     0         1         2         3         4
    000 C-1 30000 E-1 30000 G-1 30000 --- 00000 A#2 50C20
```

The 0C20 command on track 4 affects both tracks 4 and 0. The default volume of instruments is ignored because it would affect two tracks.

1.73 To those upgrading from version 4...

Welcome to another new version of OctaMED! Firstly: as I'm sure you'll know, this version and all subsequent versions will require Kickstart and Workbench 2.04 or higher. This is because OctaMED now heavily depends on the new features in Release 2 of the operating system, and many parts of the program have been entirely rewritten to take advantage of them. As 2.04 upgrade packages have been available for more than 1½ years, it's a reasonable assumption that every serious Amiga user has the package available to them. However, OctaMEDPlayer is still compatible with Kickstart 1.3 to allow your songs to be heard by as wide an audience as possible.

So you've bought a copy of V5.0, and even perhaps Kickstart 2.04 or higher specially to use this program, and you're probably wondering what has changed.

Well, as soon as you loaded OctaMED, you'll have noticed a huge change: the

user interface has been completely rewritten. This not only gives the program a much more "friendly" appearance, but it enables more features to be added to the program more easily. While in OctaMED V4, gadgets had to be shrunk to make way for new functions, in future versions a window simply needs to be enlarged.

Where the V4 features can be found

Here is a list of which windows the V4 panels' features have been moved to:

Status bar:

```
Upper screen
Lower status:   Free memory    :
Lower screen
                Block name     :
Block Properties window
,
Block List win
                Song name      :
Song Options window
Files:          Load song      :
Project menu
/Open
Save song      :
Save Options window
                Del file       :
Project menu
                Load/Save instr:
Instr menu
                Load/Save msg  :
MIDI Message Editor
                Load/Save map  :
Input Map Editor
Play:           Playing seq    :
```

```
Playing Sequence window
                Chan mode, Vol,
  Filter, STS  :
Song Options window
                Equalizers
  (note: no E1):
Settings menu
                All others
Upper screen
Instr:          Type           :
Type window
                Name           :
Upper screen
 (use to reload instruments)
All others     :
Instrument Parameters window
Block:          Trks, Lines    :
Block Properties window
                Highlighting   :
Highlight Options window
                Del Buff       :
Edit menu
                All others     :
Block menu
,
Track menu
Edit:           Prog keys      :
Programmable Keys window
                Track on/off   :
Upper screen
                All others
 (no Octaves)  :
Keyboard Options window
Misc:           Clear gadgets  :
New Project window
                Quit           :
Project menu
                Palette        :
Palette Window
                PTKey          :
Keyboard Options window
                Add / Rem Paths:
Instr menu
                Mouse2         :
Mouse Options window
                All others
(no Dep2/LdGfx):
Settings menu
Vol:
Track Volumes window
MIDI:           Chan/preset,
  supp. noteoff:
Instrument Parameters window
                Message editor :
MIDI Message Editor
                Input map ed   :
Input Map Editor
```

```
                        All others     :
                MIDI menu
                Trans:          Play transpose :
                Song Options window
                        Annotation text:
                Song menu
                        All others     :
                Transpose window
                Range:          Chord RST      :
                Keyboard Options window
                        Select tracks  :
                Upper screen
                        All others
                  (no Range)    :
                Edit menu
                Synth:
                Synthetic Sound Editor
                 (note: menu attached to window)

SmpEd:
                Sample Editor
                 (note: menu attached to window)

SList:
                Sample List Editor
                Notation Ed:
                Display menu
                /Notation Editor, menu attached to window
```

You'll notice that some features have been removed. Dep2 and LoadGfx no longer apply under the new interface; and E1, Octaves and Range are thought to be no longer necessary.

New features in V5.0

a) Maximum sizes increased:

- 64 tracks in a block (you're also not limited to multiples of 4)
- 1000 blocks in a song
- 999 entries in a playing sequence
-
  MIDI Preset
   range (0 - 2800), only works with some devices
- 1048560 bytes in a MIDI message (should be enough for most use!)

b) New list windows:

-
  Song Selector
   displays all songs
-
  Block List
   displays all blocks

c)
  Sample editor

options:

* Change volume: fade in/out, halve, double, don't clip (prevents distortion)
* Anti-alias when changing pitch can be turned off
* Cancel finetune (removes finetune value from a sample)
* Set volumes of source and destination when mixing
* Set density of pixels in pixel display mode
* Invert: turns the range upside-down
* Chop: deletes the whole sample except the range
* Remove Unused Space: deletes space (of zero volume) from either side of the sample
* Create Chord: creates chords of 2 - 4 notes from a sample
* Play Buffer Contents: plays the copy buffer at the current pitch
* Sample Voice Monitor: optionally turns off hearing the input signal while digitizing (may enhance quality on slower machines)

d)

Sample list editor
options:

*

Instrument Load Window
allows easy loading of samples in list

* Stores tuning / MIDI / default volume values and default pitch as well as loop
* Add directories anywhere in list (not just to end)

e)

Playing sequence
:

* Can create multiple playing sequences (sections), and choose the order in which these sections are played in the
  Section List
  * "Clear playing sequence" button
* Now also displays block names
* "Follow" gadget automatically updates the list so that the current position is as close to the middle as possible

f) New

save options
:

* A new file format (MMD2), saves 1-64 tracks and song sections
* Song compression, using PowerPacker or SFCD compression. SFCD is a packing format used in Stephan Fuhrmann's PowerPlayer module player program, and it usually crunches modules slightly more tightly than PowerPacker. It requires lh.library for use, which is not included in the OctaMED distribution, but it can be obtained by acquiring PowerPlayer (e.g. on Fish 769).
* Song size calculation
*

Save Timer
emulates "auto-save" option of many wordprocessors

g) New editing functions:

* Insert / delete tracks throughout the song
* Flush all unused instruments
* Generic Slide creates hex volume slide (even in decimal mode)
*
Highlighting
: starting offset and custom spacing options
* Automatically cancels range after an operation. Also, you now cancel a range by simply clicking the mouse button on the editor

h) New
instrument type
: ExtSamples (an extra two lower octaves)

i) More
settings
:

* Display max tracks: maximum tracks on-screen at once (4, 8, 16)
* Left, middle and right mouse button can be configured to turn normal/select tracks on/off, set cursor position, or mark range
* Spacing options: destructive, auto-round (
Keyboard Options
)
* Turn automatic flushing of unused instruments on/off when clearing the current song of a multi-module
* Auto-Freeze Screen: automatically turns screen updating off when the OctaMED screen is not the frontmost
* Play After Loading: automatically starts playing directly after loading a song, useful for listening to other people's songs
* AGA-compatible palette

j) Many new
keyboard shortcuts
, including some new editing functions

k) Smaller functions:

* Arrow gadgets select the previous / next set of tracks to allow all 64 tracks to be used, in the
upper screen
,
Track Volumes
window and
Notation Control window
. Shift-clicking the gadgets
select the first / last set of tracks used in the current block
* A
Project menu
option to display the last title bar message
* Can also change an instrument into a synthetic sound by choosing Project menu/New Synthsound in the
synth editor
* Synthsound programming editing: the cursor no longer ↩ moves down
beyond END; and inserting any command except HLT and RES (which don't take parameters) also inserts a new 00 value.

* Shift-clicking (clicking with Shift held) the waveform arrow gadgets in the synth editor selects the first / last waveform
* Shift-clicking one of the track gadgets in the upper screen "solos" the track (clears all tracks except the one selected)
* Shift-clicking Cont Song continues song from top line of block
* Shift-clicking Space turns spacing on and opens Keyboard Options (with a view to editing the spacing options)
* Can close then reopen the notation editor's options window using

Display menu
/Notation Control Window

l) Other new features:

* Fully localizable under Workbench 2.1 or later (requires locale.library)
* You can set a default pitch (note) for each instrument, which will be played and entered at that pitch when the "F" key is pressed. Very useful for untuned instruments such as percussion
* Can load more than one instrument at a time: instruments are loaded into consecutive slots, starting at the current slot
* Clicking the timer reset gadget ("R") stores the current song position, which can be recalled by clicking the timer itself
* The High Quality switch now doesn't decrease the tempo
* Supports multiple settings and programmable keys files (on startup, OctaMED attempts to load "S:OctaMEDPro.config" and "S:OctaMEDPro.defkeys")
* On-line help provided by pressing the Help key (you'll probably have already found this out for yourself ;-)

m) Of course, numerous bug and quirk fixes, including command 19, commands FFD and FFF in 5-8 channel mode, the effect of changing the block size on line highlighting and block names, intelligent sample halving (won't request to halve samples if they are already halved) and many other small fixes.

In addition, the old "octamed.config" file can't be loaded by V5.0. This is because the format of the config file has once again changed, but hopefully for the last time (since the file is now a plain text file). You need to recreate your old preferences using V5.0, then save the settings using the

Settings menu
. (A list of the settings saved with the "OctaMEDPro.config" file is given in
The Settings File
). Note that the programmable keys definitions are now saved in a separate file called "OctaMEDPro.defkeys", see the
Programmable Keys window
.

This list should have covered all features new to V5.0, but throughout the help file the word "*NEW*" emphasizes these new features. This doesn't include keyboard shortcuts listed in the main documentation (there are too

many of them!).

Keyboard shortcuts

Almost all shortcuts involving Right Amiga have been either removed or changed from version 4, since Right Amiga is now used as a menu shortcut qualifier only. (The only exceptions are Amiga-X/C/V: cut/copy/paste track). The changes are:

Amiga-L	(Load Song)	Now Amiga-O
Amiga-P	(Play Song)	Now Left Alt-P (with main screen active)
Amiga-T	(Slide type 1)	Now Ctrl-T
Shift-Amiga-T	(Slide type 2)	Now Shift-Ctrl-T

Shift-Amiga-X/C/V has been changed to Shift-Right Alt-X/C/V for compatibility reasons. Almost all other Amiga shortcuts have been removed.

Ctrl-F1-F10 and Alt-keypad shortcuts have also been removed.

A final word

So although there are many new features, you should become used to the new interface fairly quickly. You could first of all read the
user interface
topic, then scan through all the menus and windows in the program, ↩ noting
the new positions of V4's functions and referring to the appropriate topic in this help file if you discover anything you don't recognize.

Remember that any menu item with the suffix "..." opens a window, and also that there is a menu bar attached to the
Sample Editor
,
Synthsound Editor
and
Notation Control
windows! Finally note that the right mouse button can no longer be used to select a range in the tracker, sample and synthsound editors: the left mouse button now usually does this.

We hope you find the new version useful, and also Kickstart 2.04 or higher if you've just upgraded: it really is well worth buying!

1.74 The User Interface

The "user interface" is the means by which the computer and user communicate. In OctaMED, this is done by using windows, menus and gadgets.

The user interface has been completely rewritten in OctaMED Pro V5.0, which should make the program look a little less complicated and be easier and more "intuitive" to use. ("Intuitive" means that the various controls behave as you would expect them to).

"Gadgets" are graphics symbols used for communication with the program, and this topic describes the various different sorts of gadget (which are handled using the computer's "GadTools" library).

For information about using the windows and menus, please refer to your Amiga's user manual. There are two points of note, however, about OctaMED's window handling. Firstly, notes cannot be entered or deleted while any window is active, even when editing is switched on: you must activate the main screen. Secondly, the right mouse button is equivalent to clicking the window's zoom gadget (except in the
sample
and
synthetic sound
editors and
the
Notation Control window
, when it displays the window's menu bar).

A quick word about the screen: OctaMED's screen uses AutoScroll, which means that if you have dragged the screen down, you may drag the screen up again by moving the mouse pointer off the very bottom of the screen.

(Note that the words "gadget" and "button" essentially mean the same; "click" means "press and release the left mouse button quickly"; and "drag" means "hold down the left mouse button while moving the mouse").

Action buttons

These are the simplest form of gadget, as they simply perform the activity labeled on the button. The button's appearance is a rectangular area that is raised, i.e. it seems to "come out" of the screen.

Holding down the left mouse button over the gadget "inverts" it, i.e. turns it blue. Releasing the mouse button performs the activity. While the gadget is inverted, you may move the mouse pointer away from the gadget. This makes it non-inverted, and the function is said to be "canceled".

There is a special type of action button called a "GetFile" gadget. It is a small gadget containing an diagram of a list appearing from a folder. Clicking on one of these gadgets opens a
file requester
for a particular
operation.

Examples of GetFile gadgets are in the
upper screen
and the
Save
and
Print
Options windows.

Check boxes

These small square gadgets allow you to choose whether an option is "on" or

"off". When on, a "check" (or "tick") mark appears in the gadget, and when off, the box is empty. To turn the option on or off, simply click inside the gadget.

Radio buttons

These gadgets consist of a set of small circular buttons, collectively known as a "radio button", with which you select one option from a variety of options. Radio buttons are "mutually exclusive", meaning that one and only one option may be selected. When selected (by clicking on it), the small button is recessed (meaning it seems to "go into" the screen), and a blue circle appears inside it.

Cycle gadgets

These gadgets are equivalent in function to radio buttons, but only one option is visible at a time. They look like action buttons, but with a "cycle" sign on their left-hand side. The various options are cycled through by clicking inside the gadget. Shift-clicking them (clicking them with the Shift key held down) cycles through the options backwards.

In this help file, the default setting of each radio button and cycle gadget is documented.

Text and numerical boxes

Also called "string and integer gadgets", these appear as rectangles with an embellished black and white border. With them you may type in text and numbers (in appearance there is no difference between text boxes and numerical boxes).

The boxes are "activated" by clicking inside them, and a small blue cursor appears. You may edit the text or number inside the box simply by typing. When you have finished editing, make sure you press the Return key so that OctaMED accepts the new information. Keyboard shortcuts that you may use while editing are:

<left / right>	Move cursor left / right
Backspace	Delete "character" (letter or number) to left of cursor
Del	Delete character at cursor
Shift-<left>	Move to beginning of box
Shift-<right>	Move to end of box
Amiga-X	Delete box's contents
Amiga-Q	Restore box's contents
Ctrl-A	Move to beginning of box
Ctrl-Z	Move to end of box
Ctrl-X	Delete box's contents
Ctrl-H	Delete character to left of cursor
Ctrl-U or W	Delete from cursor to beginning of box
Ctrl-K	Delete from cursor to end of box

In addition, the Tab key accepts the edited information (like Return) and activates the next text or numerical box in the window. Shift-Tab accepts and activates the previous box.

Sliders

Sliders are rectangular gadgets that contain another small black rectangle. This small rectangle is known as the slider's "knob", and the rest of the gadget is called the "slider box". Above, below, to the left or to the right of the gadget is a number (called the "slider value"), and the gadget is used to increase or decrease the slider value.

The slider value is usually changed by dragging the knob. However, clicking in the slider box increases or decreases the value by one (depending on where in the box you click). There may be arrows beside the slider; in which case, clicking them increases or decreases the value by one.

Scrolling lists

These are used to display a list of different names of objects. Examples of lists are in the
Playing Sequence window
, the
Instrument Load Window
, and
the
Song Selector window
.

They consist of a box containing the list itself, a scroll gadget to the right of the list, and sometimes a display box (see later) or text box underneath the list that shows the currently selected item in the list.

A scroll gadget is like a slider, but by dragging the black rectangle you move the list up or down. Clicking in the scroll box moves the list one page up or down. Items in the list are selected simply by clicking on them.

Display boxes

These are the only type of gadget listed in this topic that you cannot click inside! They simply display information, and they appear as recessed boxes.

One more thing you should know about: ghosting. This is when a gadget or a menu item becomes checkered, and it means that it cannot be selected. This happens, for example, to the integer gadgets in the
sample list editor
when an instrument hasn't been selected. In this case, it is ↩
sensible to
ghost the gadgets because the gadgets' values don't apply to any particular instrument.

For the keyboard shortcuts used with gadgets, see

Gadget Shortcuts
.

1.75 Installation

This topic describes which files OctaMED uses when starting up, for those
wishing to properly install the program on a hard disk or a different
floppy disk.

The only files OctaMED actually requires to start up correctly are version
37 or higher of asl.library and iffparse.library, in either the current
or the LIBS: directory. If the following other files are also installed,
however, OctaMED will take advantage of them:

File	Directories OctaMED searches	Purpose
locale.library	LIBS:, current	Use different language
amigaguide.library	LIBS:, current	On-line help
powerpacker.library	LIBS:, current	PowerPacker crunching
lh.library	LIBS:, current	SFCD compression
MED_paths	S:, current	The sample list
OctaMEDPro.config	S:	Default settings
OctaMEDPro.defkeys	S:	Default program. keys

Remember that you can also store these files in directories other than S:
and LIBS: using the "Assign" command. For example:

```
Assign S: <path name> Add
```

where <path name> is the path of the directory where you wish to store the
sample list and the default settings / programmable keys files.

In addition, if you wish to use the on-line help facilities, make sure that
the OctaMED.guide and Help.guide files are in the same directory as the
OctaMED program, and CD to this directory before loading OctaMED. The
Help.guide file, in fact, may also reside in the S: directory, which is
where it is stored on the original disk.

1.76 The File Requester

The file requester is used to handle and select files. OctaMED supports
the system-integrated ASL file requester (please refer to your Amiga's

manual for information). You can also use file requesters that
automatically replace the ASL file requester, for example ReqTools (when
the RTPatch program is run) and MagicFileRequester.

In all operations involving saving, an "Overwrite?" requester appears if
the file OctaMED is trying to save has the same name as another file in the
directory.

1.77 The Settings File

The settings file is saved by choosing
Settings Menu
/Save Settings,
and saves the following options:

Check boxes in the
Save Options window
The
Save Timer
value

All options in the
Sample Editor
/Settings menu, the sample editor's
current Pitch period, and the "Don't Clip" gadget in the
the
Change Volume window
The "Auto-Terminate Capture" gadget in the
MIDI message editor
All options in the
Mouse Options window
All options in the
Keyboard Options window
All options in the
Instr menu
Note killing options in the
MIDI menu
All options in the
Settings menu
except Play After Loading

In addition, OctaMED will save the current window positions (both zoomed
and unzoomed) if you have moved them from their usual positions.

1.78 Hexadecimal Values

"Hexadecimal" (or "hex" for short) is basically just a different ↩
way of
representing numbers. It is more convenient for the computer because of the
way it works, and allows the user to specify a greater range of numbers
using the same amount of digits.

Hex values are used in the player commands, synth editor, the secondary tempo, and the MIDI message editor. So they're quite important in OctaMED (and also in general computing).

In the usual decimal system, a digit can be ten different values: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9.

In the hex system, however, a digit may have sixteen values: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E and F. The decimal numbers 10 - 15 are represented by the letters A to F:

Decimal 10 = A
11 = B
12 = C
13 = D
14 = E
15 = F

With two digits in a number, the decimal system can represent 10 $\times$ 10 = 100 different values. The hex system, however, can represent 16 $\times$ 16 = 256 values: over twice the amount of the decimal system. (The lowest number is 00 = zero, and the highest number is FF = 255 decimal).

Converting between the two systems

So although it feels strange to work in at first, it has its advantages. In a two digit hex number (e.g. 8A), the first digit represents multiples of 16. So, to convert a two-digit hex number to decimal:

Decimal number = (Hex digit 1) $\times$ 16 + (hex digit 2)

And to convert decimal to hex, divide the decimal number by 16. The quotient is hex digit 1, the remainder is hex digit 2.

For example:

Hex 8A -> decimal:

Hex digit 1 = 8, hex digit 2 = A (10).

Decimal number = (8 $\times$ 16) + 10 = * 106 *.

Decimal 200 -> hex:

200 $\div$ 16 = 12 remainder 8.

Hex digit 1 = C (12), hex digit 2 = 8.

So hex number = * C8 *.

Hex numbers are sometimes distinguished from decimal numbers by preceding hex with a "$" sign. For example: $C8, $FF.

Signed hexadecimal

There is a further complication! Luckily in OctaMED you'll only need to use this in two player commands:

MIDI command 3
(set pitchbender) and

command 15
(set finetune).

The "sign" of a number denotes whether the number is positive or negative: that is, the "+" and "-" signs.

In hexadecimal, however, there are no "-" signs. So, negative numbers are represented by positive numbers (it will become clearer!).

In signed hex, the numbers $00 - $7F are positive as usual: they represent the decimal numbers 0 - 127. However, the numbers $80 - $FF represent the decimal values -1 to -128:

Decimal	-1	=	FF
	-2	=	FE
	-3	=	FD
	-4	=	FC
	...		
	-16	=	F0
	-17	=	EF
	-18	=	EE
	...		
	-126	=	82
	-127	=	81
	-128	=	80

So to convert negative decimal numbers to signed hex numbers, first add 256 to the number, then convert to hex as above. For example:

Decimal -67 -> signed hex:

-67 + 256 = 189.

189 $\div$ 16 = 11 remainder 13.

Hex digit 1 = 11 (B), hex digit 2 = 13 (C)

So signed hex number = * BC *.

Hex numbers will crop up in many areas of computing, so if you've never worked with them before, it's advisable to get used to them!

THAT'S IT.....Enjoy!