



Reference

Version 1.5
May 2002

License Agreement

ergonis software gmbh grants the customer a non-exclusive and non-transferable license to use the **easy beat** software (“software”) as long as the customer complies with the terms of this agreement. With a single-user license you may use one (1) copy of the software. A multi-user license may be purchased to allow the software to be used on more than one computer. The **easy beat** user manuals and the software are copyrighted and all rights are reserved. The software and the information in the manuals are subject to change without notice. The software may not, in whole or in part, be copied, photocopied or reproduced without written consent from ergonis software gmbh, although you may make copies of the software for backup purposes only. You may not loan, rent or license the software or the manual.

Limited Warranty

ergonis software gmbh makes no warranties, either express or implied, that the software will meet your requirements, that operation of the software will be uninterrupted or error free, or that all software errors will be corrected. In no event will ergonis software gmbh or the author be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect in the software or manuals, even if they have been advised of the possibility of such damages.

If you have any questions about this product, please contact us at:

ergonis software gmbh	WWW:	http://www.macility.com/products/easybeat/	
Softwarepark Hagenberg	e-Mail:	easybeat-support@macility.com	for technical support
Hauptstr. 119		easybeat-sales@macility.com	for orders, pricing, etc.
A-4323 Hagenberg / Austria	Fax:	+43 7236 3343 399	

easy beat is a macility™ product.

macility is a trademark of ergonis software gmbh.

© 2002 ergonis software gmbh. All rights reserved.

easy beat requires QuickTime™ 3 or newer.

QuickTime and the QuickTime logo are trademarks used under license.
QuickTime is registered in the U.S. and other countries.



Contents

1	Introduction	4
1.1	What is easy beat?.....	4
1.2	System Requirements.....	5
1.3	Installation and Setup.....	5
1.4	Upgrading from an Older Version.....	5
1.5	Hardware Configuration.....	6
1.6	Sending a Report.....	8
1.7	About this Documentation.....	8
2	Files	9
3	The Song Window.....	11
3.1	The Window Header	11
3.2	Tracks and Views.....	13
3.3	Track and View Headers	14
3.4	Additional Instruments.....	19
3.5	Text Fields.....	22
4	Editing Notes.....	23
4.1	Keyboard View	23
4.2	Score View	29
4.3	TAB View	31
4.4	Drum View	35
4.5	Chord View	37
4.6	Controller View	37
4.7	Modifier Summary.....	45
5	The Master Track.....	47
5.1	The Metronome View	47
5.2	The Tempo View	48
6	Menu Commands.....	49
6.1	Apple Menu	49
6.2	File Menu	50
6.3	Edit Menu	59
6.4	Track Menu	70
6.5	Variation Menu.....	75
6.6	Music Menu.....	81
6.7	Web Menu	95
6.8	Windows Menu.....	100
7	Import and Export of MIDI Files	103
7.1	Import of MIDI Files.....	103
7.2	Export of MIDI Files.....	106
8	The EasyNotes Font.....	109
9	Extending the Instrument Set	110
10	Tips and Tricks.....	113
11	Troubleshooting.....	119

1 Introduction

1.1 What is easy beat?

easy beat is a music authoring program for the Apple Macintosh. It uses the QuickTime Music Architecture (QTMA) to play songs. If you have QuickTime 3.0 or newer installed, you don't need extra hardware or software to create and play songs with **easy beat**. If you have a MIDI adapter and an external synthesizer, you can take advantage of your special hardware, too.

easy beat was designed to be easy to use (hence the name). Nevertheless, **easy beat** provides enough functionality for composition and scoring. **easy beat** features:

- up to 16 song tracks plus a “master” track for metronome and tempo changes
- multiple views of individual tracks: score, keyboard, TAB, drum, chord and controller views
- MIDI import and export as well as export to QuickTime movies and AIFF files
- 128 instruments and nine drum kits (according to the GM standard) plus the GS sounds supported by QuickTime. The range of available instruments can be extended with instrument description files when an external synthesizer is used.
- WYSIWYG editing with a simple modeless point-and-click user interface
- a special tempo controller for tempo changes during a song
- background music (play songs while you edit them or do something else)
- real-time recording (requires a MIDI adapter and a MIDI instrument)
- high-quality score printing with on-screen preview
- stylistic variations (such as shuffle, delay, arpeggio and simulation of human musicians)

easy beat currently does **not** support:

- audio tracks
- lyrics, cue points and other notes
- professional scoring

1.2 System Requirements

To use **easy beat**, you need:

- A Macintosh with a 68020 processor or better (PowerPC is recommended). You can use **easy beat** on slow machines (we even tried it on a Mac II si with 20 MHz), but this is not recommended for songs with more than four or five tracks.
- 2 MB of available memory (4 MB recommended)
- System 7.5 or newer (Mac OS 9.1 is recommended)
- QuickTime 3.0 or newer (QT 4 recommended; available from <http://www.apple.com/quicktime/>)

1.3 Installation and Setup

Installation of **easy beat** is rather straightforward. Just copy the **easy beat** folder to a convenient location on your hard disk. To print scores, you also need to install the EasyNotes font. To do that, simply drop the EasyNotes suitcase file onto the (closed) System folder. When the Finder suggests to move the file into the Fonts folder, click the OK button.

If you already have an older version of EasyNotes installed, remove that copy first: Quit all applications, open the Fonts folder and drag the old EasyNotes suitcase file to the trash.

The next step is to configure QuickTime:

- Open the **QuickTime™ Settings** control panel.
- Select **Music** from the pop-up menu.
- If you wish to use the built-in synthesizer (without extra hardware), make sure that the **QuickTime Music Synthesizer** is enabled. We suggest that you start with this setting when you run **easy beat** for the first time.
- If you wish to use an external synthesizer, you may first need to edit the list of available synthesizers.
- If you wish to use a keyboard or other MIDI instrument for recording, click **Edit List** and select the desired input port for **MIDI Input**.
- Close the **QuickTime™ Settings** control panel.

1.4 Upgrading from an Older Version

If you already have an older version of **easy beat** installed, do **not** replace the original **easy beat** folder with the new one. If you have created custom templates and/or MIDI mappings, you should take care to keep these documents. Locate the folders that contain the original and the new **easy beat** application and copy the following items from the new folder to the old folder:

- the **easy beat** application,

- the “Search Engines” folder.

The new “MIDI Maps” folder is always empty; it is just a placeholder. Do not copy it into the older folder.

The “Templates” folder contains subfolders for template categories. We recommend that you move your custom templates into a separate folder (say, “My Templates”) within the “Templates” folder. Then copy the contents of the new “Templates” folder to the old one and let the Finder replace the “Drums”, “Notes”, “Pan Controller”, “Pitch Bend Controller”, and “Value Controller” folders.

Hint: You can store your custom templates in a separate folder and put an alias to that folder into the “Templates” folder. If you do that, you never risk losing your templates when you upgrade to a newer **easy beat** version.

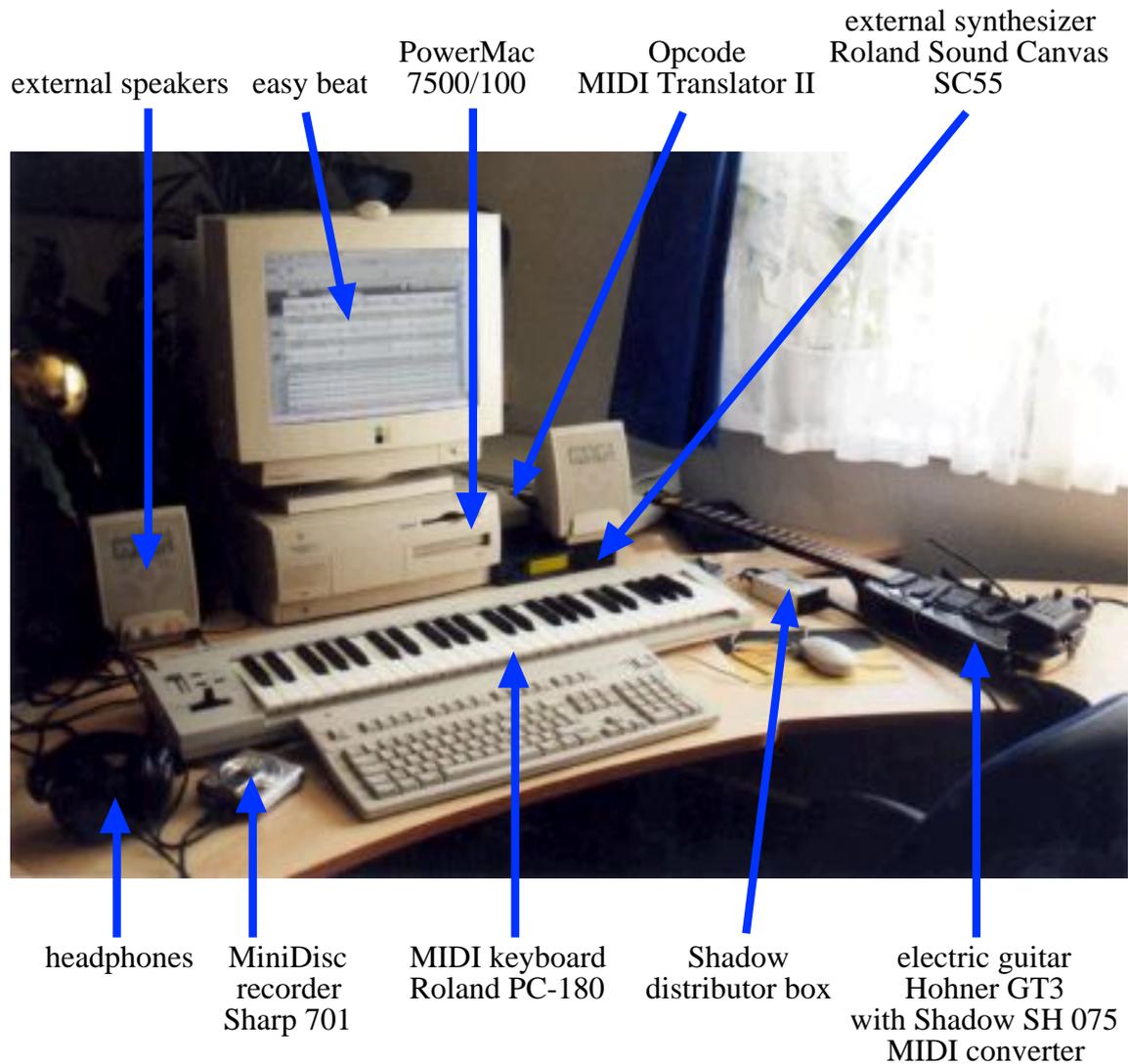
If you have followed these steps, your original **easy beat** folder is up-to-date and you can move the other folder to the trash.

1.5 Hardware Configuration

The most simple setup consists of just a Macintosh computer. **easy beat** will use the QuickTime software to play songs through your computer’s speakers. For better sound quality, we recommend that you use either external active speakers or stereo headphones.

QuickTime 3 and newer uses the GS instrument sounds of the Sound Canvas module by Roland Corporation (<http://www.rolandus.com/>). You can, however, achieve better sound quality by using an external synthesizer. This has the additional benefit that no system resources are used to produce sound. **easy beat** will generally be more responsive when you use it with an external synthesizer, in particular when you run it on a slow computer.

To connect an external synthesizer (sometimes referred to as a “sound module”) or a MIDI keyboard with a built-in synthesizer to your computer, you will need some extra hardware and software, since a standard Macintosh is not equipped with a MIDI interface. The following picture shows a typical studio setup:



To use external MIDI devices with your Macintosh, you need a “MIDI box” that connects to one of your serial (modem or printer) ports or to the USB port and provides one or more ports labeled MIDI OUT (for synthesizers) and MIDI IN (for MIDI instruments). A wide range of products is available for this purpose. You can find information on the WWW at the following links:

- <http://soundchaser.com/sndchsr/macmidiinterfaces.html>
- <http://www.opcode.com/products/>
- <http://www.midiman.net/product.htm>

To access the “MIDI box” from QuickTime (and thus let **easy beat** use your external MIDI devices), you will also need some system extensions (often called “MIDI driver software”). You can use one of the following free products:

Apple’s **MIDI Manager**: <http://til.info.apple.com/swupdates.nsf/artnum/n10660>

Opcode’s **Open MIDI System (OMS)**: <http://www.opcode.com/products/oms/>

Mark of the Unicorn’s **FreeMIDI**: <http://www.motu.com/english/software/freemidi/fmdist.html>

Since Apple's MIDI Manager is not supported any longer, we recommend the use of OMS or FreeMIDI.

1.6 Sending a Report

If you wish to report a problem with **easy beat**, select **Send Email Report** from the web menu (the menu with the world icon). **easy beat** will then create an email message for you that already contains some essential information about your installation. Simply complete the report with your comments and send us the message.

In case you cannot even launch **easy beat**, send your report to

easybeat-support@macility.com

1.7 About this Documentation

The **easy beat** documentation consists of two parts. The first part is the tutorial that leads you through typical tasks. We recommend that you install **easy beat** and then follow the instructions in the tutorial step by step. Once you have finished that, you will be able to create even complex songs easily.

This part is the reference manual. It covers all parts of **easy beat** and explains menu commands, dialogs, shortcuts, etc. You don't need to read the reference manual before you start working with **easy beat**, but you may want to consult it later when you have specific questions while you work.

The contents of the reference manual and the tutorial partially overlap. This is intended, as we tried to avoid references from one document to the other. Both manuals provide rather complete information about **easy beat**, but they are structured in a different way:

- The **tutorial** is meant to be read sequentially while you start working with **easy beat**. It uses a simple example to introduce the concepts of **easy beat** step by step.
- The **reference** manual is organized by features of **easy beat** (tracks, views, menu commands, keyboard shortcuts, etc.).

2 Files

The following list shows the various files used by **easy beat**.



This is the **easy beat** application. It is a “fat application” containing both 68k code for older Macintoshes and PowerPC code for PowerMacs. You can move the application to a convenient folder of your choice, but you should make sure that the “MIDI Maps”, the “Templates” and the “Search Engines” folders are in the same folder as **easy beat**.



The **EasyNotes font** (TrueType format) contains special characters for notes and other symbols used in **easy beat**'s score view. You need to install this font in your system folder to print scores. To do that, simply drop the font on top of the system folder icon and click OK when the Finder offers to put the file into the Fonts folder. You can use the EasyNotes font in other applications, too. See chapter 8 “The EasyNotes Font” for a list of symbols and how to generate them.



easy beat's **preferences file** is automatically created and stored in the Preferences folder within your system folder. This is the place where **easy beat** stores all your settings to remember them across sessions. If you delete this file, a new one will be generated, and all your settings will be lost.



easy beat stores **songs** in a custom format. A song file contains all tracks of a song along with additional information. You cannot use these files with other applications. To publish a song on the WWW or to export it for use with another sequencer program, you must save it as a MIDI file.



Stationery files are templates that you can use as starting points for new songs. If you open such a stationery file, a new untitled song with the stationery's contents is created. You can prepare songs with frequently used settings and instruments and save them as stationeries. You can also convert song files into stationery files and vice versa by means of the “stationery” checkbox in the Finder's Get Info window.



MIDI files have a standard platform-independent format for exchanging songs with other musicians and to publish songs on the WWW. **easy beat** can save songs as MIDI files and read MIDI files (converting them to song files). MIDI files created on other platforms may not have the icon shown here. To use such a file with **easy beat**, simply drop it on the **easy beat** icon or open it from within **easy beat**.



template

Templates contain short sequences of notes or controller changes. They are created with **easy beat**'s **Save As Template...** command and are stored in the "Templates" folder. All templates in this folder are automatically made available in the **Insert Template** submenu.



MIDI map

MIDI Map files are used to adjust **easy beat** for use with an external synthesizer that does not conform to the GM (General MIDI) standard. They are stored in the "MIDI Maps" folder and contain tables that map certain instruments to the program numbers used on such a synthesizer.



search engine

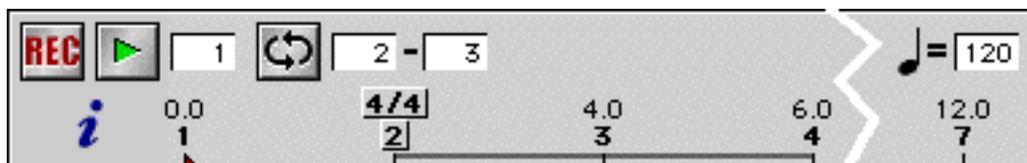
Search Engine files contain descriptions of Internet search engines that **easy beat** uses for finding MIDI files on the WWW. These files must be present in the "Search Engines" folder within the same folder as the **easy beat** application.

3 The Song Window

Most editing is done in the song window by means of clicking and dragging. This chapter explains the visible elements and their meaning. The actual editing operations are covered in the chapters 4 *Editing Notes* and 6 *Menu Commands*.

3.1 The Window Header

The window header contains a few elements that control the appearance and behavior of the entire song:



The **play button** starts playing the song with the bar that's shown to the right of the button. The enter and return keys on the keyboard have the same effect as clicking the play button. The song stops playing after the last measure that contains notes or after the end of the "loop range" (whichever is greater).



The **stop button** is shown instead of the play button when a song currently plays. It immediately stops the currently playing song. The enter and return keys on the keyboard have the same effect as clicking the stop button.



The play button turns into a **resume button** when you press the ⌘ key after stopping a song. Clicking the button resumes the song at the position where playing was stopped. The key combinations ⌘ -enter, ⌘ -return and the Pause key (function key F15 on an extended keyboard) have the same effect.



The **start bar** is shown next to the play/stop button. Whenever you click the play button or hit the enter key, the song begins playing with this bar. To change the start bar, click it and type the new bar number (see "Editing Fields"). If you press the "-" key on the numeric keypad, the start bar jumps back and forth between 1 and the "loop start". The start bar is also shown as a small red triangle () in the song ruler.



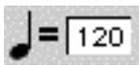
The **loop button** activates and deactivates the loop. When the loop is active, the loop button appears dark. You can also type "+" on the numeric keypad to turn the loop on and off.



The **loop range** defines which measures are repeated when the loop is active. When the loop end is reached during playback of the song, the song will continue playing with the loop start immediately afterwards. The loop range is also shown as a line across all repeated measures in the song ruler.



The **recording button** is used to record notes directly from a MIDI instrument into the current track. When the song plays, the recording button acts as a toggle and turns recording on and off. Otherwise, the song starts playing with recording enabled. You can also type "*" on the numeric keypad to turn recording on and off.



The **tempo field** is used to change the playback rate, given in BPM (=“beats” or quarters per minute). You can change the tempo by entering a new number (in the range 30 through 400) in the tempo field or by clicking the note a few times. The new tempo is then computed from the time between the clicks. Normally, every click represents a quarter. When the ⌘ key is pressed, every click stands for 1/8. With the ⇧ key down, every click represents a bar.



Clicking the “i” icon opens the “Song Info” dialog (see section 6.2 *File Menu* for details). When you import a MIDI file that contains elements that are not supported by **easy beat**, an alert symbol appears instead of the “i”. Click the icon to see which MIDI messages were ignored.



The **ticks** in the **song ruler** indicate the bar number (lower number) and the time since the beginning of the song at the current tempo.



The embossed boxes at the **second visible bar** show the bar number and the time signature of the song. Both boxes can be moved to the left and right with the mouse. Moving the lower box changes the width of the measures, and moving the upper box changes the time signature in 1/8 steps. Even eighths (such as 6/8 or 8/8) will normally be shown as quarters (3/4 or 4/4). Press the ⌘ key while changing the time signature to make them appear as eighths.



The mouse pointer changes to a **red triangle** when you point at or near a bar tick mark. Click to set the start bar to this position within the song. Double-click to set the start bar and start playing the song.



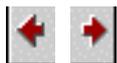
The mouse pointer changes to a **loop symbol** when you point between two tick marks in the song ruler. Click and drag to the left or right to change the loop range. You can also use ⇧ -clicks to extend or shrink the loop (as you would extend or shrink the selection in a text editor).



The mouse pointer changes to a **yellow arrow** when you press the ⌘ key or the ⌘ key while pointing into the song ruler. Click to quickly start playing the song at this position without changing the start bar.



The **current measure** is shown as a red line in the ruler while a song plays. A white marker shows the current position within the measure. The position is updated whenever possible and necessary. It does not move during menu selection and certain editing operations, but it will immediately catch up when the mouse button is released.



Red arrows appear at the left or right side of the ruler when the currently playing measure is outside the visible range. Click such an arrow (or press the “=” key on the numeric keypad) to scroll to the currently playing measure. You can also check the **Follow Song** command in the **Music** menu to let **easy beat** automatically scroll to the current measure while the song plays.

3.2 Tracks and Views

easy beat songs can contain up to 16 **tracks** plus a “master track”. All tracks can have one or more **views** that show a representation of the track’s contents. One of these views is always hilited as the current track and appears with a dark header and border. All editing operations are done in the current view. To activate another view, simply click in its header, border or content area.

To add a new track, select **Add Track** from the **Track** menu. The new track will be inserted immediately below the current track.

To remove a track, select it and choose **Remove Track** from the **Track** menu. **easy beat** will display a warning message and ask for confirmation (because this operation cannot be undone). Click OK to permanently delete the track.

easy beat provides the following views:

- **Score View:** Notes appear as they would on a score sheet.
- **Keyboard View:** Notes appear as horizontal bars where the length indicates the duration.
- **TAB View:** Tabulature; notes are shown as fret numbers on strings and indicate how they would be played on a string instrument such as guitar, bass, mandolin or banjo.
- **Drum View:** Drum hits are shown as small triangles; every line represents a drum instrument.
- **Chord View:** Chords and notes are shown in text form (e.g., Am for A minor).
- **Controller View:** Shows how effect settings (such as volume or reverb) change over time.

New tracks always appear in the Score view. To switch to a different view, select the desired view type from the **Track** menu. To add another view for the current track, press the \uparrow key when pulling down the **Track** menu and select the appropriate **Add x View** command. The new view will be inserted immediately below the current view.

If you press the \approx key when opening the **Track** menu, the menu items read **Add All x Views**. If chosen, views of the selected type are added to *all tracks*. Only drum tracks are treated differently:

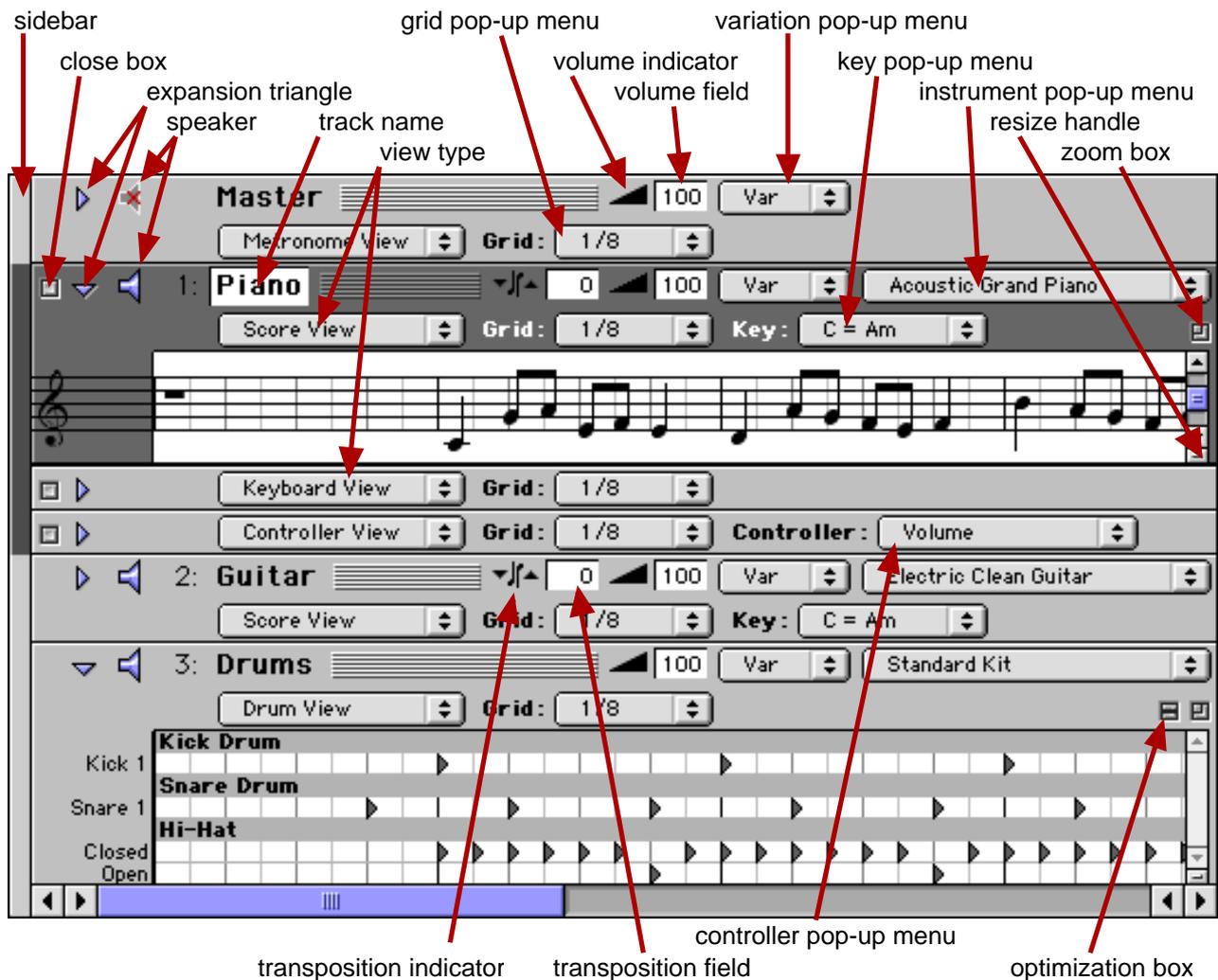
The **Add All Drum Views** is always disabled because a drum view doesn’t make any sense for “regular” instruments.

Drum tracks are not affected when you choose **Add All** for score, keyboard, TAB or chord views, as these view types are useless for drums. Only controller views can be added to drum tracks in this way.

When you work with multiple views of a single track, changes in one view are automatically reflected in all other views as well. You can, for example, move a note in the score view and will immediately see the change in the TAB and keyboard views of the same track.

3.3 Track and View Headers

The following screen snapshot shows a song with four tracks: the mandatory master track, a piano track, a guitar track and a drum track. The piano track has three views. Only two views are currently fully visible; all others have been collapsed to save space. We will use this illustration to explain the elements that appear in the track and view headers.



The **sidebar** contains a dark area that brackets all views belonging to the current track. If a track has multiple views, all views have a **close box**. Clicking the close box makes the view invisible. If only a single view remains, the close box disappears because at least one view must be visible. If you press the **⌘** key while clicking the close box of a view, all views of the same type are removed from *all* tracks. For example, you can use a **⌘**-click in a controller view's close box to hide all controller views.

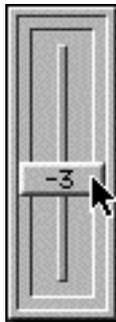
Every visible view has an **expansion triangle** for collapsing and expanding the view's content. When the triangle is clicked with the **⌘** key down, *all* views (except those of the master track) are expanded or collapsed. The **speaker symbol** can be used to mute tracks. A muted track (shown with

a dimmed speaker with a red **x**) does not sound when the song plays. Clicking the speaker symbol of a track with the **M** key down activates that track and mutes all others (except the metronome). Clicking any speaker symbol with the **A** key down activates all tracks.

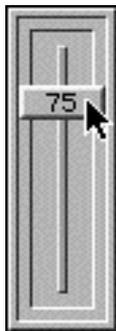
The first view of a track contains the **track name** and (in the same line) some settings for the entire track. The line that begins with the **view type** (such as “Score View”) contains view-specific settings.

The following items apply to the **entire track**:

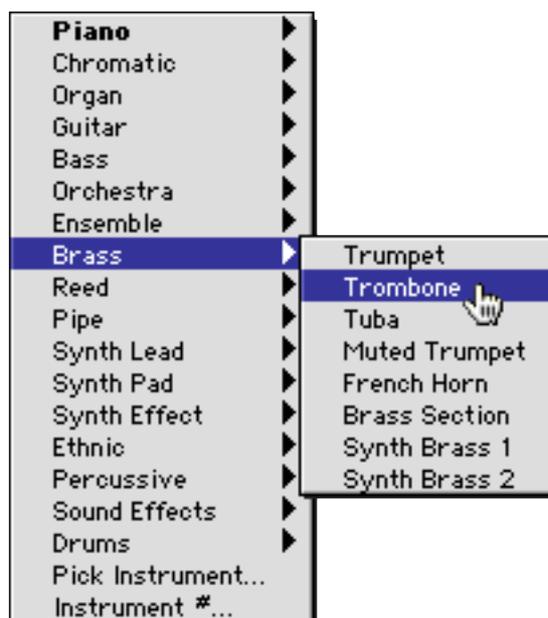
- **Track name:** Identifies the track; appears on printed pages when more than one track is being printed. To rename a track, click its name and type the new name.
- **Transposition:** The number of semitones (in the range -24 through +24) by which the track should be transposed when the song plays. This setting affects only the playback of the track but not the display of the notes. Drum tracks (including the metronome track) cannot be transposed. To change the transposition, enter a new value in the **transposition field** or click the **transposition indicator** and drag the slider up or down:



- **Volume:** A percentage (0 to 100) by which the track’s volume should be modified. This value is useful for adjusting the relative volume of the tracks in a song. Every track can contain additional volume controller events (again as a percentage of the maximum volume, where 100% corresponds to the MIDI values 127) that specify how the volume should change during playback. The effective volume is determined by both the controller value and the track volume: The controller value 80% with a track volume of 75% yields an effective volume of 60% (MIDI value 76). To change the track volume, enter a new value in the **volume field** or click the **volume indicator** and drag the slider up or down:



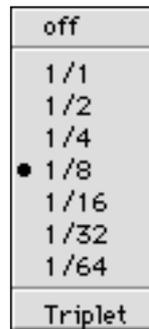
- **Variations:** A variation is an effect that is applied to the track when the song plays. Variations only affect the way in which the track sounds but not the appearance of the notes in the track's views. Variations are described in detail in section 6.5 *Variation Menu*.
- **Instrument:** The instrument used to play the track. The instrument pop-up menu contains 128 instruments in 16 submenus with 8 instruments each plus 9 drum sets in the last submenu. The metronome track does not have an instrument pop-up menu; it is preset with the standard drum kit.



- The last two items in the menu let you select additional instruments supported by QuickTime and/or an external synthesizer. These items are described below in the section 3.4 *Additional Instruments*.

The following items are available in **individual views**:

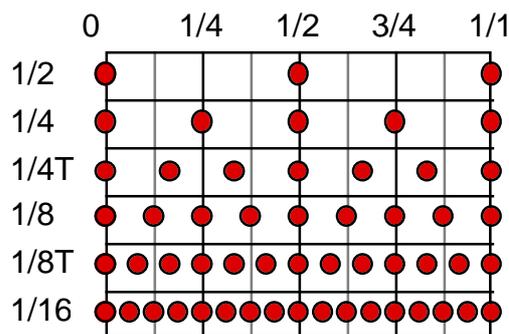
- **Resize handle** (score, keyboard and drum view only): Click the handle and drag it up or down to change the height of the view. Use the narrow scroll bar to scroll the view's content vertically.
- **Zoom box** (score, keyboard, drum and controller views): Click the zoom box to adjust the height and scrolling position of the view such that all notes become visible. If you press the **⌘** key while clicking the zoom box, *all* currently expanded views are adjusted in this way.
- **Optimization box** (drum view only): Click the optimization box to toggle between full view (all instruments visible; shown as ) and optimized view (only used instruments with no empty lines between them; shown as )
- **Grid** (not available in chord view): The resolution used for creating and moving notes. The pop-up menu provides the following choices:



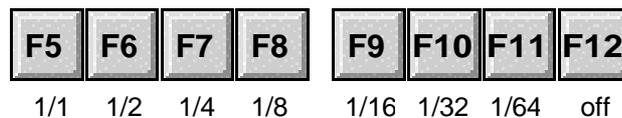
When creating a new note, both the start and the end time of the note will be aligned to the grid. When a note is moved, it does not snap to the grid but rather jumps in grid steps to the left or right. If you wish to align notes to the grid, select the note(s), set the grid pop-up menu to the desired resolution, and select the Align To Grid command from the Edit menu. Both the starting and ending time of the selected notes will be adjusted to the nearest grid position.

The last item in the menu, “Triplet”, can be checked and unchecked to create binary and ternary notes. When triplets are enabled, the letter “T” is shown in the pop-up menu. For example, quarter triplets are shown as “1/4T”.

The following figure shows some typical grid positions in 4/4 time:



If you have an extended keyboard, you can use the function keys in the top row to quickly change the grid in the following way:



Type “T” on the keyboard to toggle the “Triplet” setting.

- **Key** (score view only): The key used to display the score. The pop-up menu offers the following choices:

● C = Am
Db = Bbm
D = Bm
Eb = Cm
E = C#m
F = Dm
F# = D#m
G = Em
Ab = Fm
A = F#m
Bb = Gm
B = G#m

The current key is marked with a bullet. Suggested keys (which require no or only a few accidentals) are shown in bold.

If you press the  key while selecting a key from the pop-up menu, *all* tracks are set to that key.

Note: Although the key pop-up menu is available only in the score view, the key affects all views in which note names are displayed (notably the chord view).

- **Controller** (controller view only): **easy beat** supports 18 different effects that can be modified with controllers. Each track can only have a single controller view; the controller pop-up menu can be used to switch that view's content among the available controller types:

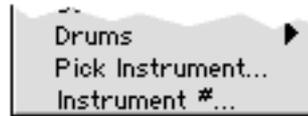
Aftertouch
Balance
Breath
Celeste
Chorus
Expression
Foot Pedal
- Modulation
● Pan
Phaser
Pitch Bend
- Portamento Time
Reverb
Soft Pedal
Sostenuto
Sustain
Tremolo
Volume

The currently visible controller is marked with a bullet. Used controllers are indicated by a dash.

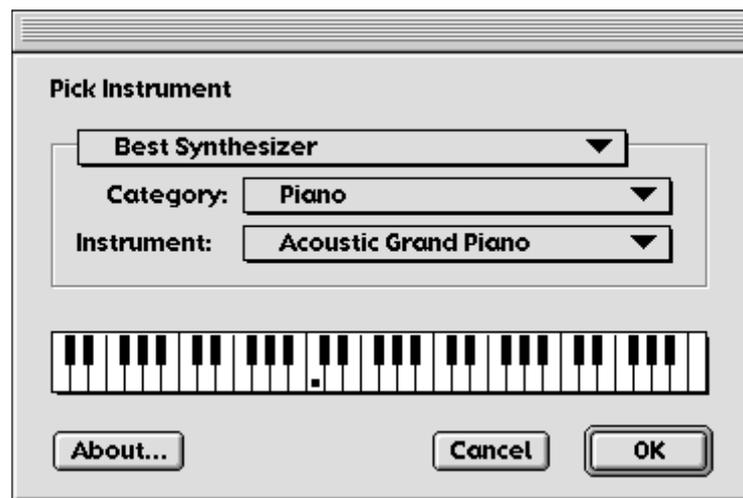
If you press the  key while selecting a controller type from a controller pop-up menu, *all* currently visible controller views are set to that controller type.

3.4 Additional Instruments

The last two items at the bottom of the Instrument pop-up menu in the track header let you select instruments that are not part of the General MIDI standard:



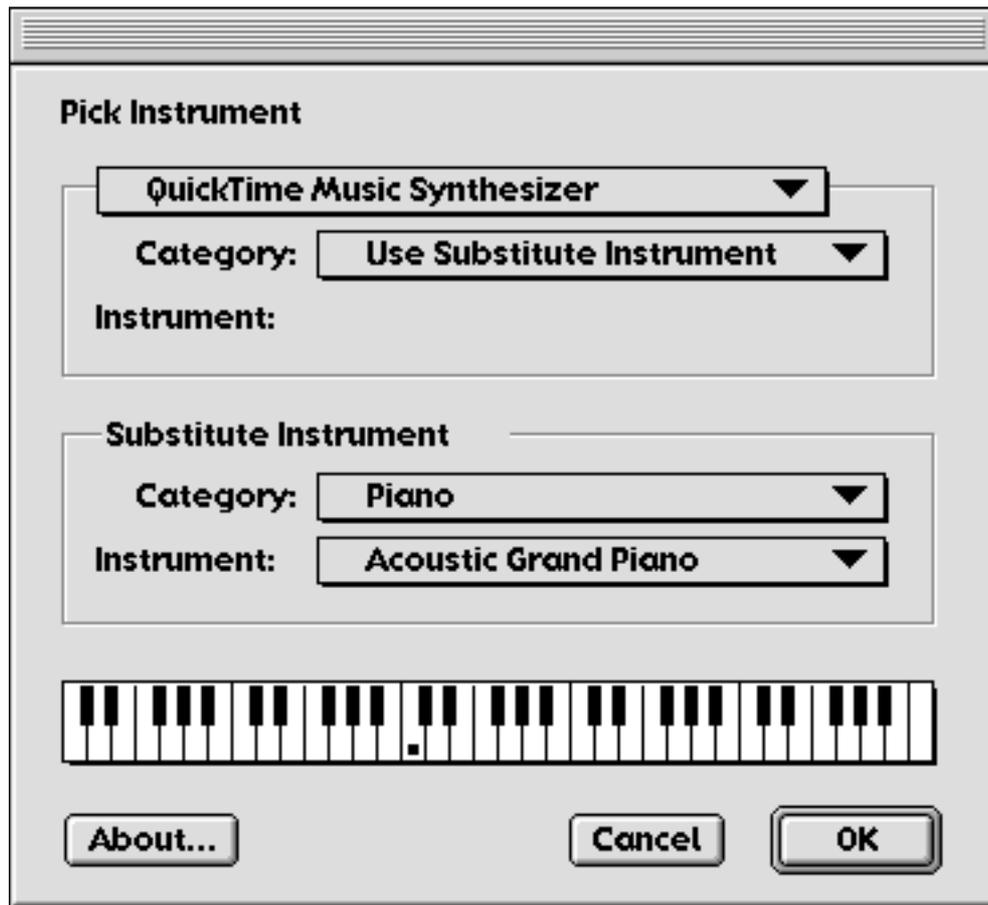
Pick Instrument... opens QuickTime's instrument picker dialog:



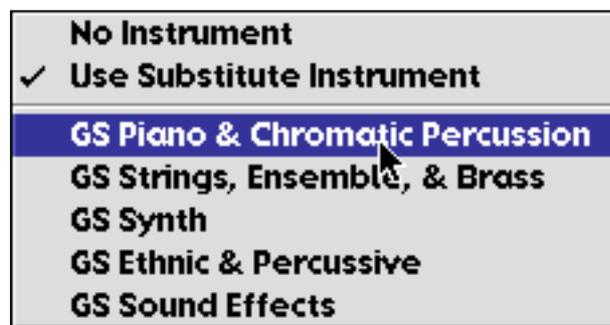
Shortcut: Instead of selecting “Pick Instrument...”, you can also click the Instrument menu while pressing the  key.

When the first pop-up menu displays “Best Synthesizer”, you can use the menus below to select one of the General MIDI instruments. As these instruments are also available in **easy beat**'s Instrument menu, you will rarely need to use the dialog in this mode.

If you switch the first pop-up menu to “QuickTime Music Synthesizer”, the dialog is enlarged:



You can now use the first Category pop-up menu to select a group of GS instruments:



Then you can use the Instrument menu below to select the desired instrument, such as the “Detuned Electric Piano 1”:



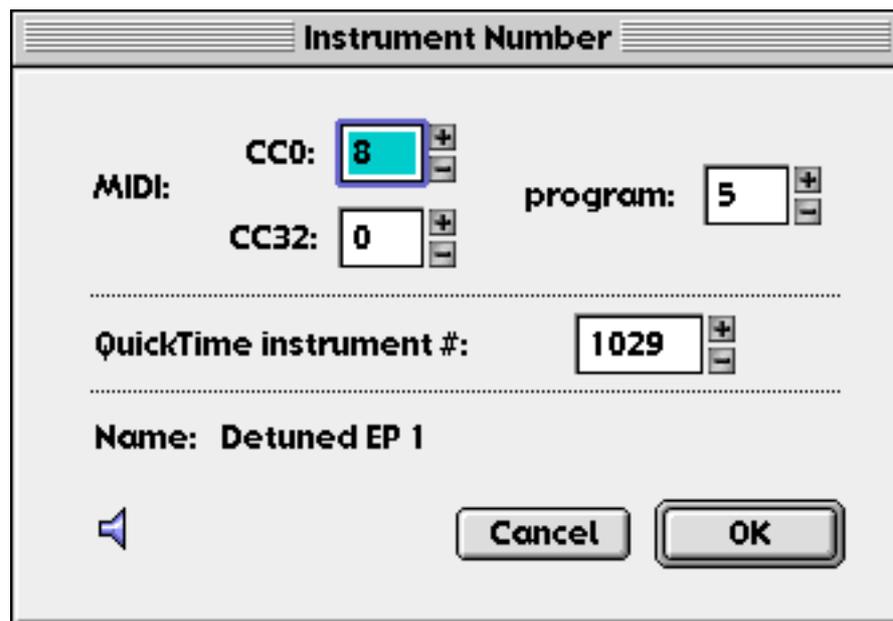
After you confirm the new instrument by clicking the OK button, **easy beat** displays the instrument's name in italic in the Instrument pop-up menu:



The italic style is used whenever a non-General-MIDI instrument is used. You should take that as a warning that the instrument may not play properly on some external synthesizers.

GS is an extension to General MIDI by Roland Corporation. QuickTime 3.0 and newer can play all these instruments using the built-in software synthesizer. If you use an external synthesizer that conforms to the GS standard, it will be able to reproduce these sounds, too. If an external synthesizer does not support the GS sound set, it will very likely play the wrong instrument. If you are lucky, it will at least use a similar instrument (such as the “Electric Piano” from the General MIDI set instead of the “Detuned EP 1”).

The last item in the Instrument menu (**Instrument #...**) lets you specify instruments by their bank and program numbers. If you use an external synthesizer, you can use this dialog to switch to an instrument that is not supported by QuickTime. You will need this dialog only if you use an external synthesizer.



Shortcut: Instead of selecting “Instrument #...”, you can also click the Instrument menu while pressing the \mathfrak{K} key.

The first section lets you specify the bank and program numbers where the desired instrument will be found on your synthesizer. Please see your synthesizer's manual for details.

To activate an instrument, **easy beat** sends the bank number with controller change (CC) events #0 and #32. The MIDI Specification defines that bank and program numbers are in the range 1–128. **easy beat** follows this convention only in the case of the program number. Bank numbers start with 0.

This numbering scheme conforms to common practice, as most synthesizer vendors specify the bank numbers in terms of the MIDI controller values, which are in the range 0–127.

It is possible that banks are numbered 1–128 or programs are numbered 0–127 in your synthesizer’s manual. If that is the case, you need to add or subtract 1 when you enter the numbers in **easy beat**.

Note: To specify a drum instrument, enter 0 for CC32 and the pseudo bank number 128 for CC0.

The “QuickTime instrument #” field in the second part will only be of interest for you if you are familiar with QuickTime’s instrument numbering scheme. Just in case you wonder: The QuickTime number is calculated as $128 \cdot \text{bank} + \text{program}$. If CC32 is not zero, there is no corresponding QuickTime instrument number; the field will contain “•••” in this case.

The third part displays the name of the instrument that corresponds with the current number. If **easy beat** cannot identify an instrument, it displays “(Bank nn/nn, Pgm nn)” instead of the instrument name.

To check how an instrument sounds, click the speaker icon in the lower left corner.

3.5 Text Fields

Some settings (for example, the loop range, tempo, and track names) are shown as text fields in a song window. To edit these fields, click them. The currently edited field is marked with a blue border, and its content is selected:



Type the new value to replace the entire field or click a second time to set the insertion point within the field or to select a few characters.

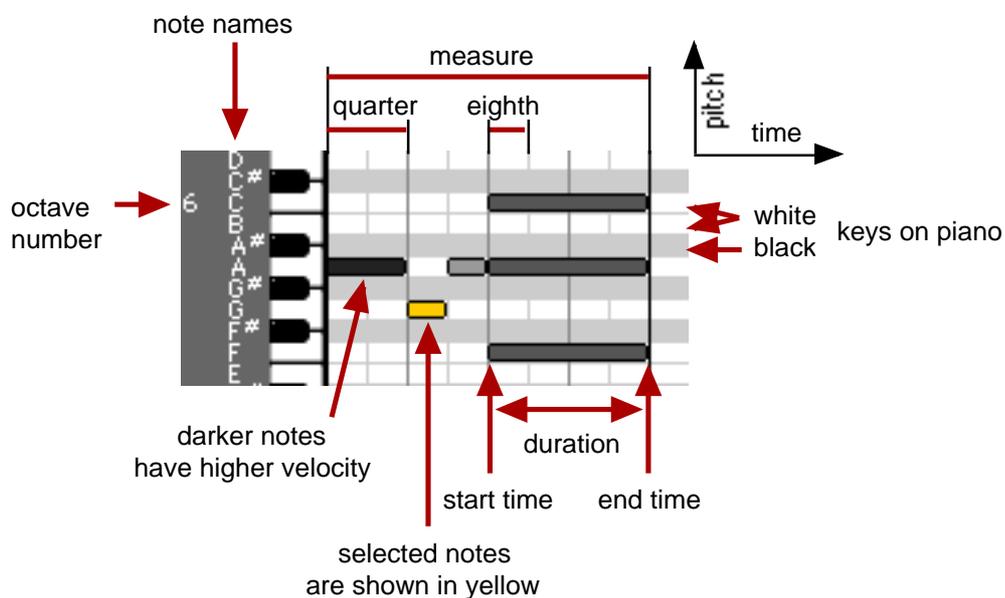
To confirm the change, hit the return or enter key. To revert to the previous value, hit the *esc* key.

4 Editing Notes

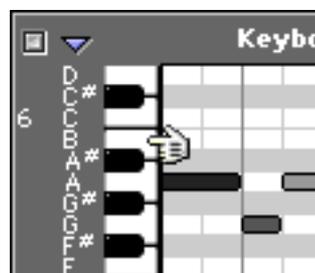
No matter in which view you work, creating and editing notes is done with clicking and dragging. The first section explains the editing operations in the keyboard view. The other sections describe the differences between the other views and the keyboard view.

4.1 Keyboard View

Notes appear as horizontal bars, as shown in the following illustration:

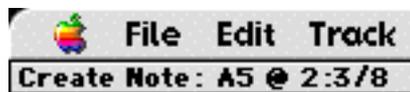


If you point into the miniature piano keyboard in the track border, the cursor appears as a hand pointing to the left. Click to play the note with a middle velocity (press the **⌘** key to play loud):



Creating a Note

To create a note, point at a line (the mouse pointer appears as ). Depending on the current grid, a vertical dotted line will follow the mouse pointer and show the position where the note will begin. The note and time are also shown in the status bar immediately below the menu bar:



“A5” is the note name; the number 2 before the colon identifies the current measure; the numbers after the colon indicate the time relative to the beginning of the measure.

To create the note, click near the desired starting position and draw a horizontal line to the right (the mouse pointer changes to ). While you draw the note, a black bar indicates the duration of the note, and the duration of the note appears in the status bar:

A5, Length = 3/8



The length of the note will be restricted to the current grid setting. Finally, release the mouse button and a new selected note will appear.

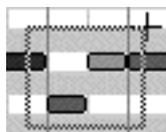
To temporarily turn the grid off, press the  key while clicking or drawing the note.

To cancel the creation of a note, move the mouse pointer outside the content area of the view until it appears as , then release the mouse button.

Selecting Notes

To select a note, point at it (the mouse pointer appears as ) and click. To select multiple notes, hold the  key during the click. A -click on a selected note deselects it again.

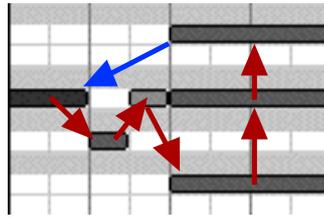
To select multiple notes within a rectangular area, point at an empty location, click and draw a rectangle that spans at least two note lines:



When you release the mouse button, all notes that are completely within the rectangle will be selected. Hold the  key during the operation to toggle the selection status of the enclosed notes.

To deselect all notes, briefly click in an empty area without moving the mouse, or press the escape key.

To advance the selection to the next note (higher pitch at the same starting time or following note), hit the tabulator key. The notes will be selected in the following order:



When the last note of a track or nothing is selected, pressing the tabulator key selects the first note, as indicated by the blue arrow.

Press the \uparrow key along with the tabulator key to select the notes in the reverse order. If the first note of a track or nothing is selected, pressing \uparrow -tabulator selects the last note.

To play the selected notes only, press the space bar.

Moving and Copying Notes

To move a note to the left or right or to another line, point at it (the mouse pointer appears as \oplus). Click and move the note to the new destination position. To cancel the operation, move the mouse pointer outside the content area of the view (until the mouse pointer appears as \otimes) and release the mouse button.

To move multiple notes, first select all desired notes, then click one of these notes and drag the entire group to the new location.

A5 -> C6 (Δ Note = +3), Δ Time = 3/4

During the operation, the status bar shows the change in both pitch and time. The number after “ Δ Note” is the number of semitones the notes will be transposed.

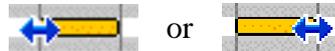
When you drag notes to the left or right, they will jump in steps as defined by the current grid setting. To temporarily turn the grid off, press the ⌘ key while clicking or moving the note. To restrict the movement to the same note line (such that the pitch of the notes is preserved), press the \uparrow key during the move. Do not press the \uparrow key when you click, as that would merely select or deselect the note.

To copy notes instead of moving them, press the ⌘ key when you release the mouse button (the mouse pointer appears as \oplus).

To move selected notes with the keyboard, use the arrow keys. The horizontal arrows move the notes to the left or right by the current grid setting. The vertical arrows move the notes one line (= one semitone) up or down. When you press the \uparrow key along with the vertical arrow keys, the notes move up or down by one octave.

Changing the Duration of Notes

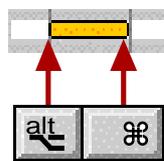
To change the duration of a note, point at the left or right border of the note (the mouse pointer appears as ):



Click and drag the border to the desired length. The duration of the note will grow or shrink in steps as defined by the current grid setting. To temporarily turn the grid off, press the  key.

When multiple notes are selected, all of them will be made shorter or longer by the same amount.

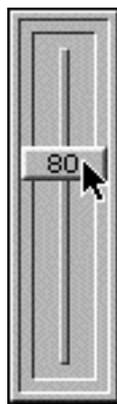
To change the length of notes with the keyboard, use the left and right arrow keys along with the  key or  key, as shown in the following illustration:



Changing the Velocity of Notes

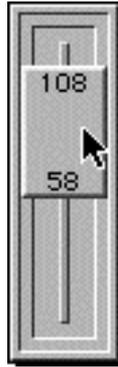
The velocity of a note determines how loud it should be played (e.g., how hard a key is hit on a piano or a string is picked on a guitar). The velocity is specified as a value in the range 1 to 127, where 127 is very loud and 1 is almost inaudible.

To change the velocity of a note, point at it while pressing the *ctrl* key (the mouse pointer appears as ). When you click, a slider appears with the current velocity displayed on top of the knob:



Drag the slider up or down to increase or decrease the velocity, then release the mouse button.

When multiple notes with different velocities are selected, the slider covers the entire velocity range, as shown in the following illustration:



When you move the slider, the velocities of all selected notes are increased or decreased by the same amount. To set all selected notes to the same velocity, press the \uparrow key along with the *ctrl* key and click one of the selected notes. The slider then shows the average velocity of all selected notes. Drag the slider to the desired value to set all notes to this velocity.

New notes are created with a default velocity of 80. To change the default velocity, press the *ctrl* key, click in an empty area (the mouse pointer appears as \uparrow D) and drag the slider to the desired default value.

Deleting Notes

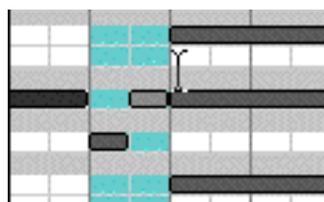
To delete notes, select them and hit the backspace or delete keys, select **Clear** or **Cut** from the **Edit** menu, or type ⌘-X or press the F2 key.

Copying and Pasting Notes

To copy notes to the clipboard, select **Copy** from the **Edit** menu or type F3 or ⌘-C . You can subsequently paste the notes in a different track or in another location of the same track using **Paste**, F4 or ⌘-V . Pasted notes are inserted in the leftmost visible measure of the current track while maintaining their relative position within the measure from which they were copied. See the description of the **Copy** command in section 6.3 (*Edit Menu*) for details.

Note Ranges

To select a series of notes in a certain range, press the ⌘-A key and point at an empty area (the mouse pointer appears as ⌘). Click and drag to the left or right to highlight a range within the current view:



The selected range contains all notes that *start* within the highlighted area (in this example, only the two 1/8 notes) as well as all controller events in this area.

To extend or shrink a range selection, press both the  and the  keys, point near the left or right end of the range and drag it to the desired position.

To select an entire track as a range, press the  key while choosing **Select All** from the **Edit** menu (or press --**A**).

To remove all notes and controller events in the selected area, press the delete or backspace key or choose **Cut** or **Clear** from the **Edit** menu.

To copy a range to a different location, copy it to the clipboard, select the destination range and paste the range. If the source and destination ranges have different lengths, the clipboard's content is scaled to fit the destination range.

The result of copying and pasting depends on the type of selection when the **Copy** and **Paste** commands are executed, as shown in the following table:

	Paste with no range selected	Paste into selected range: 	Paste into selected track: 
Copy selected notes: 	Notes are inserted in the leftmost visible measure, offset by their position within the original measure.	Notes are inserted at the beginning of the range. The length of the range is ignored.	Notes are inserted at the beginning of the song.
Copy selected range: 	Not allowed.	Notes are inserted in the destination range. If its width differs from that of the original range, the notes are scaled.	Notes are inserted at the beginning of the song. The length of the source range is ignored; the notes are not scaled.
Copy entire track: 	Not allowed.		The entire track is replaced with an exact copy of the clipboard's content.

4.2 Score View

Notes appear in a familiar score notation, as shown in the following illustration:



Selected notes appear in red; the velocity of the notes is not shown in the score view.

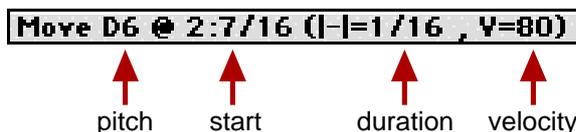
If you point at the right part of the track border, you can play the notes represented by the note lines:



The horizontal positions of the notes does not always correspond to the exact start of the note within a measure. **easy beat** tries to arrange notes and rest signs in an aesthetically pleasing way. If the first part of a measure contains many short notes, they will take up more space than a single note in the second half, as shown in the following example:



If you need to know the exact position of a note, select the note without moving the mouse:



As long as you press the mouse button, a rectangle will highlight the note line and position of the note, and two lines at the top and bottom of the view indicate the note's position.

Creating a Note

The procedure is similar to creating notes in the keyboard view, with the following exceptions:

When you point at an empty space in the score view, the mouse pointer appears as a note head (●) instead of ➡.

The pitch of the created note depends on the note line. To create a note with an accidental, press the *caps lock* key while clicking.

Selecting Notes

Same as in the keyboard view.

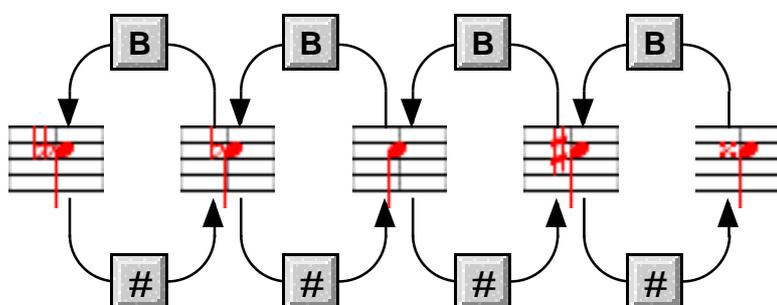
Moving and Copying Notes

Similar to moving and copying notes in the keyboard view, with the following exceptions:

A vertical move lets the notes jump from note line to note line, not in semitone increments. To move a note to a new destination line and add an accidental, press the *caps lock* key.

To move notes up and down with the arrow keys in semitone steps instead of note lines, press either the *caps lock* key or the ⌘ key along with the arrow key.

To add accidentals to selected notes, use the “#” key or the “B” key on the keyboard. To create double accidentals, hit the “#” key or the “B” key twice. To remove a “#” sign, type “B”, to remove a “b” sign, type “#”. The following figure shows the effect of these keys:



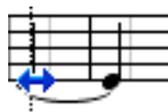
Changing the Duration of Notes

To change the duration of a note, point at the right side of its note head:



Because note heads are not wide enough, you cannot change the length of a note by clicking at the left side of the note head. Changing the starting time of a note is not supported in the score view, neither with the mouse nor with the ⌘ key and the arrow keys.

In some cases, single notes are split into two or more tied notes (syncopes):



In this case, the head of the first note represents the entire note. The second note only indicates the duration, which means that you cannot point at it to move the note or change its length. Point at the

first note head to move the note; point at the right side of the first note head to change the length of the entire note.

Changing the Velocity of Notes

Same as in the keyboard view.

Deleting Notes

Same as in the keyboard view.

Copying and Pasting Notes

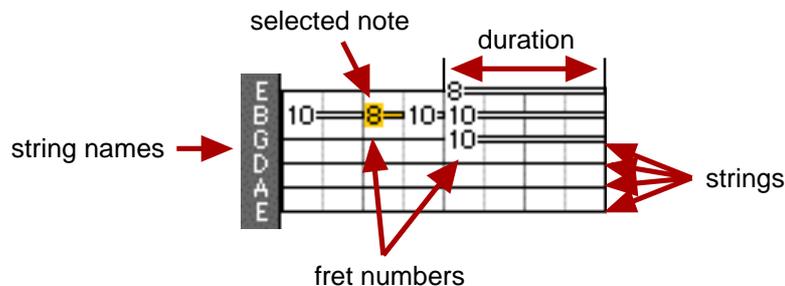
Same as in the keyboard view.

Note Ranges

Same as in the keyboard view.

4.3 TAB View

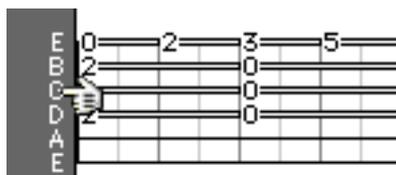
Notes appear as fret numbers on strings, as shown in the following illustration:



The fret number 0 means an open string.

This figure shows the TAB view for a standard 6-string guitar. Other configurations can be defined in the **TAB Settings** dialog (see section 6.4 *Track Menu* for details).

As in the keyboard and score views, you can point at the string names in the track border to play the corresponding notes:



Creating a Note

To create a note, point at a string and draw a horizontal line. The new note will appear with the current default fret position (as defined in the **TAB Settings** dialog).

To change the fret of a selected note, simply type the new fret number. The number will appear with a blue outline, and you can use the usual text editing techniques:



To confirm the new fret number, hit the return or enter key; to revert the fret number to the previous value, hit the *esc* key. You can also hit the tabulator key to confirm editing and advance to the next note.

If you create notes in another view, they will be automatically preset with a string/fret combination near the default fret.

Selecting Notes

Same as in the keyboard view.

Moving and Copying Notes

Similar to moving and copying notes in the keyboard view, with the following exceptions:

Vertical moves (with either the mouse or the vertical arrow keys) let the selected notes jump from string to string. The \uparrow key has no effect with the vertical arrow keys.

Hold the \uparrow key along with the *horizontal* arrow keys to decrement (\leftarrow) or increment (\rightarrow) the fret numbers of the selected notes.

An alternate method for changing the pitch of selected notes is described in the section *Fretboard Editing* below.

Changing the Duration of Notes

Same as in the keyboard view.

Changing the Velocity of Notes

Same as in the keyboard view.

Deleting Notes

Same as in the keyboard view.

Copying and Pasting Notes

Same as in the keyboard view.

Note Ranges

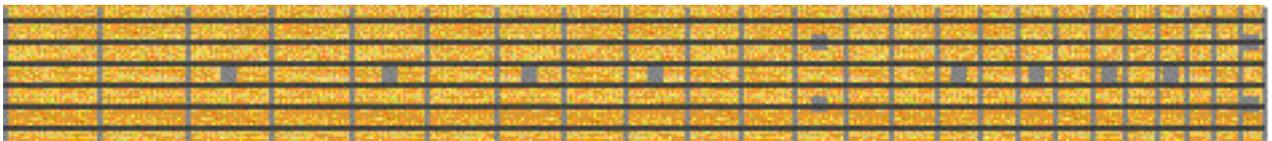
Same as in the keyboard view.

Fretboard Editing

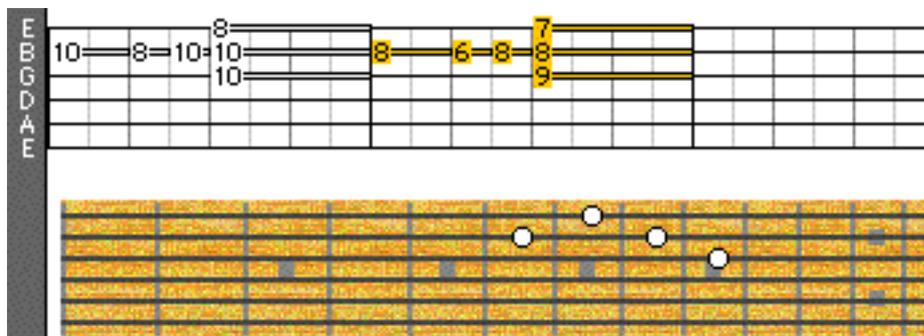
The header of a TAB view contains a symbol that looks like part of a guitar fretboard:



Click this symbol to show or hide a fretboard right below the tabulature:



When you select notes in the TAB view, they appear as finger positions on the fretboard:

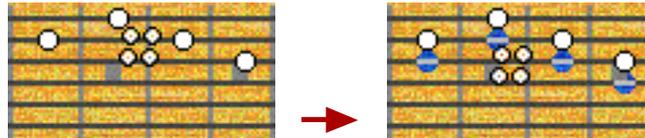


To change the string/fret positions of a note, point at it (the mouse pointer appears as ) and drag it to the desired destination:



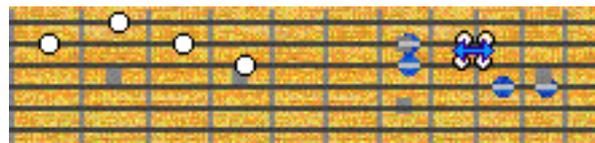
This operation moves all selected notes that are played on this string/fret position. In this example, all three notes on fret 8 of the B string will move to fret 7.

To move all selected notes at once, point at an empty space on the fretboard (the mouse pointer appears as ) and drag the entire pattern to the desired destination:



To confine the movement to the same string, press the  key while moving the note(s).

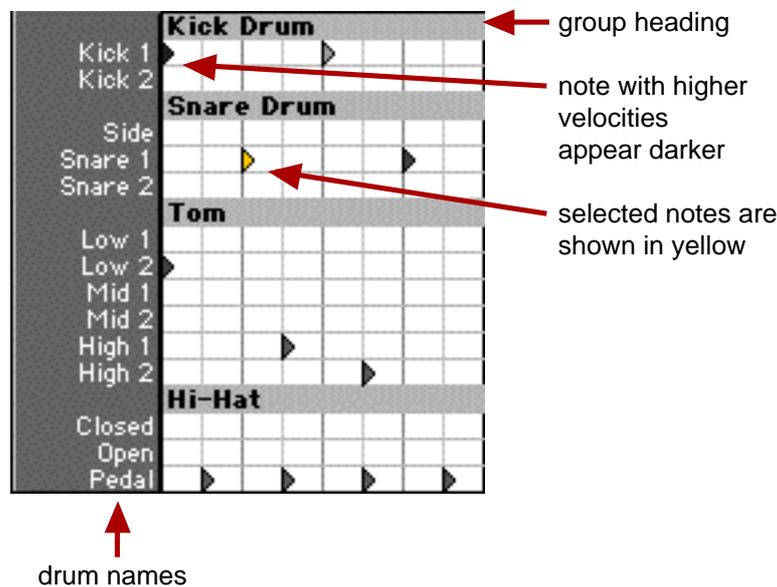
To preserve the pitch of the moved notes, press the  key while moving a single note or all selected notes (the mouse pointer appears with a blue arrow as  or ). Move the note(s) near the desired fret position, and **easy beat** will automatically select the best strings to play the notes with their given pitch close to the destination fret:



To cancel a fretboard operation, move the mouse pointer outside the fretboard (until the mouse pointer appears as ) and release the mouse button.

4.4 Drum View

Notes appear as small triangles, as shown in the following illustration:



Drum notes all have the same duration of 1/64. Every single pitch is mapped to a specific drum instrument; for example, middle C is mapped to the “high congo”. **easy beat** arranges the drum instruments in groups of similar instruments. Every group has a gray heading, and the names of the group members are shown in the track border.

The header of a drum view contains a small **optimization box** with either a vertical or a horizontal line (☐ or ☐). When the vertical line is shown, the drum view lists all 59 available drum instruments. Once you have created notes for all relevant instruments, click the box to hide all lines that do not contain notes. This shrinks the height of the drum view and makes editing more convenient. If you need a drum instrument that you have not yet used, switch back to the full view, create a few notes for the new instrument and click the optimization box again.

As in the other views, you can point at the drum names in the track border to play the drums:



Creating a Note

To create a note, point into a white line (the mouse pointer appears as ) , click and immediately release the mouse button again. Since all drum notes have the same duration, you don't need to drag to define the length.

Selecting Notes

Same as in the keyboard view, except that you cannot deselect all notes by clicking in an empty area (as such a click would create a new note). Instead, click in one of the gray header lines, click and draw a small selection rectangle around an empty area, or simply hit the *esc* key.

Moving and Copying Notes

Same as in the keyboard view, except that vertical moves with either the mouse or the up and down arrow keys move the selected notes to the next drum instrument.

Changing the Duration of Notes

Not available in the drum view.

Changing the Velocity of Notes

Same as in the keyboard view.

Deleting Notes

Same as in the keyboard view.

Copying and Pasting Notes

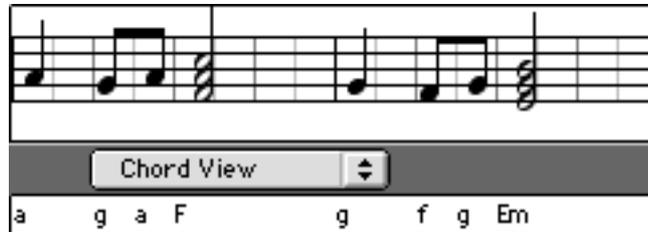
Same as in the keyboard view.

Note Ranges

Same as in the keyboard view.

4.5 Chord View

The chord view consists of a single line that shows the names of notes and chords in the current track:



Individual notes are shown as lower-case letters, chords appear as upper-case letters. For an overview of the chord notation used by **easy beat**, see the “Chords” document in the “Examples” folder.

The chord view is a read-only view; you cannot use it to create or change notes.

4.6 Controller View

The MIDI term *controller* means knobs and switches for adding effects that cannot be expressed with notes alone. **easy beat**'s controller views let you define how the various controllers change over time. Every track can have a single controller view with an extra pop-up menu that lets you switch the controller view's content. If you press the  key while selecting a controller type from the pop-up menu, *all* currently visible controller views are set to that controller type.

The following controllers are supported by **easy beat**:



Aftertouch: Typically used for keyboard instruments; determines how strong a key is being pressed after hitting it.

Balance: The balance between the left and right channels for stereo instruments.

Breath: Determines how strong the player blows a brass or similar instrument during a note.

Celeste: A slight detune effect.

Chorus: A subtle effect that gives many instruments more “body”.

Expression: A secondary volume controller (typically used for brief and small changes).

Foot Pedal: Whatever the foot pedal does for certain instruments (typically used for keyboard); often used to alter the intensity of notes.

Modulation: A periodic change to the volume and/or pitch of the sound, typically a vibrato effect.

Pan: The balance between the left and right channels for mono instruments.

Phaser: A continuous swooshing effect.

Pitch Bend: A change in the pitch of notes; corresponds to the pitch wheel of a keyboard or the whammy bar of an electric guitar.

Portamento Time: The time to change the pitch from one note to the next; gives a slurring effect.

Reverb: Adds a reverb effect as if the instrument were played in a hall.

Soft Pedal: Lowers the volume or intensity of notes being played.

Sostenuto: Similar to Sustain, but holds only notes being played when Sostenuto is activated. Notes starting later (when Sostenuto is already on) are not affected.

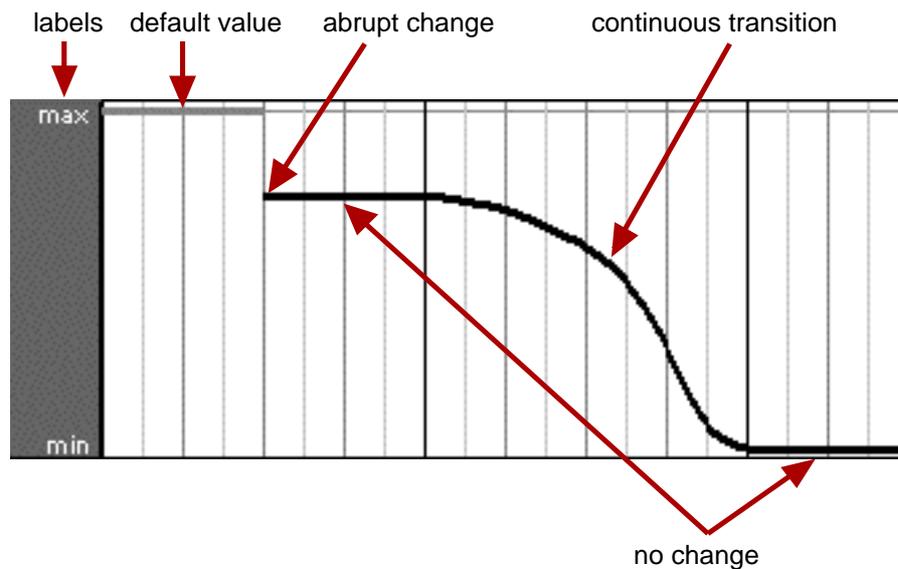
Sustain: Lets notes continue to play after their “official” duration; corresponds to the hold pedal of a piano. The notes stop sounding when the sustain is reset to 0. (0 means “off”, any other value means “on”).

Tremolo: A periodic change to the volume, sometimes similar to Modulation.

Volume: The loudness.

Depending on the type of instrument and on your equipment, certain controllers may have no effect. For example, the breath controller does nothing when applied to a piano, and an external synthesizer might not be able to generate a phaser effect.

Controllers are edited in a graphical notation, as shown in the following illustration:

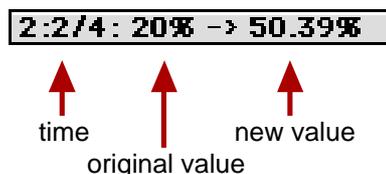


Every controller has a minimum and maximum value, typically 0 and 127. Instead of these MIDI values **easy beat** handles and displays most controller values as percentages of the maximum value. For example, 3/4 of the maximum is displayed as 75% instead of the less clear MIDI value 95.

During playback of a song, controller values are changed by means of discrete **controller events** that determine which controller should be set to what value. As long as no event has occurred in a track, a default value is used. **easy beat** indicates that default value with a gray line at the beginning of a track. Starting with the first explicit event, the controller transition is shown as a black line.

Every event causes an abrupt change of the controller value. As long as no events follow, the value remains the same. To simulate a continuous transition, many controller events must be used that change the value in small steps. To achieve this goal, **easy beat** creates controller events every 1/128 note and displays them as smooth straight or curved lines. However, if you stretch the bar width and increase a controller view's height, you will sometimes see the small steps.

If you point into the controller view, the mouse pointer will appear as a simple cross (+), and the status bar will display the current time within the song, the current controller value at that time and the new value that you currently point at:



In addition to that, a dotted horizontal line will indicate the new value that corresponds to the vertical mouse position.

To create a single controller event, simply click. The controller value inserted at this point will extend to the right until the value is changed by another controller event (or until the end of the song). To set the controller value for an entire song that does not yet contain controller events, click at the beginning of the first measure.

If you click and move the mouse pointer strictly vertically (it will appear as ) a horizontal line will show how far the new controller value will extend.

To create a linear transition, click at the start point and draw a straight line to the end point. All events in this range will be replaced by a series of controller events that simulate a linear rise or fall of the controller's value. If you draw a horizontal line, a single controller event will be created at the beginning, and other events in this range will be removed such that the new value remains active for the entire duration.

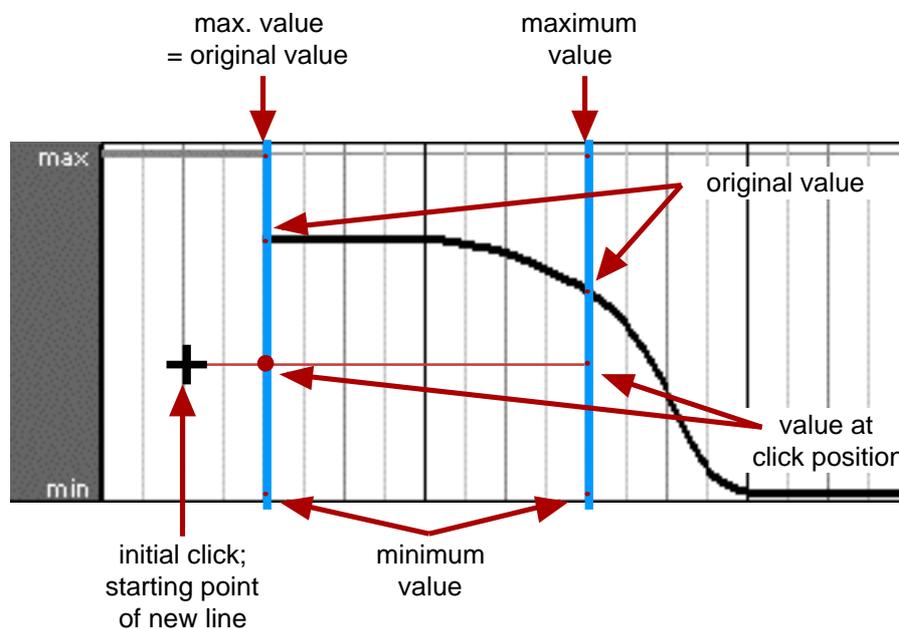
As usual, pressing the  key during clicking or drawing temporarily turns the grid off.

As in all other views, the  key can be used to select a continuous range that can be copied and pasted. If the source and destination ranges have different length, the controller transition will be scaled when pasted. To delete a controller range, hit the delete or backspace key or select **Cut** or **Clear** from the **Edit** menu. The value that was effective at the beginning of the selected range will then extend over the entire range.

If you press the  key when you click or draw a line, the new value will snap to one of the following values, depending on where you point:

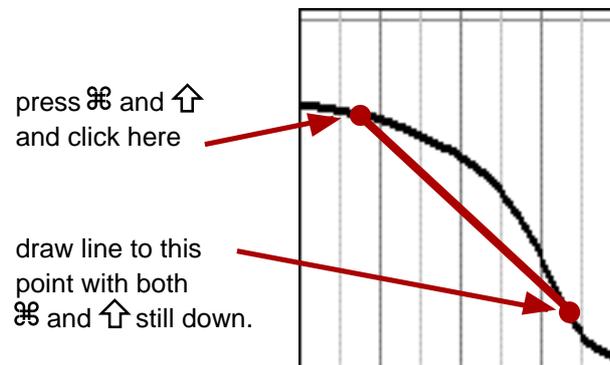
- the current controller value,
- the value at the initial click position (during drawing),
- the minimum and maximum value,
- a few “reasonable” values, depending on the type of controller being edited (e.g., the “center” location within the “Pan” controller and half semitones within the “Pitch Bend” controller).

The following illustration shows the effect of pressing the  key while drawing a line:

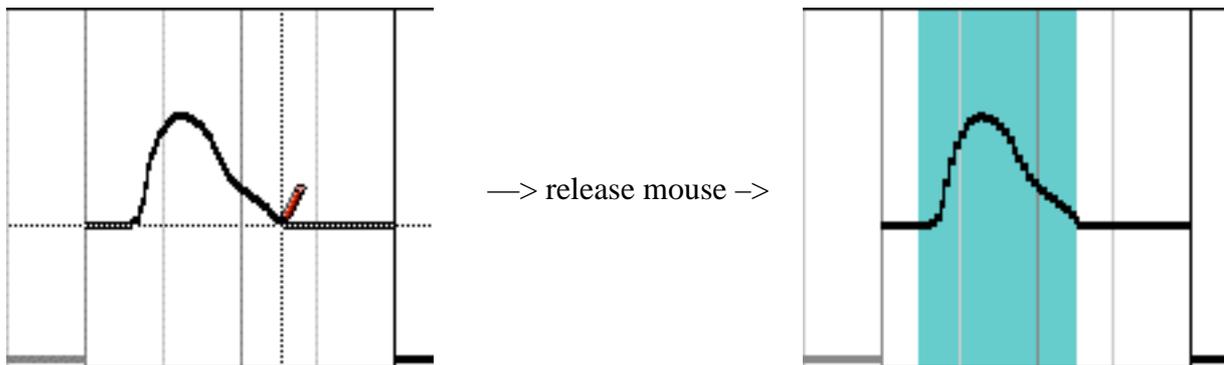


When you click at the location marked with a cross and move the mouse pointer up and down along the blue grid lines while pressing the  key, the end point of the drawn line will snap to the values marked with red dots.

It is, of course, possible to press both the  key for disabling the time grid and the  key to let the value snap to the nearest suggested location. This is particularly convenient to straighten parts of a curve, as shown in the following figure:

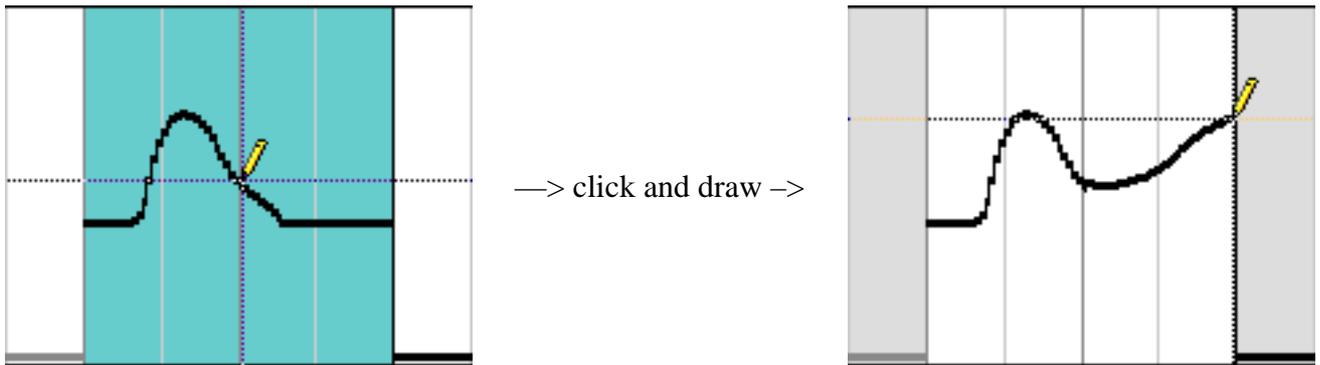


In addition to single controller events and linear controller transitions, **easy beat** also lets you draw freehand curves in controller views. To create an arbitrary shape, press the *ctrl* key (the mouse pointer appears as a red pen: ) and draw the desired curve, as shown in the following example:

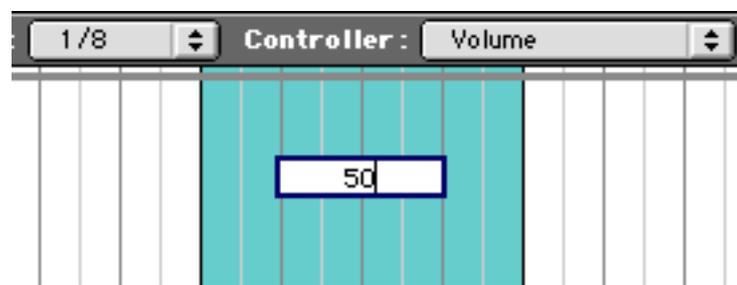


As soon as you release the mouse button, the newly drawn controller transition will become selected, and small steps appear in the controller transition. That's because **easy beat** optimizes the controller transition by replacing it with a series of controller events that are at least 1/128 note apart. The original shape is preserved but the data rate becomes low enough to allow playback at high speed without overloading the synthesizer.

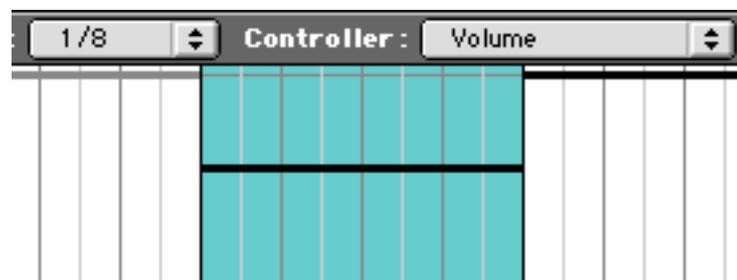
easy beat automatically turns the grid off when you draw with the pen. To constrain freehand drawing to a certain area, first select the range you intend to change with the  key, then draw within the selection (the mouse pointer appears as a yellow pen: ). During the drawing operation, everything outside the selected range will appear with a gray background, and drawing will be restricted to the white area:



If a controller range is selected, you can modify it by simply typing the new controller value(s). For example, you can select a volume controller range with the **⌘** key and then type “50” to set the volume to 50%:



When you press the enter or return keys, **easy beat** replaces the selected range with a flat line, without affecting any values outside the selected range:



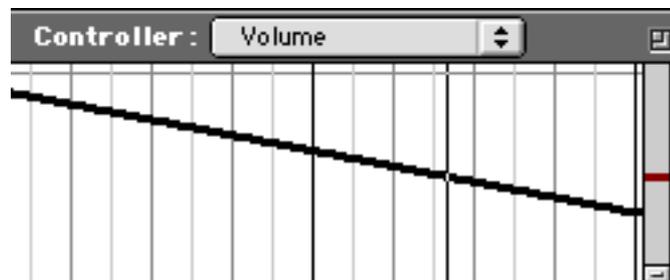
For most controllers, the values are the percentage of the maximum value, but they have a different meaning in the Pan and Pitch Bend controllers:

- **Pan:** 0 means “center”, 100 (or +100) is “far right” and –100 is “far left”. To start typing with the plus or minus sign, you cannot use the “+” and “-” keys on the numeric keypad, as these keys have a different meaning in **easy beat**.
- **Pitch Bend:** The value is the number of semitones, where 0 means “no change”, +1 means “up one semitone” and –2.5 means “down two and a half semitones”.

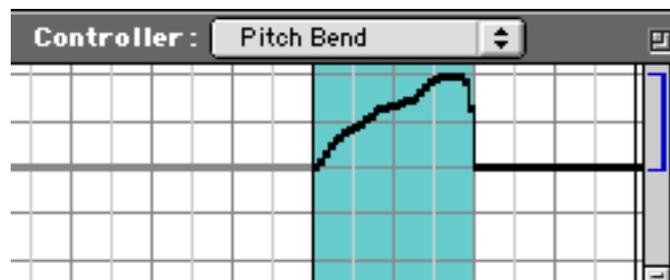
Using this technique, you can also create a linear slope or scale the selected range. The following summary shows all accepted input formats, where m and n represent arbitrary values:

- n** replaces the selected range with the value n . To set an entire track to a single controller value (for example, to set the reverb to 20% throughout the song), choose **Select All** from the **Edit** menu and then type the desired value.
- n-m** creates a slope that starts with the value n at the beginning of the range and ends with the value m . To create a slope that ends with a negative value (such as from far right to far left in a Pan controller), you must use two dashes: the first means “to”, the second is the minus sign for the second value (e.g. 100--100).
Creating a slope is not possible if the selected range is infinite (i.e., after the **Select All** menu command).
- *n** scales the selected range by the factor n , which can be a fractional number (e.g., “*2”, “*1.5” or “*.75”). You can also flip the range upside down by entering a negative factor. For example, you can reverse left and right in a Pan controller by typing “*-1”, and you can turn an upward semitone bend into a downward second bend with “*-2”.
- /n** scales the selected range by the factor $1/n$; in other words, divides the controller values by n . Again, n can be a fractional number and may be negative.
- *m/n** scales the selected range by the factor m/n . “*3/2” is equivalent to “*1.5”.
- Hint:** Scaling controllers in this way is particularly convenient in combination with controller templates. For example, you need only a single variant for each type of pitch bend template (such as slide-in, legato, smear bend). After inserting the template, simply type the desired scaling factor.

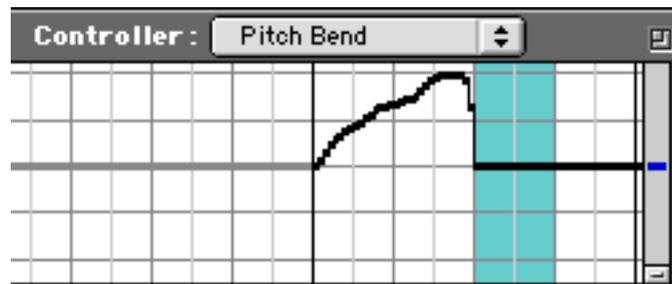
While a song plays, **easy beat** displays the current controller value in the right border of the controller view:



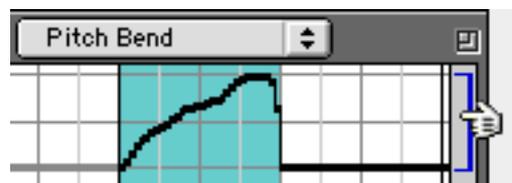
When a range is selected, **easy beat** displays the corresponding controller value(s) in the right border of the view:



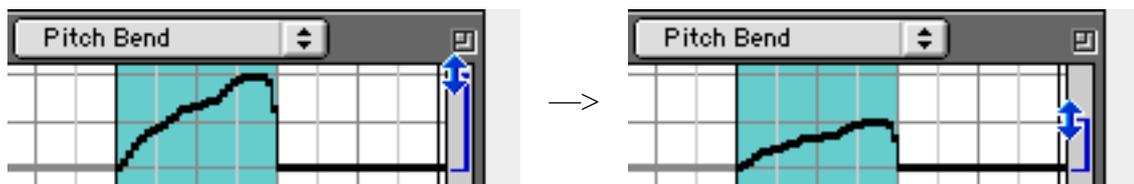
The blue bracket indicates the minimum and maximum values the controller assumes within the selected range. If there is only a single value, a horizontal line appears instead:



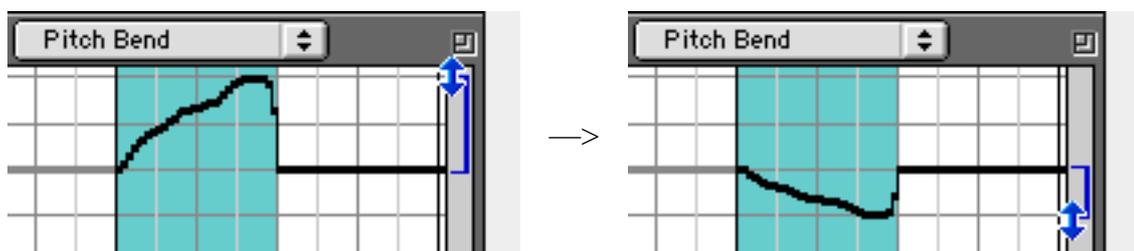
This indicator not only displays the value range but also lets you edit the range. Point at the single blue line or into the bracket to move the controller value(s) up or down:



You can also drag the top and bottom lines of the bracket up or down to scale the selected controller range:



You can even flip a controller range upside down by dragging the bracket's top below its bottom (or vice versa):



As usual, you can use the \uparrow key to snap the dragged border to some typical values, such as half semitones in the Pitch Bend controller.

This feature is quite convenient if you wish to make global changes to a controller. After you choose **Select All**, you will see if there is just a single value (single line) or if the controller assumes different values (bracket) during the song. Then you can change the value(s) by simply dragging them up or down.

4.7 Modifier Summary

The \uparrow , \rightarrow , ⌘ , *ctrl* and *caps lock* keys are sometimes collectively called *modifier keys*, as they often modify the meaning of a keystroke or mouse click. The following tables summarize the effects of these keys in the various views:

Mouse Clicks

	Keyboard	Score	TAB	Drum	Controller
\uparrow :		Click note: select or deselect Drag note: move horizontally			Snap to nearest suggested value
\rightarrow :		Click in empty area: select range			
		Drag note: copy instead of moving			
$\rightarrow\uparrow$:		Click in empty area: extend or shrink selected range			
⌘ :		Temporarily disable the grid			
			in fretboard: preserve pitch		
<i>ctrl</i> :		Click note: change velocity; with \uparrow : same velocity for <i>all</i> notes Click in empty area: change default velocity			Freehand drawing
<i>caps lock</i> :		Drag: create notes that are not part of the current key	in fretboard: preserve pitch		

Arrow Keys

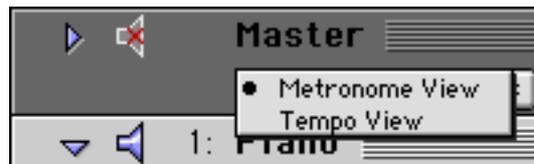
	Keyboard	Score	TAB	Drum	Controller
no key:	up/down one semitone	up/down one note line	up/down one string	up/down one instrument	
⇧:	up/down one octave	up/down one octave	up/down one string	up/down one instrument	
⌘ or ctrl:	up/down one semitone		up/down one string (same pitch)	up/down one instrument	

Arrow Keys

	Keyboard	Score	TAB	Drum	Controller
no key:	move note left/right by one grid position				
⇧:	move note by one grid position	left/right	move up/down by one fret	move L/R by one grid position	
⇨:	move note start by one grid position	move note L/R by one grid position	move note start by one grid position	move note L/R by one grid position	
⌘:	move by one grid position	note	end	move note L/R by one grid position	

5 The Master Track

Every **easy beat** document begins with a Master track that contains a metronome view and a tempo view:



Note: You can type **⌘-D** (for “drum”) to switch to the metronome and **⌘-K** (for “controller”) to switch to the tempo view if the Master track is hilited. You can also press the **⇧** key when you pull down the Track menu or press **⌘-⇧-D** or **⌘-⇧-K** to display both the metronome and the tempo views.

5.1 The Metronome View

The metronome track looks like a drum track, but it works differently:

- You cannot change the metronome’s instrument. The metronome will always play using a drum set.
- You cannot change the metronome’s view. It’s always shown in the drum view.
- The metronome doesn’t have a track number; you cannot delete it or move it below another track.

When you create a new **easy beat** document, the metronome track is preset with four “Metro” clicks at each quarter of the first measure. The first click has a velocity of 80, and the remaining three clicks play with a velocity of 60.

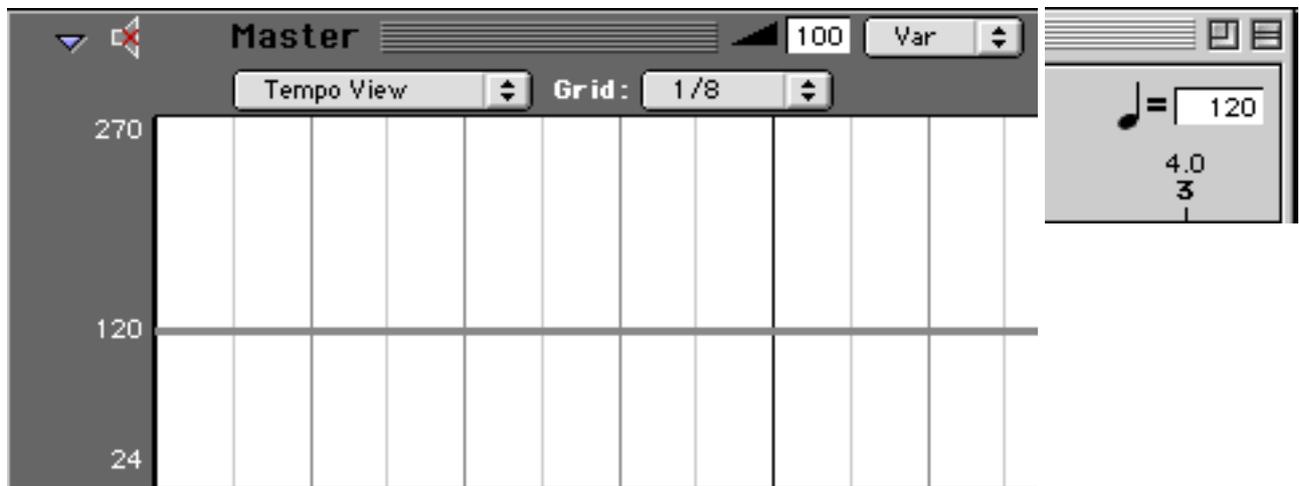
When you enable the metronome by turning the Master track’s speaker symbol on, the metronome will sound during the entire song, not just the first measure. You can think of the metronome track as being an endless repetition of the first measure’s contents. You can put further clicks in other measures, but they will never play.

The metronome is quite handy when you start a new song from scratch. First set the time signature to whatever you want, and then fill the first measure of the metronome track with clicks or drum hits of your choice. If a certain drum pattern is to be played over the entire song, you can enter that in the metronome track and don’t have to bother with filling the drum track with a repeating pattern.

Of course, you can also use the metronome for practicing. Preset the first measure to your liking, enter the desired tempo, set a loop over the first measure and let it play. Remember that you can set the tempo by clicking the note to the left of the tempo field a few times.

5.2 The Tempo View

The tempo view initially contains a gray horizontal line at the tempo that's shown in the song header:



The global tempo in the song header is the “nominal tempo”; all changes in the tempo view are relative to this value. The permitted range of tempo changes is from about 20% to 225% of the nominal tempo. In the example above, you can vary the tempo from 24 to 270 BPM.

Once you know how to edit controllers, you will immediately be able to change the tempo of a song. Just draw lines or select ranges and type the new tempo values.

If you change the nominal tempo when you have already made changes to the tempo controller, the tempo changes will become relative to the new tempo. For example, if you change the nominal tempo from 120 to 140 BPM, a range whose tempo was initially reduced to 100 BPM will now play at about 117 BPM ($100 \cdot 140 / 120 \approx 117$).

When you change the nominal tempo, the labels in the tempo controller's left border will also reflect the change.

We suggest that you set the nominal value to the tempo that's typical for the main sections of a song. Use the tempo controller only for those parts that should deviate from the nominal tempo.

6 Menu Commands

This chapter explains all menu commands from left to right.

6.1 Apple Menu



About easy beat...

This is the only item that **easy beat** adds to the Apple menu. Selecting this command shows the **easy beat** logo and the version number in the bottom left corner. There are two buttons in the bottom right corner:



The **OK** button closes the window, and the **Info...** button opens another window with more detailed information. This window also contains two buttons that make it easy for you to get in touch with us:



For these buttons to work, you must have the Internet Config Extension installed. **Visit Our Web Server** launches your web browser (unless it is already running) and takes you directly to the **easy beat** product page where you can find information about availability of new versions and other interesting stuff.

Send an Email Report launches your email program (unless it is already running) and creates a new message with the correct “To:” address and the subject “easy beat Report”. The message area will contain a few lines with information about your **easy beat** version as well as your hardware and software configuration. If you have a problem, this information makes it easier for us to help you. Enter your message below the “Comment:” line and send it to us.

Instead of opening the Info dialog from the **About easy beat** menu command, you can also use the commands **Visit macility** and **Send Email Report** from the web menu (see section 6.7 *Web Menu*).

If your copy of **easy beat** has not yet been registered, the “Info” dialog will always be shown when you launch **easy beat** and when you attempt to save or print a song with more than 15 measures. In this case, the dialog contains a “License Key” field. When you have received your license key, enter it here. The reminder will never be shown again, and you will immediately be able to save and print songs with more than 15 measures.

6.2 File Menu



New

Opens a window with a new untitled song. The song initially contains the mandatory master track and an empty untitled piano track. The song is preset with the time signature 4/4 and 120 BPM.

If a default song has been saved previously (see the **Save Default** command), the new song has the same content as the default song. To override these default settings and open a plain empty song instead, press the \uparrow key while selecting **New** or type $\text{⌘-}\uparrow\text{-N}$.

Open...

Displays the familiar open dialog and lets you open an existing song. The list of files that can be opened includes **easy beat** songs, stationery songs, MIDI files, templates and MIDI Map files.

Close

Closes the frontmost window (same as clicking the window's close box). If the window has not been saved yet, **easy beat** will ask you whether you want to save the song before closing it.

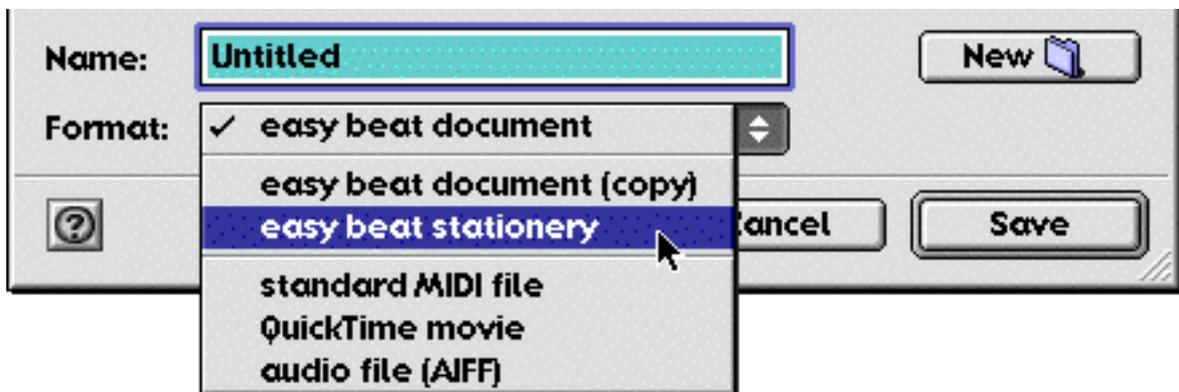
Shortcut: To close all song windows at once, press the **⌘-W** key while selecting the **Close** command. You can also press the **⌘-W** key while clicking a song window's close box or type **⌘-W** to close all song windows.

Save

Saves the frontmost song file. If the file hasn't been saved yet, you will be asked where and under which name the song should be saved (as if you had selected **Save As...**).

Save As...

Displays the usual "save file" dialog window to save the current song in a different place or under a new name. The bottom of the window contains a **Format** pop-up menu with the following choices:



Note: The bottom part of the save file dialog will look different if your system configuration does not include the navigation manager.

easy beat document is the default format. The current song will be saved as a new **easy beat** song file, and the file name will appear in the window's title bar.

easy beat document (copy) saves a copy of the current song under a different name but leaves the original song intact and active, so you can continue working with it. The window title doesn't change, and if you select **Save** subsequently, the song will be saved in the original file, not in the copy.

easy beat stationery is similar to **easy beat document (copy)**, but sets the “stationery” flag in the saved document. When you open the stationery song later, **easy beat** creates a new untitled song with the same content as the stationery song. When you edit that song and later save your changes, **easy beat** will always ask for a file name, thus preventing you from accidentally overwriting the stationery file.

Hint: You can also turn regular into stationery files and vice versa in the Finder: Select a song file, choose the “Get Info” menu command and check or uncheck the “Stationery Pad” check box below the comment field.

standard MIDI file converts the current song into the widely supported platform-independent MIDI file format. MIDI files can be read by most sequencer programs. They are platform-independent, so you can pass MIDI files to PC users. In this case, you should make sure that the file name ends with “.mid” or “.MID”, otherwise the file might not be recognized as a MIDI file on the PC side. For details about how **easy beat** songs are converted into the MIDI format, see chapter 7 *Import and Export of MIDI Files*. If you plan to publish MIDI files on a web server, please read the “MIDI on the Internet” document.

QuickTime movie converts the song into a format that can be opened with the QuickTime Player (or MoviePlayer, if you still have QuickTime 3 installed). If you want to embed a music track in a QuickTime movie, this file format is the best choice. Please note that “QuickTime movie” is a one-way conversion. **easy beat** can write that format, but it cannot import songs from QuickTime movies.

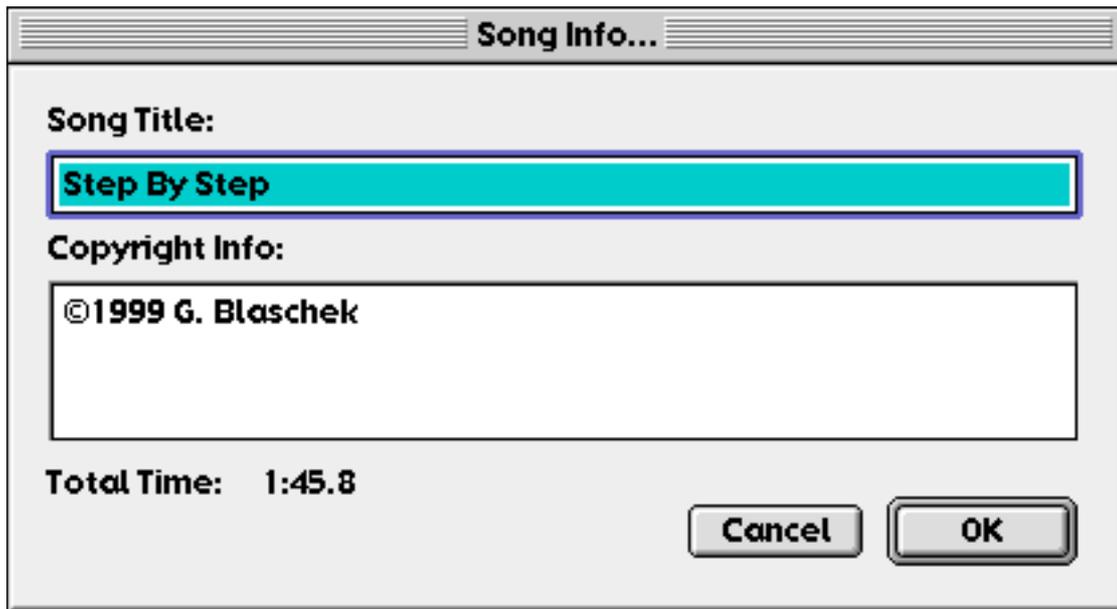
audio file (AIFF) converts the song into the “Audio Interchange File Format”, as defined by Apple. AIFF files created by **easy beat** are always in 16 bit stereo with a resolution of 44.1 kHz, as on a music CD.

Revert

Discards all changes since the song was last saved and restores the saved version. **Revert** has the same effect as closing the song without saving the changes and opening the original song file again.

Get Song Info...

Displays the following dialog window:



Song Title is the name of the song that will appear as a heading and in the page headers when the song is printed. If you leave the title field empty, the file name will appear on the printout.

Hint: If you don't want a song title to appear on the printed pages, enter a single space character in the title field.

Copyright Info can be used for additional information about the song, such as the creation date and the composer. This text does not appear on the printout, but will be included when you save the song as a MIDI file.

Note: Text in MIDI files should contain printable characters in the standard ASCII range only (i.e. characters with ordinal numbers 32 through 127). Umlauts, accented characters or special symbols (such as ü, é, ñ, Σ or ◇) may get lost when the MIDI file is later opened on a PC.

Total Time is the duration of the entire song, not counting the metronome in the master track.

When you select **Get Song Info...** the first time for a new song, the title and copyright fields will be empty. For songs downloaded with **easy beat**'s **Find Song** feature, the copyright info will contain the original URL.

Instead of selecting **Get Song Info...**, you can also click the “i” icon below the play button. If a song was imported from a MIDI file, a warning symbol may appear instead of the “i” icon. In this case, the info dialog will contain additional information about unsupported MIDI message that have been ignored by **easy beat**, as shown in the following illustration:

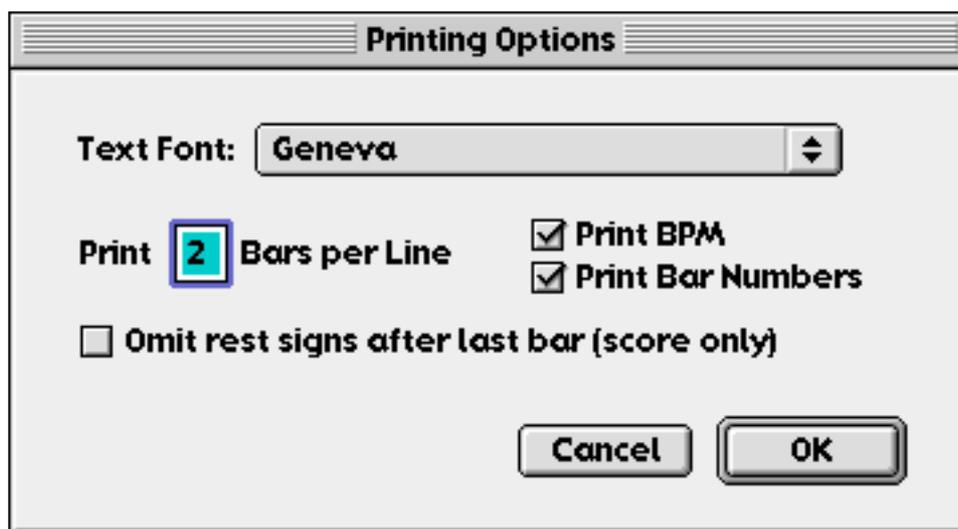


Page Setup...

Opens the usual dialog for adjusting printing settings. Unlike some other applications, **easy beat** does not add options to the **Page Setup** dialog. Additional settings can be specified with the **Printing Options** dialog.

Printing Options...

Opens the following dialog that lets you specify additional settings for printing songs:



The **Text Font** pop-up menu lets you specify which font should be used for the song title, the page headings, track names and bar numbers. This setting does not affect the chord names in chord views and the fret numbers in TAB views; these items always appear in Geneva.

Print n Bars per Line lets you specify how many measures should be drawn in a line. All measures appear with the same width on the printed pages, no matter how many notes they contain. Depending on the density of the notes, the paper size, the paper orientation and the scaling factor (as entered in the **Page Setup** dialog), more than 2 measures may fit in a line. Try different settings and check the effect in the printing preview window (see below).

Print BPM lets you turn the tempo display on and off. If turned on, it appears on the first page and looks like this:

♩ = 120

Print Bar Numbers lets you turn the bar numbers on and off.

Omit rest signs after last bar affects the appearance of empty measures after the end of the song. Normally, printing ends with the last measure containing notes, but you can force **easy beat** to print extra measures by entering a loop range that extends beyond the end of the song. If the **Omit rest signs after last bar** is off, all these extra measures will be filled with rest signs in score views. If the option is on, these measures are left empty. This can be convenient for printing empty note sheets or if you wish to continue working on a composition with pencil and paper.

Print...

Prints all currently visible views in the same order as shown on the screen. If these views belong to different tracks, the track names are printed on each page. If all views belong to the same track, the track name is omitted.

easy beat tries to fit as much on a page as possible. If the height of the visible views is less than half of the available space on a page, the remaining space is filled with additional measures, otherwise the next measures will print on the following page. If you print a score for many instruments, not all of them may fit on a page. In this case, **easy beat** uses extra pages for the remaining views.

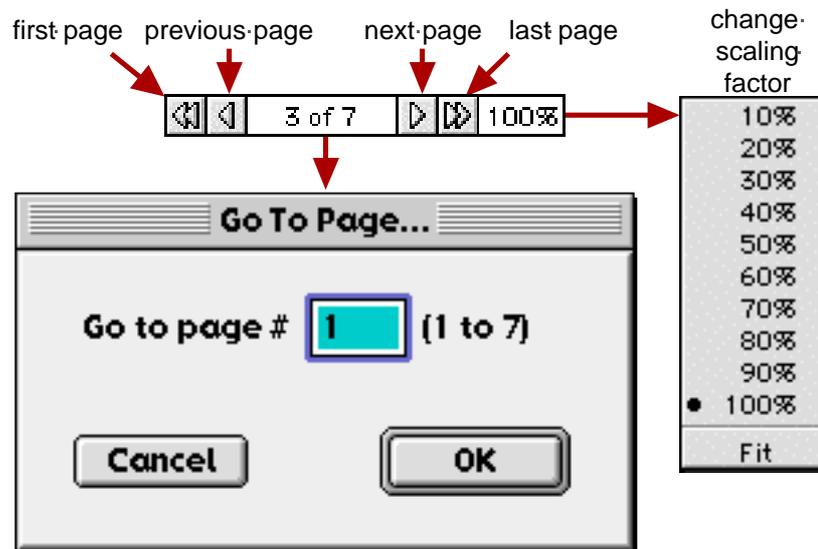
Note: The EasyNotes font must be installed for printing. If it is not installed, strange symbols will appear on the printed pages.

Printing Preview

Opens a window that shows what will appear on the printed pages. The following reduced screen snapshot shows an example of such a preview window.

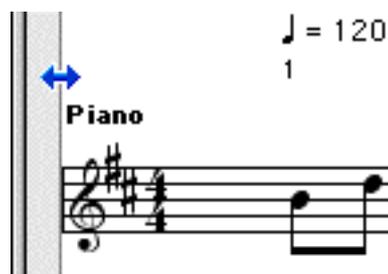


The bottom left corner of the preview window contains navigation buttons that let you jump from page to page, as shown in the following illustration:



The printing preview initially shows the printed page in full size (100%). Depending on the size of your monitor, you may need to use the scrollbars to see the entire page. To see an overview of the whole page, you can reduce the size of the preview. Click the percentage field and select the desired scaling factor from the pop-up menu. If you select **Fit**, the preview is reduced to fit entirely in the window. If you resize the window, the preview is immediately scaled to match the new window size.

Depending on which printer you use, not all of the page can be used for printing. This leaves an unusable margin around the printable area, which is shown as a gray border in the preview window. As **easy beat** normally uses the entire printable area, the resulting margins will often be too small for binding. To make the margins wider, point at them and drag them inward:



When you save your document, **easy beat** remembers these margins along with the **Page Setup** and **Printing Options** settings. When you later change the page size (for example, by switching to a different paper size or changing the scale factor), the margins are adjusted accordingly.

If you point somewhere within the printable area of the preview window, a crosshair cursor appears. You can now click and draw a selection rectangle around an area of the preview:



When you choose **Copy** from the **Edit** menu, the selected area is copied to the clipboard as a picture. You can then paste this picture into a word processing document.

Note: The selected part is copied as a picture that uses the EasyNotes font for notes. If you do not have this font installed, strange symbols will appear in the word processing document.

To fine-tune the selected area, you can click near its border to expand or shrink the selection.

The notes and the text always appear in the same size in a preview window. If you specify a scaling factor of 50% in the **Page Setup** dialog, the image will not be scaled, but the printable area will appear with twice the normal size.

As long as the preview window is open, its contents will be updated whenever you make a change to the song. That may be acceptable while you are preparing a song for printing, but it will cause irritating delays and flickering of the preview window during normal editing operations. We therefore recommend that you close the preview window when you don't need it.

Hint: When you select **Printing Options** while a preview window is open, all changes in the options dialog are immediately reflected in the preview.

Save Default

Saves the current song under the name “easy beat Default” in the Preferences folder. If such a file already exists, it is replaced without a warning.

When you create a new song, **easy beat** creates a copy of the “easy beat Default” file and opens it in an untitled window. To override this behavior (i.e., to create a plain empty song instead), press the \uparrow key while selecting **New** from the **File** menu or type \mathbb{C} - \uparrow -N.

To modify the default song, open a new song, change it as needed and select **Save Default** again. To get rid of the default song, remove the “easy beat Default” file from the Preferences folder.

Quit

Ends your current **easy beat** session. If you have any unsaved songs open, **easy beat** will give you a chance to save them before quitting.

6.3 Edit Menu

Edit	
Undo Move	⌘Z
Cut	⌘X
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Select Notes...	
Align To Grid	⌘G
Smart Align	⌘M
Scale...	
Insert Template	▶
Save As Template...	
Insert Bars...	
Delete Bars...	
Duplicate Bars...	

Undo

Reverts the most recent modification. The verb after “Undo” tells what the latest change was. **easy beat** provides only single-level undo; if you select **Undo** again, the menu command changes to **Redo**.

The undo operation affects only changes to the content of a song. Changes to the appearance (such as collapsing views and scrolling) cannot be undone. **Undo** can repair changes to single tracks only. Certain operations (such as **Delete Bars...**) cannot be undone. **easy beat** will warn you in such cases.

Normally, **Undo** reverts only a single operation, but there is one exception: When you use the **Smooth** command on a controller range multiple times in a row, all these invocations are treated as a single operation and are undone in one step.

Cut

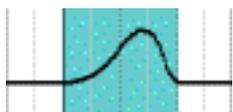
Is equivalent to copying the current selection to the clipboard (see **Copy**) and then deleting the current selection (see **Clear**).

Copy

Stores the content of the current selection in the clipboard. Depending on the type of view and the kind of selection, **Copy** has one of the following effects:



Individual notes: Only the notes (with their pitch, velocity, duration and position relative to the beginning of the measure) are copied. Controller changes that overlap with the notes are ignored. Copied notes can be pasted in any score, keyboard, TAB or drum view (but not in chord and controller views). The notes are inserted in the first visible measure, where the original offset from the beginning of the measure is maintained. If a range selection is present, the notes are inserted at the beginning of the selection.



Controller transitions: If a range is selected in a controller view, only the events of the currently shown controller within the range are copied. **easy beat** remembers the length of the selection and the type of controller; the copied controller transition can be pasted in a selected range of a controller view of the same type only. If the length of the destination range is different from the original range, the controller transition will be scaled.



Selected range: If a range is selected in a score, keyboard, TAB or drum view, *everything* in this range is copied. This includes all controller events and all notes starting within the range (notes starting before and extending into the range will be ignored). **easy beat** remembers the length of the selection. The clipboard's content can be pasted in any score, keyboard, TAB or drum view only if a range is selected. If the length of the destination range is different from that of the original range, the notes and controller transitions will be scaled.

Paste

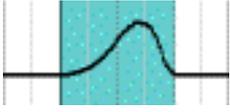
Inserts the clipboard's content in the current track. See the description of the **Copy** command for details.

Clear

Deletes the content of the current selection. Hitting the delete or backspace keys is equivalent to selecting **Clear** from the **Edit** menu. Depending on the type of view and the kind of selection, **Clear** has one of the following effects:



Individual notes: Only the notes are removed. Controller changes that overlap with the notes are not deleted.



Controller transitions: If a range is selected in a controller view, only the events of the currently shown controller within the range are deleted. The controller value at the beginning of the range will then extend over the entire range (shown as a horizontal line).



Selected range: If a range is selected in a score, keyboard, TAB or drum view, *everything* in this range is deleted. This includes all controller events and all notes starting within the range (notes starting before and extending into the range will not be removed).

Select All

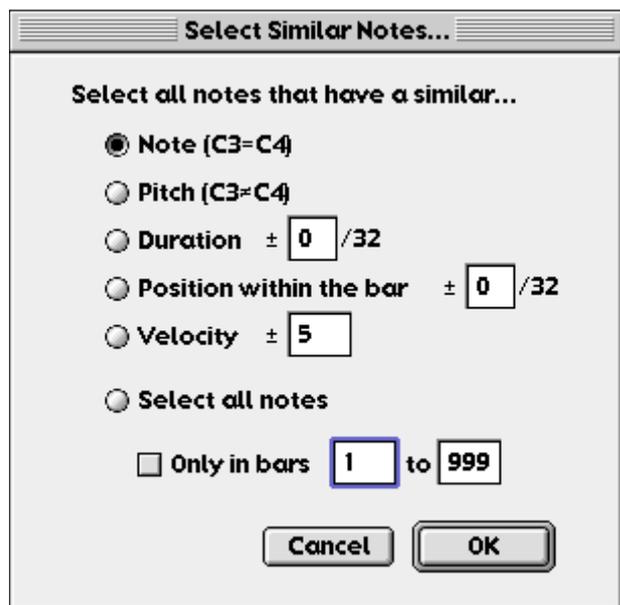
Selects everything in the current view. In a controller view, the result will be a range selection that starts at the beginning of the song and extends into “infinity”. In a score, keyboard, TAB or drum view, all notes are selected. To select the entire track as a range (including all controller events), press the \uparrow key while choosing **Select All** or type $\text{⌘}-\uparrow-A$.

When you paste a previously copied range into an infinite range selection or paste an infinite range into a selection with a finite length, **easy beat** does not scale the clipboard’s content but rather inserts it at the beginning of the selection.

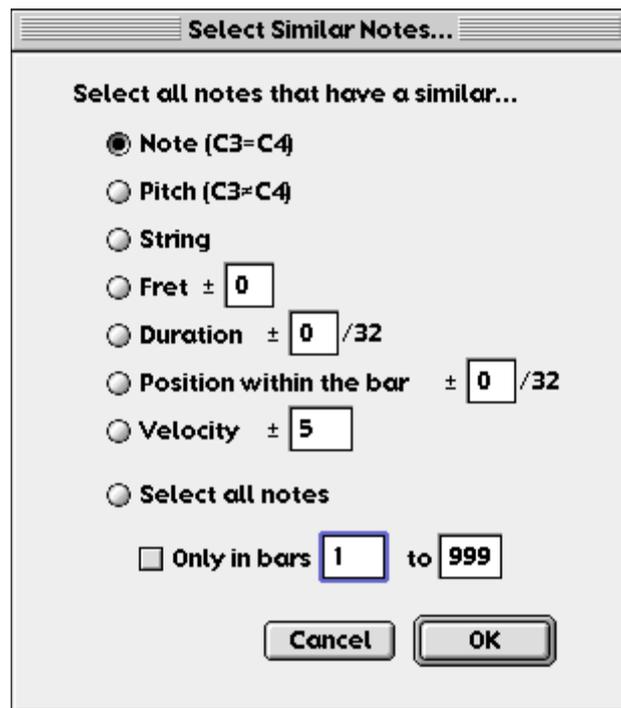
Note: There is no menu command to deselect the current selection. To do that, hit the *esc* key.

Select Notes...

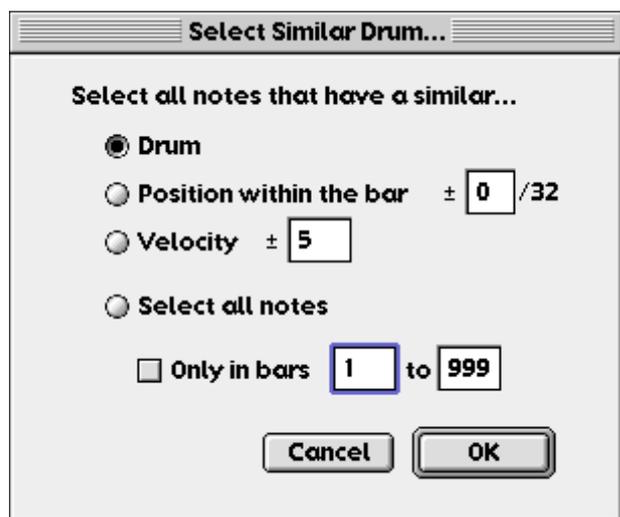
Selects all notes that are similar to the currently selected note(s). What “similarity” means can be specified in the dialog that appears when you select the menu command. The dialog offers a couple of options that vary depending on the type of the current view:



score and keyboard view



TAB view



drum view



when nothing is selected

These options have the following meanings:

- **Note (C3=C4):** All notes with the same note name will get selected. If a D is selected, all other Ds will be selected, too; the octave doesn't matter. If multiple notes are selected (for example, a D and an E), all notes matching the selection will get selected (all Ds and Es, but not D#s).

- **Pitch (C3=C4):** All notes with the same pitch will get selected. If a D is selected, all other Ds in the same octave will be selected, too. If multiple notes are selected (for example, a D4 and an E3), all notes matching the selection will get selected (all D4s and E3s, but no D3 or E4).
- **Duration:** All notes with the same duration will get selected. If you leave the tolerance field at 0, all notes must have exactly the same duration to be included in the selection. If you enter the value 2, notes may be up to 1/16 shorter or longer than the original note. If multiple notes are selected, a note will get selected if it is not shorter than the shortest and at not longer than the longest selected note. For example, if a quarter and a half note are selected initially, the resulting selection will contain all notes between and including 1/4 and 1/2 (including dotted quarters). If a tolerance is entered in this case, it extends the entire allowable range by the specified duration.
- **Position within the bar:** All notes with the same offset relative to the beginning of the measure will get selected. If you leave the tolerance field at 0, all notes must have exactly the same offset to be included in the selection. If you enter the value 2, notes may be up to 1/16 closer to or further away from the bar than the original note. If multiple notes are selected, a note will get selected if it begins between the first and the last selected note. If a tolerance is entered in this case, it extends the entire allowable range by the specified offset.
- **Velocity:** All notes with the same velocity will get selected. If you leave the tolerance field at 0, all notes must have exactly the same velocity to be included in the selection. If you enter the value 10, the velocity of notes may be up to 10 higher or lower than that of the original note. If multiple notes are selected, a note will get selected if its velocity is within the range defined by the notes with the lowest and highest velocity. If a tolerance is entered in this case, it extends the entire allowable range by the specified value.
- **String (TAB view only):** All notes that are played on the same string will get selected. If multiple notes on different strings are selected, a note will get selected if it is played on the same string as one of the selected notes. For example, if two notes on the A and G strings (in standard guitar tuning) are selected, all other notes on the A and G strings will get selected, too, but not notes on the D string between A and G.
- **Fret (TAB view only):** All notes that are played on the same fret will get selected. If you leave the tolerance field at 0, all notes must be played on exactly the same fret to be included in the selection. If you enter the value 2, notes up to two frets below and above will be included, too. If multiple notes are selected, a note will get selected if it is played within the fret range defined by the notes with the lowest and highest fret numbers. If a tolerance is entered in this case, it extends the entire allowable range by the specified number of frets.
- **Drum (drum view only):** All notes that are played on the same drum instrument will get selected. If multiple notes for different instruments are selected, all notes on the same lines as any selected note will get selected.
- **Select all notes:** All notes will get selected (similar to using the **Select All** menu command). This option is the only choice when no notes are selected in the beginning. It is most useful in combination with the **in bars...** option.
- **in bars ... to ...:** Notes matching the selected criteria will be included in the selection only if they start within the specified bar range.

Shortcut: Instead of choosing **Select Notes...** from the **Edit** menu, you can also double-click a sample note.

Align To Grid

Moves the beginning and end of all selected notes to the nearest position as specified by the current grid setting. If both the beginning and end of a selected note would snap to the same position (thus leading to a duration of 0), the duration of the note is set to the same length as the current grid. For example, if you try to snap a 1/8 note to a 1/1 grid, the note will become a whole note.

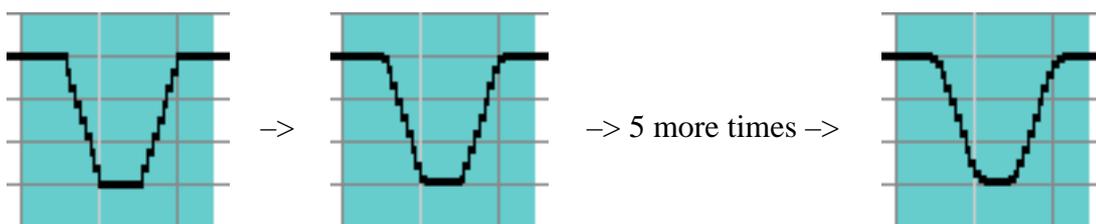
Smart Align / Clean Up Notes / Smooth

Depending on the current view and the current selection, this command performs three different operations. The title of the menu command will change to reflect the operation, but the shortcut (**⌘-M**) will remain the same.

When notes are selected in a score, keyboard, TAB or drum view, the command will read **Smart Align**. It corrects timing errors that occurred during a real-time recording from a MIDI instrument. **Smart Align** tries to guess the desired positions of all selected notes. It starts with long notes (with a duration of 1/4 and more), as the correct positions of these notes are easier to estimate, and then proceeds with the shorter notes between them. When **Smart Align** aligns the notes, it also tries to guess if the notes are straight ones or triplets. When all notes have their correct positions, their durations are adjusted. In particular, small gaps or overlaps are eliminated by making notes longer or shorter.

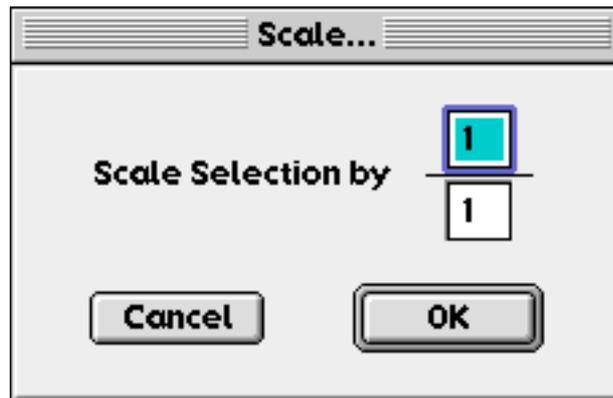
When no notes are selected in the current track, the menu command becomes **Clean Up Notes**. It is possible to create two notes of equal pitch which partially or completely overlap. Since MIDI (and QuickTime) cannot properly handle such cases, overlapping notes can abruptly cut off or “hang” indefinitely (i.e., they don’t stop playing). **Clean Up Notes** corrects such errors by shortening notes that overlap with following notes that have the same pitch. It also removes notes with a duration of 0.

When a range is selected in a controller view, the menu command becomes **Smooth**. It replaces the selected range with a series of controller events that are at least 1/128 apart. Abrupt changes are transformed into a series of events that simulates a continuous transition. The effect becomes more pronounced when the **Smooth** command is executed repeatedly:



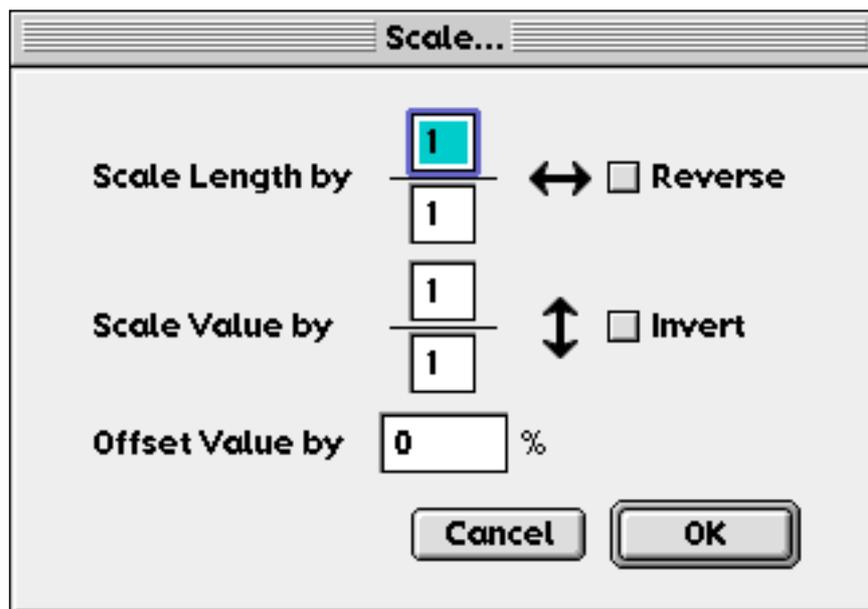
Scale...

When notes are selected in a score, keyboard, TAB or drum view, the following dialog appears:



The positions and durations of the selected notes will be scaled as specified by the fraction. For example, 2/1 makes the notes twice as long and stretches the entire sequence to twice the original duration. The starting position of the first selected note is used as an anchor point; the position of the first note does not change, and all other notes change relative to this position.

When a range is selected in a controller view, the **Scale** command opens the following dialog:



The first part (**Scale Length**) affects the duration of a selected controller section. The **Reverse** check box to the right reverts the order of the controller events (i.e., flips the selected range horizontally).

When a controller transition is shortened, the last value is used to fill the remaining space:



When a controller transition is stretched, it extends over other parts that follow and overwrites them:



The second section (**Scale Value**) affects the value. The **Invert** option turns the selection upside down.

The third part (**Offset**) adds a fixed amount to the controller value after it has been scaled. The value is given as a percentage of the entire controller range. For Pitch Bend, 100% corresponds to one semitone; i.e., an offset of -200% moves the controller transition down by a second.

Insert Template

Inserts a predefined section (a series of notes, a controller transition or a combination of both) in the current view. Such “templates” are special **easy beat** files that must be in the “Templates” folder, which in turn must be in the same folder as the **easy beat** application. The **Insert Template** command has a submenu that lists all templates that can be inserted in the current situation.

There are eight types of templates:

- **Note templates** contain a series of notes. They can be inserted in a score, keyboard or TAB view. The notes appear in the first visible measure. If a range is selected, the notes are inserted at the beginning of the range.
- **Drum templates** contain a series of drum notes. They can be inserted in a drum track only. The notes appear in the first visible measure. If a range is selected, the notes are inserted at the beginning of the range.
- **Note range templates** contain a section consisting of notes and controller events. They can be inserted in a score, keyboard or TAB view only when a range is selected. The entire selected range (including all notes and controller transitions) is replaced with the template’s contents; the template is scaled to fit the length of the selected range.
- **Drum range templates** contain a section consisting of drum notes and controller events. They can be inserted in a drum track only when a range is selected. The entire selected range

(including all notes and controller transitions) is replaced with the template's contents; the template is scaled to fit the length of the selected range.

- **Pan controller templates** contain a transition of a “Pan” controller. They can be inserted in a selected range within a “Pan” controller view only. The template is scaled to fit in the selected range.
- **Pitch Bend controller templates** contain a transition of a “Pitch Bend” controller. They can be inserted in a selected range within a “Pitch Bend” controller view only. The template is scaled to fit in the selected range.
- **Tempo change templates** contain a series of tempo changes. They can be inserted in a selected range within the tempo view only. The template is scaled to fit in the selected range.
- **Value controller templates** contain a transition of a controller of any other type. They can be inserted in a selected range within a controller view of the following types: modulation, breath, foot pedal, portamento time, volume, balance, expression, aftertouch, sustain, sostenuto, soft pedal, reverb, tremolo, chorus, celeste and phaser.

Save As Template...

Saves the content of the selection as a template file. The command displays the usual “save file” dialog and takes you directly to the “Templates” folder. If you wish, you can save the new template in a subfolder within the “Templates” folder. If you save it outside the “Templates” folder, **easy beat** will not show the new template in the **Insert Template** submenu.

Which kind of template is created depends on the type of selection and the current view (see the description of the **Insert Template** command, above):

- When used in a Pan or Pitch Bend controller view, a **Pan** or **Pitch Bend controller template** is created.
- When used in a tempo view, a **tempo change template** is created.
- In any other type of controller, a **value controller template** is created.
- If the current instrument is a drum set, selected notes are saved as a **drum template**; when a range is selected, a **drum range template** is created instead.
- If the current instrument is anything else (i.e., not a drum set), selected notes are saved as a **note template**; when a range is selected, a **note range template** is created instead.

Insert Bars...

Displays the following dialog for inserting new measures in the current song:



This command moves all measures (starting with the number after “before”) to the right by the number of measures specified after “Insert”, thus inserting some empty measures.

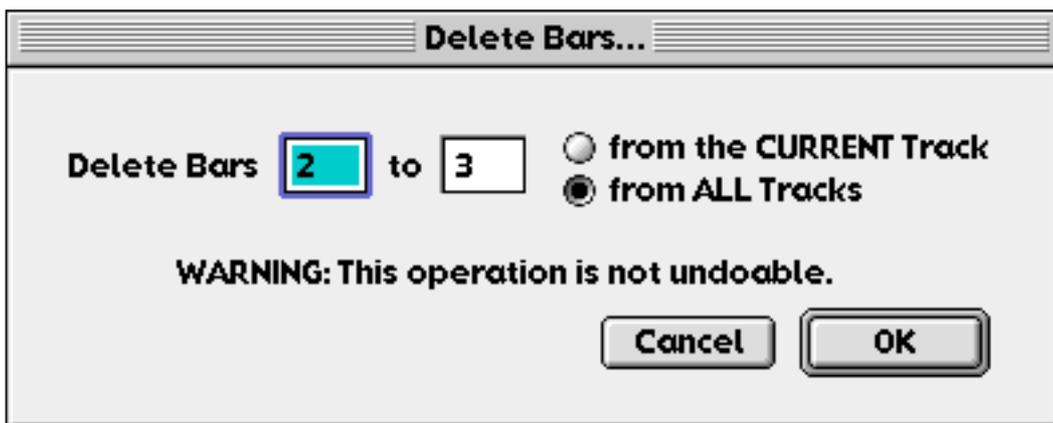
The radio buttons to the right let you specify if the change should affect the current track only or be applied to all tracks (except the metronome).

The number of bars and the insertion point are preset with the current length of the loop range and the loop start, respectively.

Note: If you insert measures before the first bar, controller events at the very beginning of the song are *not* moved to the right. These controller events are assumed to be initial values and are therefore left at the beginning of the song.

Delete Bars...

Displays the following dialog for removing measures from the current song:



This command deletes all notes and controller events in the measures within the specified range. The measures to the right of the last deleted measure (from #4 in this example) are moved to the left to close the gap.

The radio buttons to the right let you specify if the change should affect the current track only or be applied to all tracks (except the metronome).

The numbers of the bar range are preset with the current loop range.

Note: If you delete the first measure, controller events at the very beginning of the song are *not* deleted. These controller events are assumed to be initial values and are therefore left at the beginning of the song.

Duplicate Bars...

Displays the following dialog for creating copies of measures:



Creates the desired number of copies of the specified bar range and inserts them before the measure with the number after “before bar”. The measures starting with this number are moved to the right to make enough space available for the copies.

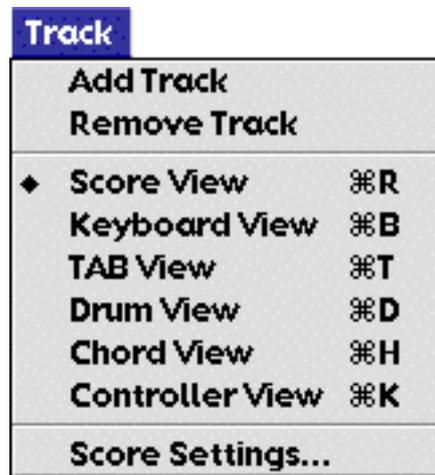
The radio buttons to the right let you specify if the change should affect the current track only or be applied to all tracks (except the metronome).

The numbers of the bar range are preset with the current loop range, and the destination bar is preset with the first measure that follows the loop.

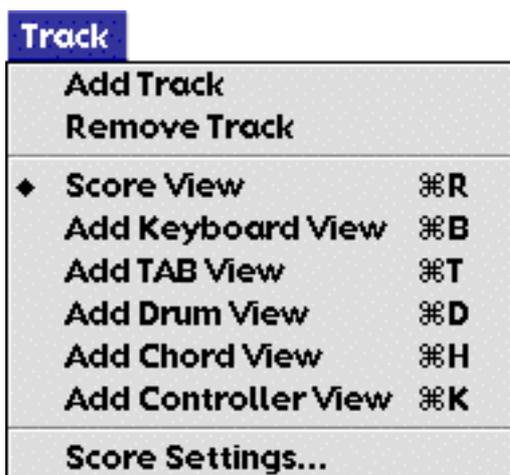
Note: If you copy the first measure and/or insert measures before the first bar, controller events at the very beginning of the song are *not* copied or moved. These controller events are assumed to be initial values and are therefore left at the beginning of the song.

6.4 Track Menu

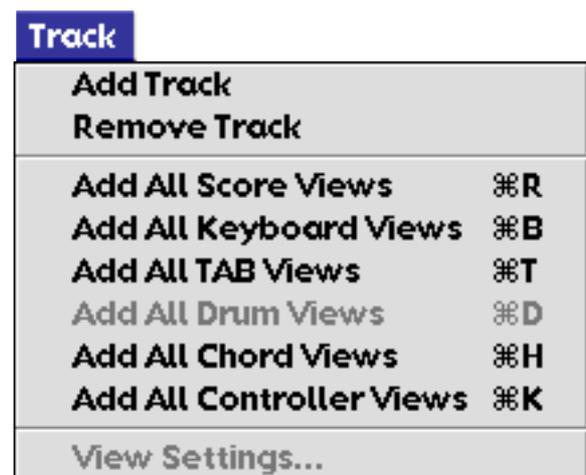
The **Track** menu is used to insert and remove tracks and to switch or add views. Some commands in this menu change if the \uparrow key or the \downarrow key is pressed when the menu is pulled down:



“normal” content



with the \uparrow key



with the \downarrow key

Add Track

Inserts a new track immediately below the current track. The new track appears in the score view and is preset with the Acoustic Grand Piano.

If you wish to change the track order later, point into the track header (the mouse pointer appears as ) and drag the track up or down.

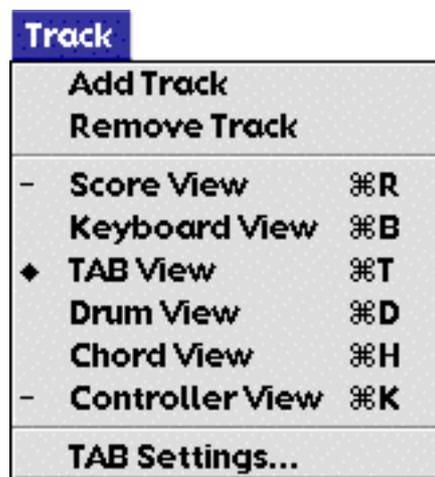
Remove Track

Permanently removes the current track. Since this operation cannot be undone, you will be warned first.

... View / Add ... View / Add All ... Views

The type of the current view is always shown with a diamond mark in the **Track** menu. To switch to a different view, simply select the desired view type from the menu. For example, if a score view is currently active, it will be replaced with a keyboard view of the same track when you select **Keyboard View** or type **⌘-B**.

When you press the **⇧** key while selecting from the menu, some view types will appear with the verb **Add** in the menu. If you select such a command, a new view will be created and inserted immediately below the current view, thus creating multiple views of the same track. If multiple views are currently visible, all visible view types will be marked with a dash, and the current type will have the usual diamond mark in front of it, as shown in the following example:



If you select **Score View** or **Controller View** from the menu, the respective view is made active. If you select any other view type, the currently active TAB view is replaced with the selected view.

When you press the **⇧** key, the menu items will read **Add All ... Views**. If you select, for example, **Add All Controller Views**, controller views are added to *all* tracks, but drum tracks are treated differently:

- The **Add All Drum Views** item is always disabled because a drum view doesn't make any sense for "regular" instruments.
- Drum tracks are not affected when you choose **Add All** for score, keyboard, TAB or chord views, as these view types are useless for drums. Only controller views can be added to drum tracks in this way.

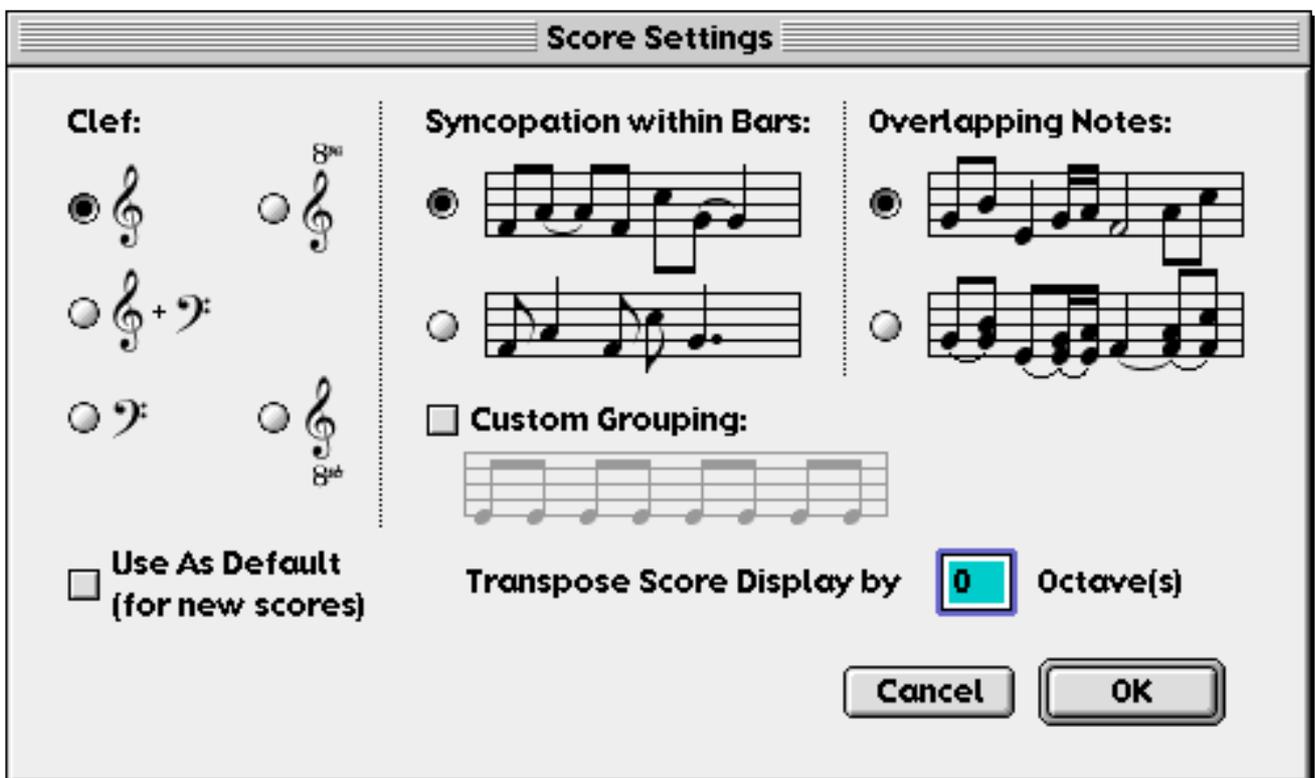
To remove a view, click the view's small close box. If you press the  key while clicking the close box of a, say, controller view, the controller views are removed from *all* tracks. This is the reverse operation of the **Add All ...** menu command described above.

View Settings

The last menu command in the **Track** menu depends on the type of the current view. It lets you adjust certain settings for the current view. There are no such settings for keyboard, chord, drum and most controller views, so the menu command appears dimmed in these cases.

Shortcut: Instead of selecting the **Settings** command from the Track menu, you can also double-click the border to the left of a view.

Score Settings...



You can choose among five different clefs in the left section. You can select the violin clef, the bass clef or display both of them in the same view. You can also use a violin clef with the “8va” or “8vb” notation, where “8va” above the violin clef means that the notes should be played one octave higher than written, and “8vb” below the clef means that the notes should be transposed down by one octave.

The **Syncopation** column gives you two choices for the treatment of syncopes within a measure. When the first option is selected, **easy beat** makes sure that all notes have even positions. For

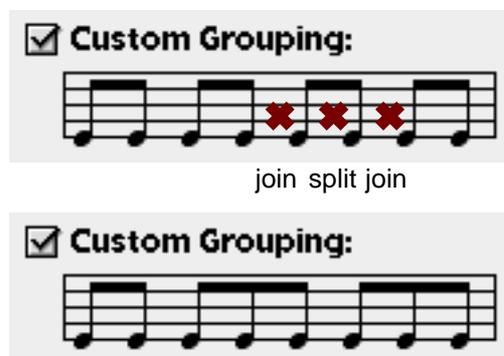
example, a quarter note can only appear at a quarter position. If this is not the case, the note is split in two tied eighth notes. Likewise, a dotted quarter note that begins at an eighth position appears as an eighth note in front of a quarter note. Similar rules apply to 1/2, 1/8, 1/16 notes and triplets.

The second option relaxes these restrictions. Notes always appear with their correct values as long as they fit entirely within a measure. “True syncopes” (notes that begin in one measure and end in the next) will still be displayed as separate tied notes.

Whereas the first style better reflects the rhythmic character of a piece, the second style is sometimes easier to read (in particular when you use an odd time signature). It is often a matter of taste which style you prefer.

The next setting, **Overlapping Notes**, defines how long notes should be treated when they overlap with following notes. The first option displays the notes as if no overlapping occurred. Some notes will appear with a wrong duration, and even the sum of all note durations may be wrong, but this type of display is easier to work with in the score view. The second option splits the long notes into shorter tied notes. The representation is accurate, but it generates many notes and may thus be more difficult to edit.

The **Custom Grouping** option lets you define which groups of eighth notes within a measure should be joined with horizontal bars. By default, **easy beat** divides each measure into quarters, which may leave an extra eighth at the end when the time signature is $x/8$ where x is an odd number. To override this default grouping, enable the **Custom Grouping** checkbox. The notes below will then turn black. Now click between the notes to make or break connections. For example, you could leave the first two notes as they are and arrange the remaining six notes in two groups of three eighth notes. The following illustration shows how you can create this custom grouping with just three clicks:



To revert back to the default grouping, simply turn the **Custom Grouping** checkbox off. The notes will turn gray and revert to the default arrangement.

Finally, you can transpose the score display by up to two octaves up or down, as shown in the following illustration:



transpose by -1 octave



no transposition



transpose by +1 octave

Transposing the score display actually means that the note lines are drawn in different positions; the notes themselves remain the same. Score transposition is typically used to adjust the score display for different instruments. For example, guitar scores are written one octave higher than piano scores, so “+1 octave” would be the correct setting for guitar.

If you enable the **Use As Default** check box, the current score settings (except the grouping) will be automatically used whenever you create a new track.

TAB Settings...

TAB Settings

Tuning:

E5		
B4		
G4		
D4		
A3		
E3		

Preferred Fret:

Standard Guitar
4-String Bass
5-String Bass (+Low B)
5-String Bass (+High B)

Duration Display:

none -5—

outline -5—

filled -5—

Fix Impossible Notes

Recalculate Selection

Recalculate All

Use As Default (for new TABs)

Cancel

OK

The **TAB Settings** dialog supports instruments with up to 8 strings. Enter the desired tuning in the appropriate fields. The numbers after the note names represent the octave, where A4 is standard A (440 Hz). To set up the TAB view for open E tuning, replace “A3” with “B3”, “D4” with “E4” and “G4” with “G#4”. You can also use the buttons for some frequently used tunings.

When you change the tuning, **easy beat** tries to repair all notes such that they can be played with the new tuning. In addition to that, you can use the radio buttons **Recalculate Selection** and **Recalculate All** to force **easy beat** to find the best string/fret combination for all or just the selected notes. In this case, **easy beat** uses the **Preferred Fret** field to find that string that allows to play the notes as close to the specified fret as possible. The value in the **Preferred Fret** field is also used whenever you create new notes:

- When a note is created in the TAB view, it is preset with the preferred fret.
- When a note is created in any other view, the fret/string combination is automatically computed such that the fret number is as close to the preferred fret as possible.

Finally, you can specify how the duration should be displayed.

The current settings are remembered for newly created TAB views when you click OK while the **Use As Default** check box is enabled.

Pitch Bend Range...

When you work with the Pitch Bend controller, the controller range initially goes from -2 to +2 semitones. **easy beat** supports a pitch bend range up to ± 2 octaves. To change the visible range, select **Pitch Bend Range...** from the **Track** menu:



The number you enter here affects the visible part of the controller range only. If the visible range is too small, controller transitions may become invisible if their values are outside that range. The values will still be there, you just won't be able to see them.

6.5 Variation Menu

The **Variation** menu lets you apply stylistic variations to songs. A variation modifies the way in which a song (or just a single track) sounds; it does not alter the content of a track or change the appearance of the notes.



Every track also has a variation pop-up menu with the same content:



Variations can be turned on and off. An active variation is shown with a check mark in the pull-down menu and with a bullet in a track's pop-up menu. If one or more variations are active for a track, the pop-up menu appears with the title " nV " instead of "Var", where n is the number of active variations:



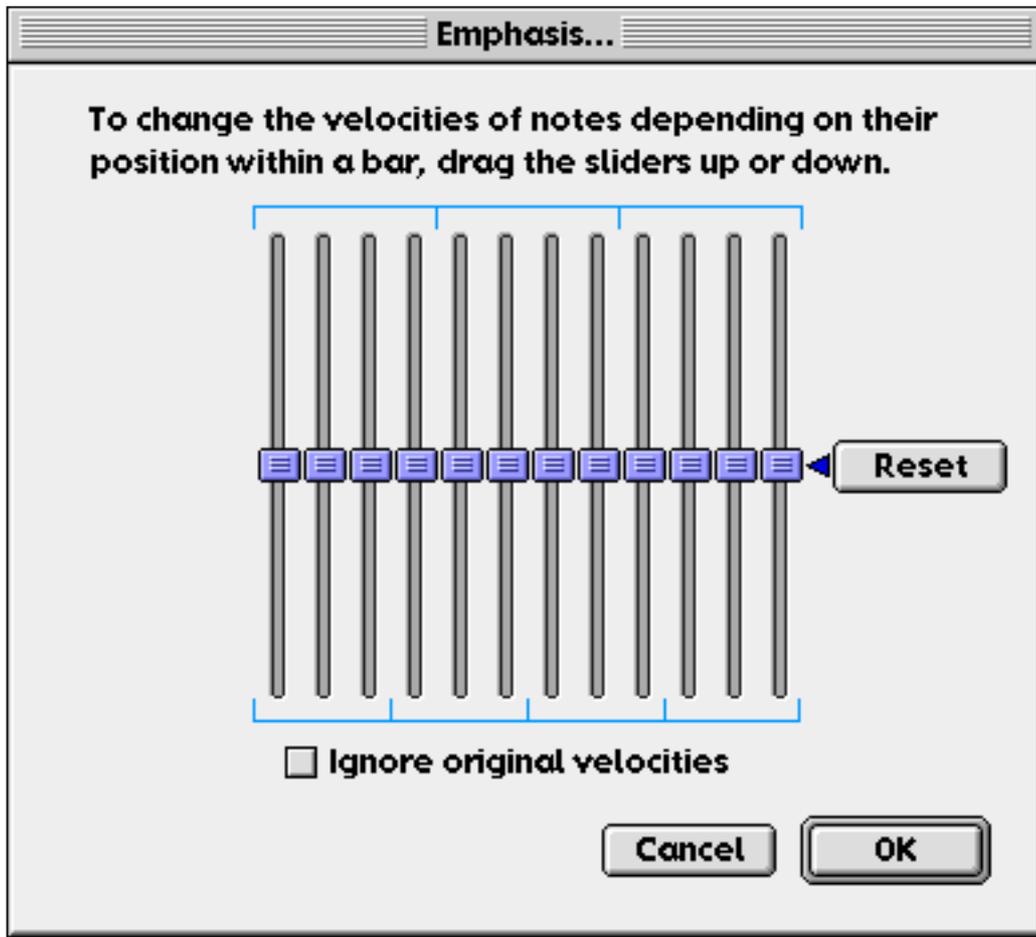
The last two variations are simply turned on and off when they are selected. The first four variations have parameters that must be supplied when they are enabled. To turn one of these variations off, select it from the menu and click the **Remove** button (which appears only when the variation is active).

If a variation is turned on in the pull-down menu, it is applied to all tracks; the same parameters are applied to all tracks. If a variation is turned on in a track's pop-up menu, it affects only this track. This lets you apply the same variation with different parameters to various tracks.

If a variation is turned on in both the pull-down and a pop-up menu, the track-specific settings override the global settings.

Emphasis...

The Emphasis variation lets you change the dynamics of the notes by increasing or decreasing their velocities, depending on the relative position of the notes within a measure. When you select this variation, the following dialog appears:



Each measure is divided into twelve parts of equal length. The first three sliders represent the first quarter in 4/4, as indicated by the brackets along the bottom of the sliders. The brackets along the top give a similar cue for 3/4 and 6/8. To emphasize notes in a certain section of a measure, drag the corresponding slider(s) upwards; to make them sound softer, drag them downwards. To reset all sliders to the center position (which means “no change”), click the **Reset** button.

The “Emphasis” variation simply increases or decreases the velocities of notes, depending on their position within a measure. If the notes already have different velocities, the total effect depends on both the original velocities and the slider positions. If a slider is in its top position, the velocity is set to the maximum value 127. If it is in the bottom position, the velocity is set to the minimum value of 1. In the center position, the velocity is not changed. The following illustration shows a few typical slider positions and their effects on notes with the original velocities 20, 40, 64, 80 and 100:

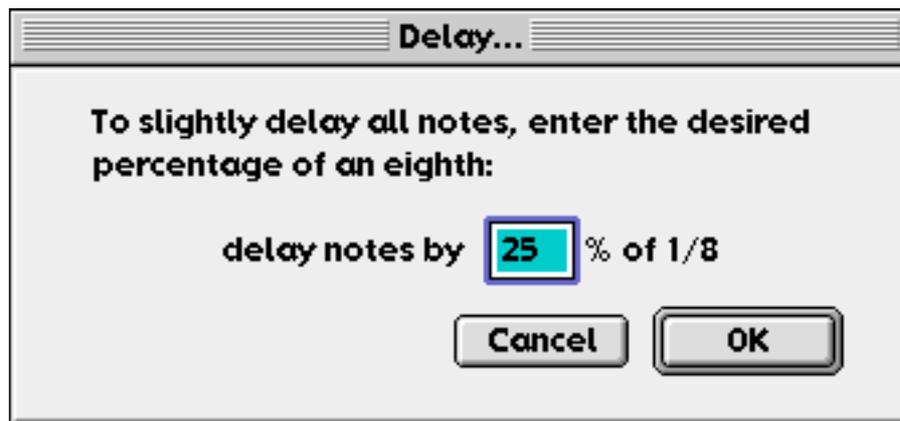
maximum (127)		127	127	127	127	127
between maximum and original		74	84	96	104	114
original velocity		20	40	64	80	100
between minimum and original		10	20	32	40	50
minimum (1)		1	1	1	1	1

If the **Ignore original velocities** checkbox is on, all notes are set to a medium velocity (64) before the slider changes are applied. In other words, the slider position then indicates the absolute velocities instead of relative changes, as shown by the numbers in the gray column.

If the start of a note falls between two sliders, the velocity change is determined by an intermediate value of the nearest sliders.

Delay...

The Delay variation lets notes start a bit later than written. When you select this variation, the following dialog appears:

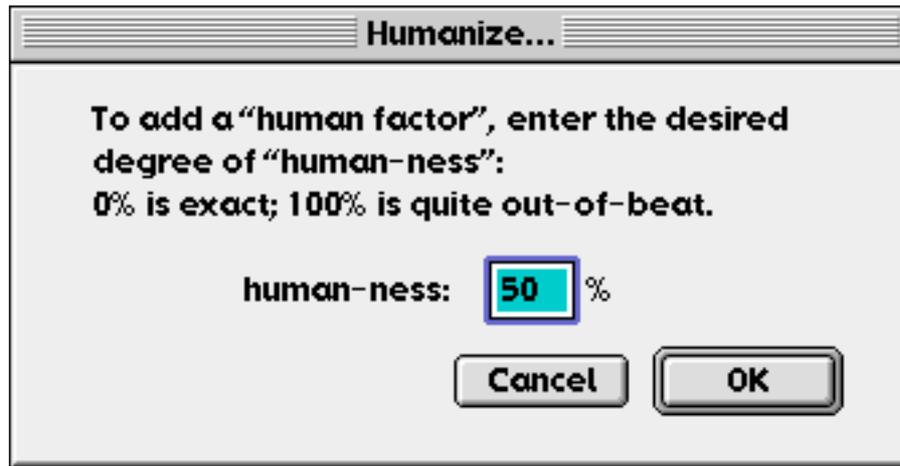


The delay is specified as a percentage of an eighth. Small values (such as 10%) yield a subtle effect that is scarcely audible. You will find that most useful when you have a song with many tracks. If you assign different delays to every track, the notes will sound slightly one after the other. The song will then sound more natural.

Note: When musicians talk about “delay”, they usually mean that delayed notes are **added** to the original notes (thus creating an echo effect), whereas “delay” here means that the original notes are just delayed, not doubled. To create an echo effect, you can add another track, copy all notes from an existing track and then apply the delay variation to one of the copies. Make sure that the delayed track uses the same instrument as the original track and make it sound softer by reducing its volume.

Humanize...

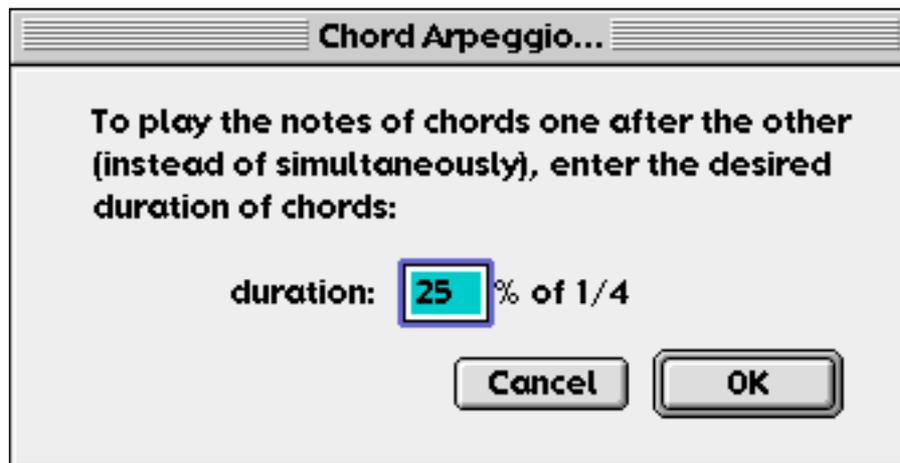
The Humanize variation lets you add random deviations to the timing of notes in order to simulate a human player. When you select this variation, the following dialog appears:



The higher the percentage, the more pronounced the effect will be. A value of 100% makes the timing very inexact, but small values (about 25%, depending on the tempo) can make the song sound less computer-like.

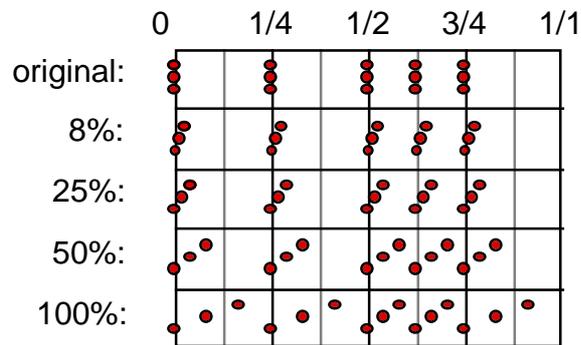
Chord Arpeggio...

The Chord Arpeggio variation spreads the notes of chords, such that they play one after the other instead of exactly at the same time. When you select this variation, the following dialog appears:



Small values make chords sound as if a human player hit the keys on a keyboard slightly one after the other. The delay between adjacent notes increases as you enter a higher percentage. If the value exceeds about 15% or 20%, the chords are clearly separated into individual notes. Single notes are not affected by this variation.

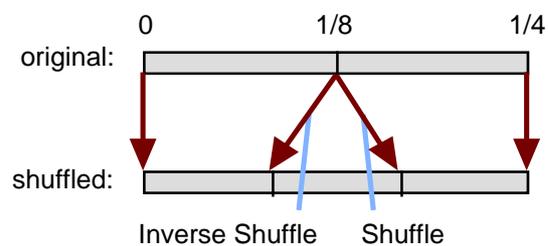
The separation of chords into individual notes is done in such a way that the order of chords is maintained; no note is allowed to move beyond the next note. The following table shows the effect of the arpeggio variation on five chords with some typical percentages:



Chord arpeggio is particularly useful when used on a guitar track. For example, you can simulate Flamenco style with a chord arpeggio in the range of 8% to 15%. The best setting depends on the number of notes in the chords, the distance between the chords and the tempo at which the song is being played.

Shuffle and Inverse Shuffle

The **Shuffle** variation stretches the first half of each quarter to fill the first 2/3 of the quarter and squeezes the second half into the remaining third. The **Inverse Shuffle** variation does the opposite: It shrinks the first half to occupy the first third and expands the second half to fill the remaining two thirds, as shown in the following illustration:



6.6 Music Menu

The **Music** menu contains commands for playing songs, adjusting playback and recording settings and a tuning utility:



Play Song

Starts playback of the current song at the start bar. Instead of selecting this command, you can also hit the return or enter keys on your keyboard or click the play button in the song header.

Play Selection

Plays the selected notes or the selected range within the current track. Instead of selecting this command, you can also hit the space bar on your keyboard.

Stop Playing

Stops playback of the current song or the current selection.

Play During Edits

Turns audible feedback for editing operations on and off. If the command is enabled, **easy beat** plays every change to a note. For example, if you drag a note to a different note line, you will hear the note with the new pitch.

If you change multiple notes at once, only the note that you clicked will be played, not the entire melody.

If the song currently plays, the **Play During Edits** option has no effect.

Follow Song

If this command is enabled, **easy beat** automatically scrolls the currently playing measure into view during playback, so you can read the notes while the song plays.

When you use the horizontal scroll bar or start editing the song while it plays, the **Follow Song** option is automatically turned off.

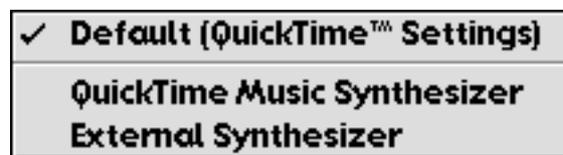
Reset All

Resets the current synthesizer by turning all currently playing notes off and setting all controllers to their default values. You will need this command only when you have an external synthesizer and some notes appear to “hang” (i.e., continue playing after the song has ended).

Note: Depending on the current playback options, **Reset All** may also send a predefined MIDI initialization sequence to your synthesizer. In that case, you can, for example, explicitly switch an external XG synthesizer into XG mode.

Synthesizer

This item has a submenu with three choices:



When you run **easy beat** for the first time, it uses the **Default** synthesizer as specified in the QuickTime™ Settings control panel. If you do not have an external synthesizer, leave this item checked.

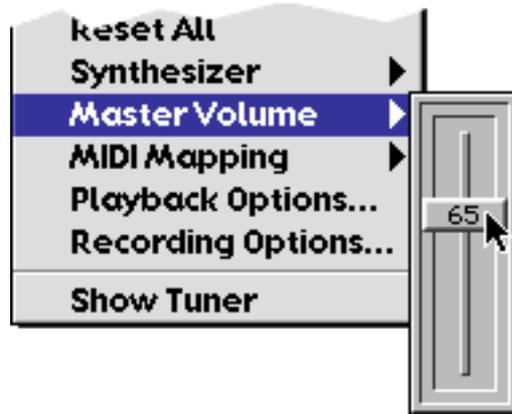
If you have an external synthesizer, you may want to select the **External Synthesizer** item. If you do this, **easy beat** will always use your external synthesizer, no matter what synthesizer is selected in the QuickTime™ Settings control panel. This is, for example, convenient when your external synthesizer is usually turned off. You can then select the QuickTime Music Synthesizer in the QuickTime™ Settings control panel, and movies with MIDI tracks and web pages with MIDI contents will still play using QuickTime’s built-in software synthesizer.

If you select the **QuickTime Music Synthesizer** item, **easy beat** will always use the built-in software synthesizer, no matter what synthesizer is selected in the QuickTime™ Settings control panel.

easy beat remembers the Master Volume, the MIDI mapping and the Playback Options separately for each item in the Synthesizer menu.

Master Volume

The **Master Volume** item has a slider submenu, as shown in the following snapshot:

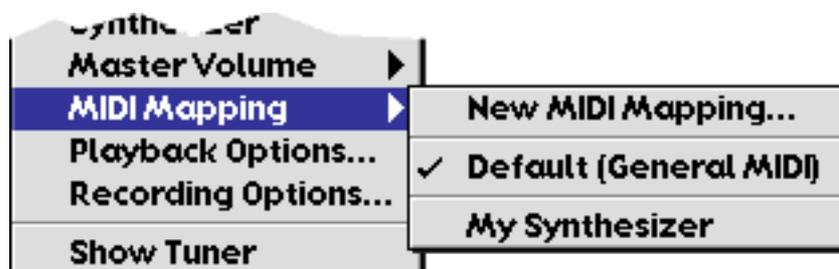


To reduce the volume, drag the slider to the desired percentage. The master volume affects all tracks of a song by turning the total volume down.

MIDI Mapping

The General MIDI standard defines (among other things) which instruments correspond to which program numbers (the MIDI term for “instrument numbers”). For example, program number 1 stands for “acoustic piano”, and number 19 represents a “rock organ”. If you use an external synthesizer that does not conform to the General MIDI or GS standard, you may need to adjust **easy beat** such that the correct instruments are played. This is done by means of a MIDI mapping file that describes which instruments should be mapped to which program number on your synthesizer. To be recognized by **easy beat**, MIDI mapping files must be stored in the “MIDI Maps” folder, which in turn must be in the same folder as the **easy beat** application.

The **MIDI Mapping** command has a submenu which lists all currently available mapping files. For example, if you have a single mapping file called “My Synthesizer”, the submenu will look like this:



To use the mapping file, simply select it in the menu. If you use the built-in software synthesizer of QuickTime or if you have a General MIDI compatible synthesizer, check the **Default (General MIDI)** item.

The first item, **New MIDI Mapping...**, lets you create a new mapping file. If you select this command, a new untitled window appears that lists all available instruments and their program numbers:



To change the mapping, you need to enter the corresponding program number with optional bank numbers for each instrument.

The text field in the top-right corner lets you specify controller #0, controller #32 and program change numbers for the substitute instrument. Just enter all three numbers (in this order), separated by arbitrary characters (such as spaces, commas or dashes). If you enter only a single number, it is taken as the program number and the controllers are both assumed to be 0. If you enter two numbers, the first is taken as controller #0 and the second as the program number. If you make a mistake, **easy beat** displays a short description below the text field:



Note: General MIDI program numbers are in the range 1–128, but your synthesizer’s manual may list them as 0–127. If that is the case, simply add 1 to each program number you enter.

To change the program number for an instrument, select the instrument and type the new number(s) in the text field. When the new number differs from the default number, both numbers are shown in the list. For example, the following line indicates that the Acoustic Grand Piano’s program number has been changed from 1 to 8.

Acoustic Grand Piano [1] = 8

To verify that the entered number is correct, click the speaker icon in the top right corner of the window (you can also hit the enter key or double-click a line in the list). A short melody will be played using this instrument.

In some cases, you may not be able to find any suitable program number. This is most likely the case with the special effects at the end of the list. For example, your synthesizer may not be able to produce the “Bird Tweet” or “Applause” sounds. If that is the case, disable these “instruments”. Select them and clear the instrument number with the backspace key. Instead of a replacement program number, the word “DISABLED” will appear in the list:

Bird Tweet [124] DISABLED

This means that a “Bird Tweet” will not sound at all if it occurs in a song.

The various drum kits are listed at the very end of the instrument list:

Standard Kit = 128-1
Room Kit = 128-9
Power Kit = 128-17
Electronic Kit = 128-25
Analog Kit = 128-26
Jazz Kit = 128-33
Brush Kit = 128-41
Orchestra Kit = 128-49
SFX Kit = 128-57

The special bank number 128 indicates that these are drum kits that should be directed to the MIDI channel 10. If your synthesizer supports only one set of drums, enter “128-1” for all drum kits.

Once you are finished with the instruments, you may also need to adjust the individual drums within a drum kit. To do so, switch the mapping window to the “Drums” view:



The window now lists all drums that are supported by General MIDI; they appear in the same order in which they are shown in a drum view.

The procedure for changing the drum instruments is the same as above but the numbers now represent note numbers, where 60 is middle C. See your synthesizer’s manual for information about which notes correspond to which drum instruments.

When your MIDI mapping is set up completely, select **Save As...** from the **File** menu, enter the name of the new mapping file and click the **Save** button. As the mapping is synthesizer-specific, we recommend that you give the mapping file the same name as your synthesizer. As soon as you have saved your mapping file, it will appear in the “Midi Mapping” submenu.

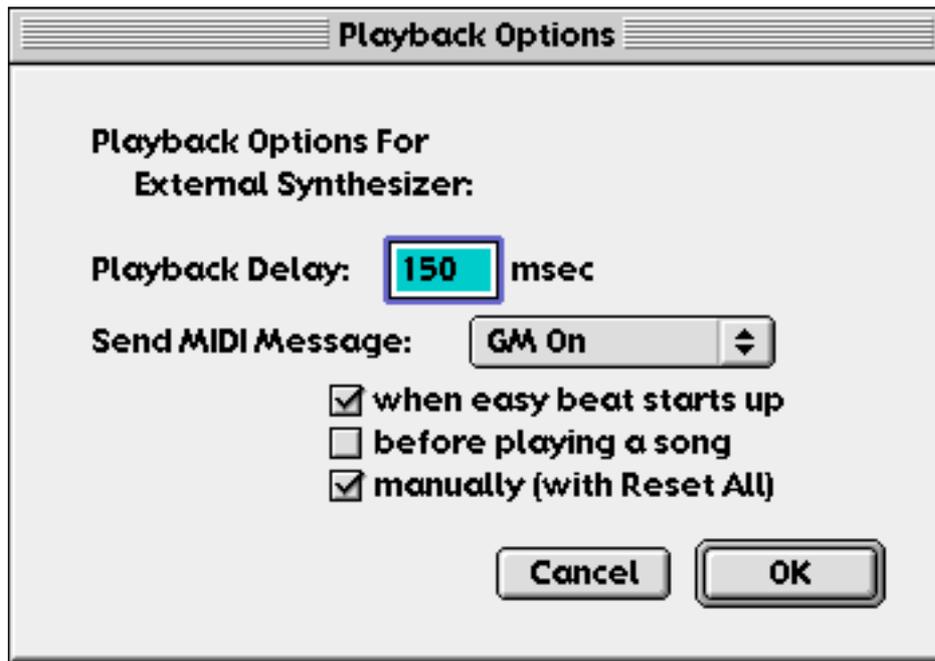
To edit an existing mapping file, you can re-open the mapping window in three ways:

- Open the “MIDI Maps” folder in the Finder and double-click the mapping file.
- Use **easy beat**’s **Open...** menu command and select the mapping file.
- Press the **⌘** key and select the mapping from the **MIDI Mapping** submenu.

Then change the mapping as desired. If the edited mapping is currently selected in the **MIDI Mapping** submenu, the changes take effect as soon as you save the changes to the mapping file.

Playback Options...

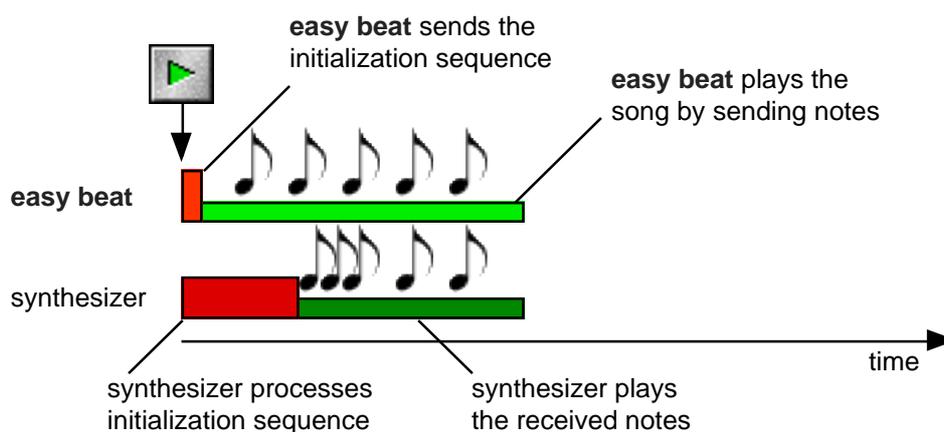
The **Playback Options...** command lets you define specific MIDI messages your external synthesizer might need and specify how fast **easy beat** starts playing a song:



Note that all these options are specific for the currently used synthesizer (which is checked in the **Synthesizer** submenu within the **Music** menu). You can leave the delay at 0 for the built-in QuickTime synthesizer; the remaining items will be dimmed, as they do not have an effect in this case.

Playback Delay:

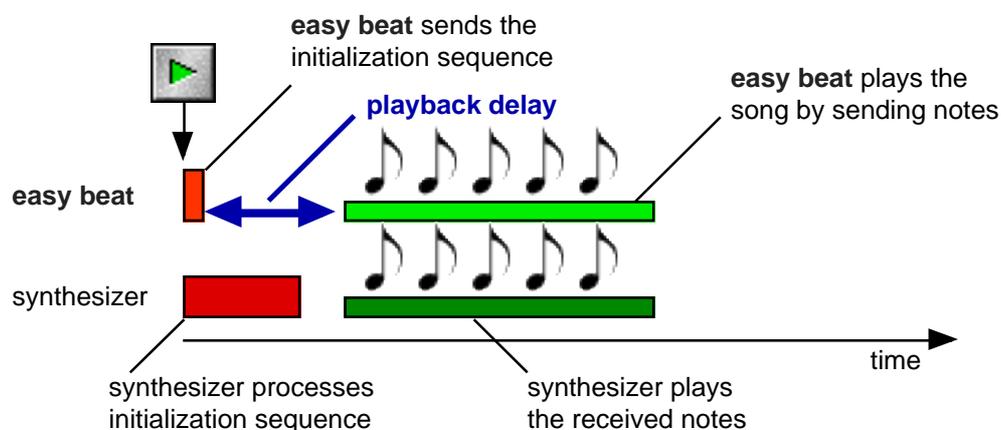
When you click the play button or hit the enter key, **easy beat** first sets up the synthesizer by initializing the channels with the current instruments and setting all controllers to their initial values. Depending on the current synthesizer and the MIDI configuration, this process can take some time. Unfortunately, **easy beat** cannot determine when the synthesizer is ready to play the song. When it sends the first note, the synthesizer may still be busy processing the initialization sequence, so the first few notes will be delayed, as shown in the following diagram:



The result is that the first few notes will appear to play faster until the synthesizer catches up with the correct timing. You will hardly ever notice this effect when you use the built-in QuickTime synthesizer, as it can process the initialization sequence almost immediately.

When you use an external synthesizer, the initialization sequence must be transmitted over the MIDI cable at a rate of about 3000 bytes per second. As most initialization commands (program change, controller change) consist of three bytes, every single command causes a delay of about 1 millisecond. Transmission of 100 such commands takes 0.1 second; if the synthesizer itself needs another 0.1 second to process the initialization sequence, the resulting delay of 0.2 second can become quite disturbing when you play a song that starts with a fast sequence at the very beginning of the first measure.

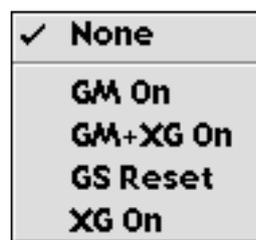
To correct this timing error, specify how long **easy beat** should wait before sending the first note. The following diagram shows how a small delay results in exact timing from the very first note:



The time to process the initialization sequence depends on the Macintosh model, the type of synthesizer, the hardware connection (serial port or USB) and the MIDI software (OMS or FreeMIDI). To find the best delay for your synthesizer, open the song “Fast 16th” in the “Examples” folder. Increase the playback delay until you do not hear any tempo change when you start the song. Do not exaggerate; a delay of 200–300 milliseconds is enough in most cases.

Send MIDI Message:

Some synthesizer models may need to be initialized before they properly respond to incoming MIDI signals. For example, some XG synthesizers cannot use the full range of built-in instruments unless they are put into XG mode. The Send MIDI Message pop-up menu lets you define which initialization sequence **easy beat** should send to your synthesizer:



- **None** does not send any initialization message. Try this setting first. If you find that your synthesizer plays the wrong instruments or does not correctly react to certain controller changes, use one of the initialization sequences below.
- **GM On** sends the SYSEX command “F0 7E 7F 09 01 F7” that puts General MIDI compatible synthesizers into the standard General MIDI mode. Most synthesizers at least follow the GM standard, but some need to be explicitly switched into “compatibility mode”.
- **GM+XG On** sends the **GM On** sequence, followed by the **XG On** sequence. If you have an XG synthesizer, the **XG On** sequence will usually suffice, so you should try that first.
- **GS Reset** sends the SYSEX command “F0 41 10 42 12 40 00 7F 00 41 F7” that enables the GS instrument set and makes a GS compatible synthesizer accept certain controllers that are not defined in the General MIDI standard. GS is Roland’s extension to General MIDI and is also supported by the QuickTime software synthesizer.
- **XG On** sends the SYSEX command “F0 43 10 4C 00 00 7E 00 F7” that lets XG compatible synthesizers access the full range of XG instruments. XG is Yamaha’s extension to General MIDI.

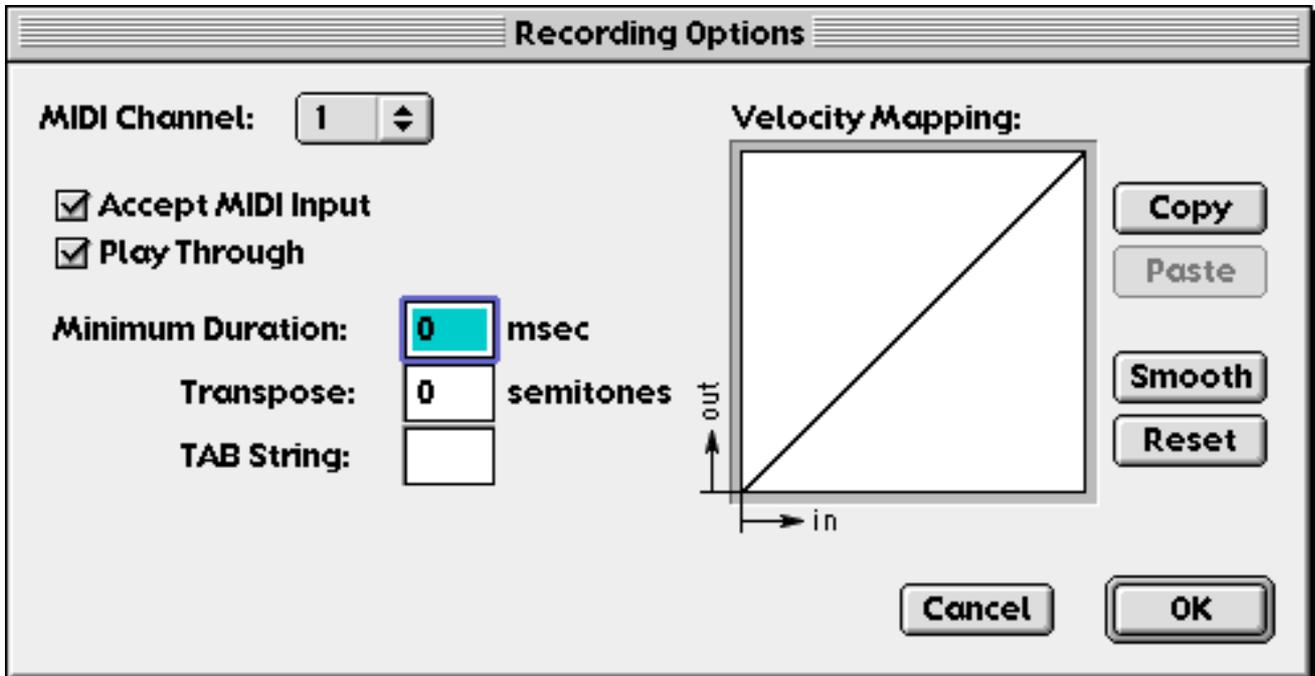
Selecting an initialization sequence is necessary only if a synthesizer can operate in multiple modes. For example, a keyboard with a built-in XG synthesizer may have many sounds that are not part of XG and will therefore typically work in “XG Off” mode. To access the XG instruments, you must tell **easy beat** to initialize the synthesizer before playing songs. If your synthesizer has only a single mode of operation, no initialization sequence needs to be sent. That’s why we recommend to start with the **None** setting.

When an initialization sequence is selected, you can use the checkboxes below to define *when* it should be sent:

- **when easy beat starts up** means that the initialization is done only once when you begin controlling your synthesizer with **easy beat**. This is the recommended setting that will work in most cases. However, your synthesizer must be turned on and connected to your Macintosh before you launch **easy beat**. If that is not the case (for example, when you switch your synthesizer on while **easy beat** is already running), the synthesizer will miss the initialization.
- **before playing a song** means that **easy beat** will reinitialize your synthesizer *every time* you click the play button or hit the enter key. This may be necessary if you operate your synthesizer manually while you work with **easy beat**. In that case, the initialized state can get lost, and the synthesizer will fail to reproduce the sounds as they were intended. While this setting is the most secure, it causes an extra delay when you start a song. You should therefore enable this checkbox only if everything else fails.
- **manually (with Reset All)** means that **easy beat** will initialize the synthesizer when you select the **Reset All** command from the **Music** menu. This setting is useful in combination with the **when easy beat starts up** checkbox if you know exactly when your synthesizer needs to be reset. We recommend that you leave this checkbox on, as the extra initialization doesn’t hurt when you select **Reset All**.

Recording Options...

The **Recording Options...** commands opens a dialog that lets you adjust various settings for recording from a MIDI instrument:



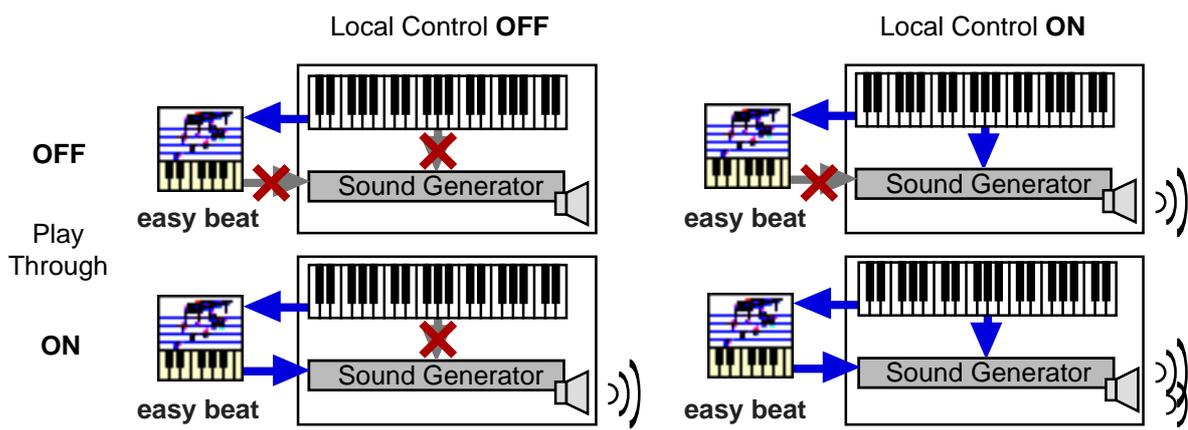
There are separate settings for each **MIDI channel**. In this way you can ...

- Define separate settings for two or more MIDI instruments (which must be configured to transmit MIDI data on different channels).
- Prepare a set of options for different MIDI channels and quickly switch among these sets by changing the MIDI transmit channel of your MIDI instrument. This is particularly useful when you use a MIDI keyboard that has hardware buttons for changing the MIDI channel.
- Define the string numbers for a MIDI guitar (only if notes played on different strings are transmitted on different MIDI channels).

For each channel, you can define the following settings:

Accept MIDI Input lets you entirely disable a MIDI channel. If you uncheck this option, the remaining settings disappear, and **easy beat** ignores all MIDI data received on this channel.

Play Through means that **easy beat** immediately plays the notes received on this channel. Leave this option checked for instruments that do not have a built-in sound generator (such as a plain MIDI keyboard). If your instrument has a built-in synthesizer, it will very likely also have a Local Control switch. If Local Control is on, notes played on the instrument will both play using the internal synthesizer and be sent on the current MIDI transmit channel. Turning the switch off disables the internal (“local”) sound generator and only sends the notes via MIDI. If Local Control is on, you should turn the Play Through checkbox off, and vice versa. The following table illustrates the effects of the possible settings of Local Control and Play Through:



If both switches are ON, you will hear the played notes twice, which causes an irritating echo effect.

We recommend that you turn Play Through ON and Local Control OFF, in particular if you also use the Transpose and Velocity Mapping features (see below).

The **Minimum Duration** field lets you define how long a note must sound to be recorded by **easy beat**. You should normally set this field to 0. If recording sometimes leads to short extra notes (because you barely touched a key), you can avoid them by entering the minimum duration in milliseconds. Try values in the range 10 to 50 milliseconds (a 1/16 note at a tempo of 120 sounds for about 125 milliseconds).

Note: Although notes shorter than the minimum duration will not be added to the current track, you will still hear them during recording. The reason for this is that **easy beat** immediately plays the notes when they start, but it cannot determine their duration before the notes end.

The **Transpose** field lets you specify by how many semitones (positive for higher, negative for lower) the notes should be transposed before adding them to the current track. You can use this feature to...

- play a bass line in your preferred finger position, yet record it one octave lower (-12).
- play a tune in C and record it in D# (+3).

Note 1: If you use a keyboard with a built-in synthesizer, Play Through should be ON, and Local Control should be OFF if you want to hear the transposed notes during recording. If Local Control is ON, the keyboard's synthesizer will play the original notes.

Note 2: The Transpose recording option has a different effect than the playback transposition shown in the track header. The recording transposition affects incoming MIDI notes before they appear in a track; the playback transposition affects existing notes when they are played, no matter how they were created. Anyway, these two transpositions will sum up. If you record a C with a recording transposition of +2, it will appear as D in the track. If the playback transposition is set to +3, the D will sound as F, so the total transposition becomes +5 (one fourth).

The **TAB String** field lets you define on which string recorded notes should appear in the TAB view. This feature is useful only if you record from a MIDI guitar that sends notes played on different

strings to different MIDI channels. In all other cases, leave the field blank to let **easy beat** automatically put the recorded notes on reasonable string/fret positions.

The strings in a TAB view are numbered from bottom to top; the lowest string has the number 1. For example, you could use the following settings for a Shadow SH075 guitar-to-MIDI adapter (which sends the high E string on MIDI channel 1 and the low E string on channel 6 in “Poly Mode”):

String	MIDI Channel	TAB String
E	1	6
B	2	5
G	3	4
D	4	3
A	5	2
E	6	1

The **Velocity Mapping** area lets you graphically define how the velocities of incoming notes should be modified before adding them to the current track. The default setting is “no change”, shown by the straight line from the bottom-left to the top-right corner.

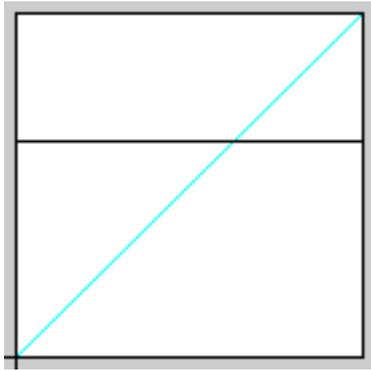
To change the mapping, click in the graph and draw straight lines. While you point into the graph or draw a line, the current position is shown above the buttons:



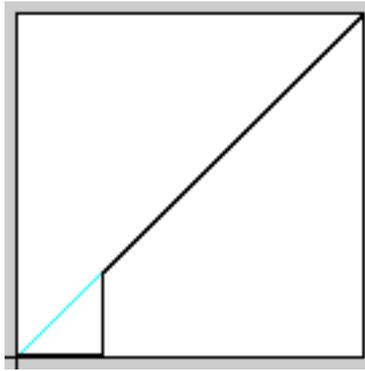
In this example, “97->118” means that a note played with the velocity 97 is translated into velocity 118. You can click slightly outside the graph to define the minimum or maximum values. For example, the gray area beyond the top-right corner counts as “127->127”:



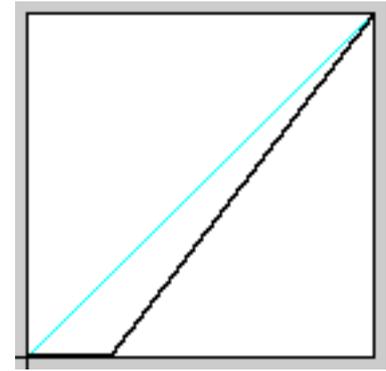
Here are a few examples for useful velocity mappings:



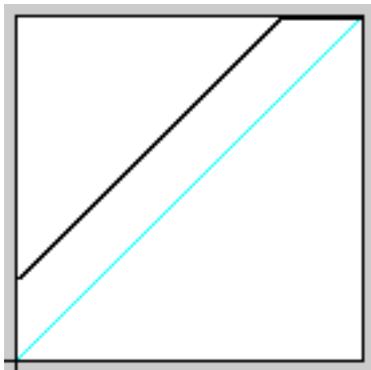
flat line at velocity 80
incoming velocity is ignored



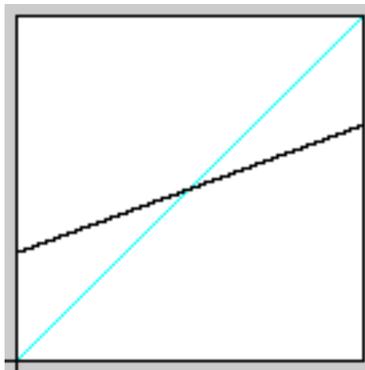
zero for velocities < 30
ignores very soft notes



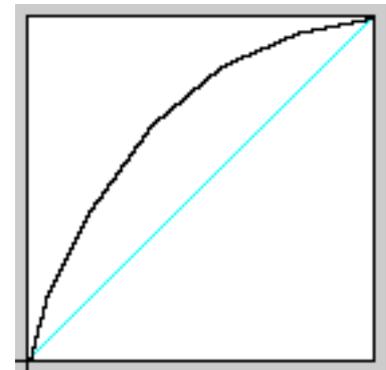
zero if < 30, then linear
transition to maximum



emphasize: velocity of all
notes is increased by 30



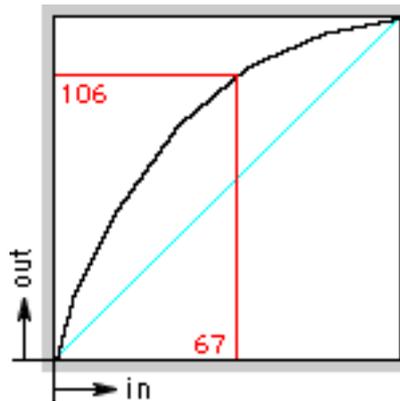
compress: soft notes are empha-
sized; loud notes are softened



compensation for uneven
keyboard sensitivity

- Note 1:** An output velocity of zero is a special case: In the second and third examples, soft notes with velocities less than 30 are translated into velocity 0, which means that these notes are not recorded at all.
- Note 2:** If you use a keyboard with a built-in synthesizer, Play Through should be ON, and Local Control should be OFF if you want to hear the notes with the transformed velocities.
- Hint:** To create a seamless series of multiple lines, start at the bottom-left corner, draw the first line, release the mouse button and immediately press it again for the second line, and so forth.

While the Recording Options dialog is open, you can test the current velocity mapping. Just play your MIDI instrument, and **easy beat** will display red lines to show the original and resulting velocities:



The four buttons to the right of the velocity mapping graph have the following effects:

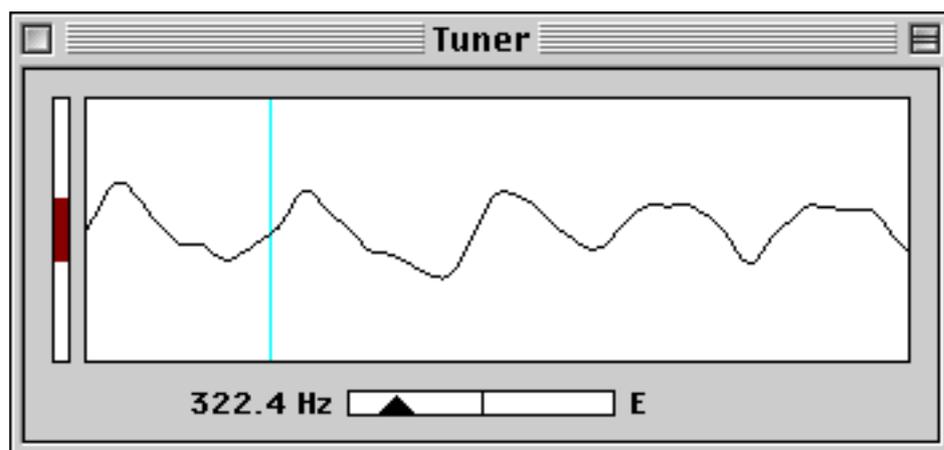
Copy puts the current velocity mapping into the clipboard. **Paste** replaces the current velocity mapping with the copy from the clipboard. You can use these two buttons to create identical velocity mappings for multiple MIDI channels.

Smooth turns sharp edges into soft transitions. To increase the effect, click the **Smooth** button several times. **Reset** replaces the current velocity mapping with the initial straight line which means that incoming velocities will not be modified during recording.

Show Tuner

If you are a guitar player, you can use **easy beat** to tune your instrument, but you must first make sure that **easy beat** can “hear” the strings that you play on your guitar. If your Mac has an internal microphone or you have an external microphone connected, select it as the sound input source in the Monitors & Sound control panel. If you have an electric guitar and your Mac is equipped with “line in” sockets, you can also use an adapter cable to connect your guitar directly with the Mac. In this case, select “RCA In” as your sound input source.

If you then select the **Show Tuner** command from the **Music** menu, the following window appears:



The large area shows the waveform of the sound; the blue line marks the end of the first complete wave. The red bar to the left indicates the current amplitude. The measured frequency and the corresponding note are shown below. The black triangle should appear in the middle of the horizontal bar, as close to the center line as possible. In this example, the E string was played, but the pitch is too low.

For best results, pick the string loud enough and let it sound for a few seconds. The tuner window refreshes about twice a second, which may cause the triangle jump to the left and right a few pixels. Wait until the position of the triangle becomes relatively stable before you correct the tuning of the string.

6.7 Web Menu

The **Web** menu contains web-related commands. To use these commands, you must have an Internet connection.



Find Song...

The **Find Song** command in the web menu lets you search the WWW for MIDI files by their song titles. To find songs, **easy beat** uses publicly available search engines. In order to search for a song, **easy beat** needs to know how to access and query these web services. Descriptions of these search engines must be in the “Search Engines” folder, which in turn must be located in the same folder as the **easy beat** application. The following examples assume that the “Search Engines” folder contains the following six documents:



The first four are well-know general-purpose search engines, the last two are specialized search engines for songs and therefore typically deliver better results.

If you select **Find Song** from the web menu, the following dialog appears:



Let's assume you're looking for "Stairway to Heaven" by Led Zeppelin. You could enter the whole title of the song in the text field, but we omitted the word "to", as it not relevant for the search. Note that case doesn't matter.

The search engines from the "Search Engines" folder appear next to the checkboxes. To visit them with your favorite web browser, you can click the blue links in parentheses.

Initially, all checkboxes are enabled. You will often want to restrict the search to engines that are known to deliver good results. To search only Music Robot and Scour, you can first click the **All Off** button and then enable the first two checkboxes.

When you click the **Find** button, the dialog window disappears and a new window with the search results is opened. As it takes a while to submit the search requests and to collect the results, the window will initially be empty, and information about the search in progress will be shown in the window header. If you're connected to the Internet via a slow modem, it may take about a minute before the first items appear in the window:



Eventually, the window will fill with the search results as they are received. You will notice that some search engines (such as Music Robot) return many results at once, whereas others (such as Scour and AltaVista) deliver separate smaller groups of results. As new items are always added at the bottom of the list, the results from the latter engines may be scattered over the entire list.

As the above screen snapshot shows, some results may be irrelevant. For example, Hot Bot found a web page “The Armour of God” that obviously has some religious content. That’s probably because the word “heaven” is part of the song title.

The following screen snapshot shows the result after all search engines have returned their replies:



The list of found items will contain many lines that at least contain the word “stairway”, but there are often irrelevant results. For example, Scour (not shown in this screen snapshot) lists a couple of other songs by Led Zeppelin, probably because it finds the words “stairway” and “heaven” close to a link to a different MIDI file.

Even worse, the general-purpose search engines sometimes return some absolutely useless links, but you will usually be able to guess from the titles which items are worth a download.

A further advantage of the specialized music search engines is that they also report the size of the MIDI files (as shown below). This is often a good indicator of a MIDI file's quality; as a rule of thumb, larger MIDI files typically sound better.

If you select a single item, a message in the window header displays the actual link. When you try this with items found by Music Robot, you will sometimes see a note "+another link" or "+nn more", as shown in the following illustration:



Music Robot groups the search results by the names and sizes of the MIDI files. If multiple items have the same name and size, it assumes that the same MIDI file is available from multiple sources. **easy beat** collects all these URLs in a single line. If a download fails with the first URL, it tries the other links until it finds one that works.

If an item is selected, the **Download** button in the bottom-right corner of the window becomes enabled. Click the button, hit the return or enter key, or double-click an item in the list to begin downloading the MIDI file. While a download is in progress, **easy beat** displays a small symbol in the left column:

- : A download has begun, but **easy beat** is still waiting for a reply from the server.
- : **easy beat** is downloading a web page that is expected to contain a link to the MIDI file.
- : **easy beat** is downloading a MIDI file.
- : The download has successfully completed.
- : The download has failed.
- : The download was canceled.

The blue and green indicators ( and ) begin with a white circle when the download begins and are filled with the blue or green color as the download progresses. Most search engines return links to web pages which in turn will contain a link to the desired MIDI file. An example is shown in the snapshot above: The item refers to a web page named "rock.html". When you decide to download the item, **easy beat** first fetches this web page () , searches the page for a link to the MIDI file and finally downloads the MIDI file itself () .

While a download is in progress, the item is displayed in red. If you select a single downloading item, more information about the download is displayed in the window header, as shown in the following illustration:



When the download of a MIDI file completes, **easy beat** immediately opens the song in a new window and the symbol ✓ appears in the left column of the downloaded item.

If you select a downloading item, the button in the bottom-right corner is labeled “Cancel”:



Click the button (or press ⌘-“.”) to stop the download. The item will then appear with the symbol ☒.

You can select multiple items in the list by clicking and dragging or by clicking multiple items while pressing the ⌘ key. If the list of selected items contains at least one item that can be downloaded, you can click the **Download** button to download all these items at once. **easy beat** can handle up to 20 concurrent downloads. If you attempt to download more than 20 items, the excess items are marked with the symbol 🌐. **easy beat** will begin downloading them as soon as one of the 20 currently active downloads has completed.

You can click the titles “◇”, “MIDI file/page” and “search engine” in the window header to sort the list. The diamond mark sorts the items by their current state. Completed items appear at the top, followed by downloading items, items that failed and finally all untouched items:

◇ MIDI file/page	search engine
✓ stairway_heaven.mid (64,777 bytes)	<i>Music Robot</i>
✓ stairway_heaven.mid (51,620 bytes)	<i>Music Robot</i>
✓ stairway_heaven1.mid (61,644 bytes)	<i>Music Robot</i>
✓ howmanytimes.mid (61.2 kB)	<i>Scour</i>
✓ Stairway To Heaven	<i>Google</i>
● A Boy and His Bird News	<i>Google</i>
● New Page 6	<i>Hot Bot</i>
● The Armour of God!!	<i>Hot Bot</i>
● stairway_heaven.mid (61,644 bytes)	<i>Music Robot</i>
● Information - http://www.maxpages.com...	<i>Hot Bot</i>
✗ nothing found	<i>AltaVista</i>
✗ nothing found	<i>InfoSeek</i>
✗ Stairway to heaven - smh.com.au - News Review	<i>Google</i>
✗ Stairway to Heaven - (1998)	<i>Google</i>
stairway_heaven.mid (47,351 bytes)	<i>Music Robot</i>
stairway_heaven.mid (51,418 bytes)	<i>Music Robot</i>
stairway_heaven.mid (55,222 bytes)	<i>Music Robot</i>

Visit macility...

The **Visit macility** command launches your preferred web browser (as defined in your Internet settings) and takes you directly to the **easy beat** product section of our web server. If you are not on our mailing list, you may want to check our server now and then for new information.

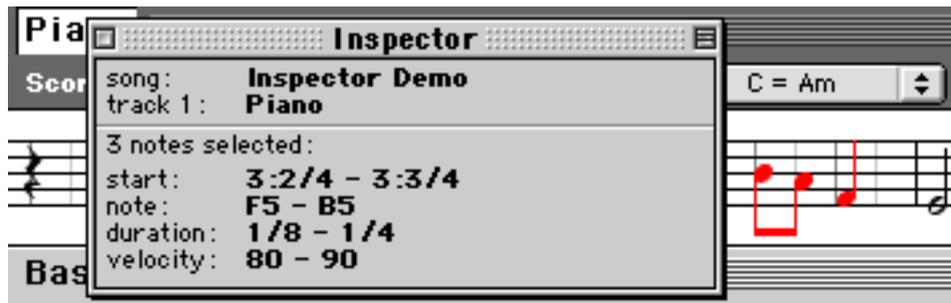
Send Email Report...

The **Send Email Report** command launches your preferred e-mail program (as defined in your Internet settings) and creates a new mail message with some essential information about your configuration and with the correct destination address already filled in. To send us a report (in case you have a problem with **easy beat** or just want to tell us how much you like it), enter your comments and send the message.

6.8 Windows Menu

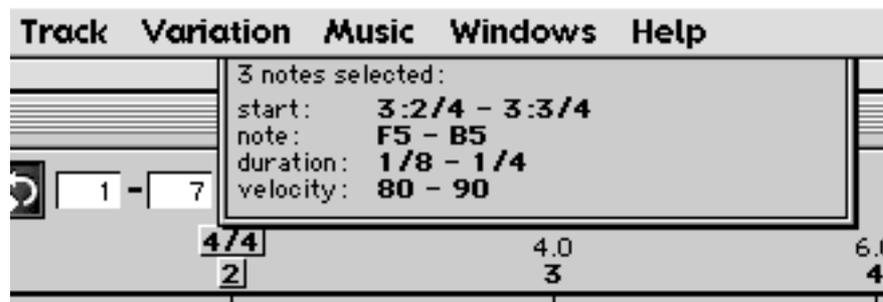
The **Windows** menu lists all currently open windows by name. The currently active window appears with a check mark. To bring another window to the front, simply select it from the menu.

The last item in the **Windows** menu reads **Show Inspector**. If you select it, a floating window displays detailed information about the current track and the selection within the track:



Shortcut: The *help* key also shows/hides the inspector window.

You can move the window to a convenient location on the screen by clicking anywhere within the window. **easy beat** remembers the window position and reopens the inspector window in the same place the next time. You can even move the window to the very top of the screen and tuck the top part under the menu bar:



The information shown in the inspector varies, depending on the type of the current track and the contents of the selection. In the above example, the starting positions, notes, durations and velocities of the selected notes are shown. If some of the selected notes have different properties, the inspector displays the range of these properties. In this example, the shortest note is an eighth, and the longest is a quarter note.

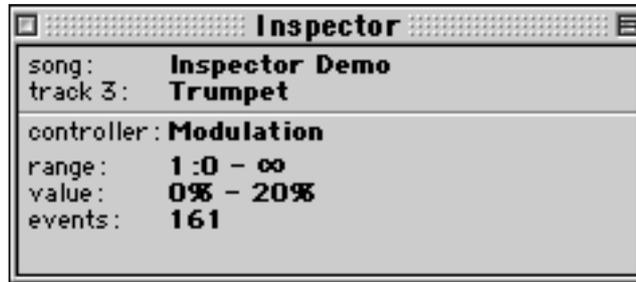
Hint: The inspector is a convenient way to investigate whole tracks of imported songs. When you select all notes of a track, it displays a summary of the track, as shown in the following example:



There is a total of 1028 notes in the track; the piano begins in measure 42, and the last note starts in the 138th measure. All notes have the same velocity. There is at least one empty note with duration 0, so it's a good idea to clean up the track by deselecting all

notes and selecting **Clean Up Notes** from the **Edit** menu. Another strange thing is that there is at least one very long note that sounds for almost 8 measures.

If a range is selected within a controller view, the inspector shows both the length of the range, the minimum and maximum controller values, and the number of controller events:



In this example, the **Select All** command was used, as the range is infinite (... - ∞). The modulation controller never exceeds 20% of the maximum value.

7 Import and Export of MIDI Files

easy beat uses a custom file and clipboard format for songs. When an **easy beat** song is saved (exported) as a MIDI file, some information will get lost because it cannot be represented in standard MIDI files. On the other hand, some information may get lost when **easy beat** imports a MIDI file, as **easy beat** does not support everything that can be contained in a standard MIDI file. This chapter explains what happens when you import and export MIDI files. It assumes that you are familiar with the MIDI protocol.

7.1 Import of MIDI Files

File Formats

easy beat can read format 0 (single multi-channel track) and format 1 (separate tracks for each channel) MIDI files. These are the most common file formats used by other music programs. Format 2 (independent patterns in separate tracks) is not supported.

Tracks and Channels

easy beat creates a separate song track for every used channel in the MIDI file. A MIDI channel is considered “used” if it contains at least one note.

The MIDI channel 10 is always translated into a drum track; all other channels are translated into “regular tracks”.

Global Information and Meta Events

MIDI files contain information about the **time resolution**. Typically, a resolution of 96 “ticks” per quarter is used. **easy beat** internally uses a finer resolution and converts the MIDI file’s resolution to 960 units per quarter. Absolute resolutions (in units per second; typically used by synchronization devices) are not supported by **easy beat**.

Tempo and **time signature** information is recognized by **easy beat**. If no such information is available in a MIDI file, **easy beat** assumes 120 BPM and 4/4. **easy beat** does not support changes of the time signature during a song. If a MIDI file contains multiple time signature specifications, the *last* specification contained in the file will be used for the entire song.

Track names are usually recognized correctly. However, **easy beat** will sometimes not be able to determine which track a given name belongs to. In such cases, the track names will be ignored and some tracks will show up as “Untitled”. Some MIDI files produced with other music programs misuse the track names for copyright information. If that is the case, some tracks will show strange names such as “©1997” or “by John Smith”.

If a MIDI file contains a valid **copyright notice**, it will show up in **easy beat**’s **Get Info** dialog.

All other meta information is not recognized by **easy beat**. In particular, the following information will be ignored if it is present in a MIDI file:

- **Sequence numbers** (used in format 2 MIDI files)
- **Text events** (copyright information stored in a general text event will be ignored)
- **Instrument name** (the instrument is determined by a program change event)
- **Lyrics, markers and cue points**
- **Synthesizer-specific information** (including **SYSEX** events)

Notes and Aftertouch

easy beat translates the **note on** and **note off** events in MIDI files into notes with a given starting position, duration, pitch and velocity. “Note on” events with the velocity 0 are treated as “note off” events. If true “note off” events are used in a MIDI file, **easy beat** ignores their velocity (i.e, only the “note on” velocity is considered).

easy beat automatically fixes minor errors that may be contained in a MIDI file:

- “Note off” events without a preceding “note on” event are ignored.
- If two “note on” events for the same note are detected without a “note off” event between them, a “note off” event is generated before the second “note on” event.
- If a “note off” event immediately follows a “note on” event for the same note, the note (which would have the duration 0) is ignored.
- At the end of the song, “note off” events are assumed for all notes that have not been turned off explicitly.

Aftertouch events (both channel aftertouch and key aftertouch) are ignored by **easy beat**.

Pitch Bend

easy beat translates pitch bend events into QuickTime’s pitch bend range, which theoretically covers up to ± 128 semitones with a resolution of $1/256$ semitone. **easy beat** recognizes RPN #0 (registered parameter number) and data entry events to determine the pitch bend range used in the MIDI file. Only the “coarse” specification (whole semitones) is considered; any “fine” setting (in fractions of semitones) is ignored. If no pitch bend range is specified in a MIDI file, **easy beat** assumes a range of ± 2 semitones, as specified by the MIDI standard.

Program Change

easy beat uses program change events to assign instruments to tracks. If no program change event is specified for a MIDI channel, **easy beat** uses the “Acoustic Grand Piano” for the corresponding track. The MIDI channel 10 is always translated into a drum track; if it does not contain a program change event, **easy beat** uses the “Standard Kit”.

easy beat currently does not support multiple program changes within a track. The first program change event for a MIDI channel determines which instrument is used for the entire track. Additional program change events are ignored and reported as unsupported.

Program change events can be preceded by bank select messages (controller #0 and #32). **easy beat** can handle the full range of up to 2097152 instruments (128 instruments in 16384 banks), but they can be reproduced only if an external synthesizer “understands” the bank/program numbers. When the QuickTime software synthesizer is used, only the General MIDI + GS instruments are supported.

Controller Change

easy beat recognizes all controller change events that are supported by QuickTime (version 3), as listed in the following table:

0 Bank Select	8 Balance	67 Soft Pedal
1 Modulation	10 Pan	91 Reverb
2 Breath	11 Expression	92 Tremolo
4 Foot Pedal	32 Bank Select	93 Chorus
5 Portamento Time	64 Sustain	94 Celeste
7 Volume	66 Sostenuto	95 Phaser

All other controller events are ignored and reported as unsupported.

After importing a MIDI file, **easy beat** “normalizes” the volume controller. The volume field of a track is set to a percentage that corresponds to the highest volume used within the track, and the volume controller events are scaled to use the entire range. This normalization allows increasing the global volume of a track without having to scale the volume controller events.

The MIDI standard defines “coarse” and “fine” variants for the controller types 1 through 13 (see columns 1 and 2 of the table above). **easy beat** only recognizes the “coarse” events and ignores the corresponding “fine” variants.

7.2 Export of MIDI Files

File Format

When a song is saved as a MIDI file, **easy beat** always creates a format 1 MIDI file; each **easy beat** track is saved as a separate MIDI track. Format 0 is currently not supported.

Tracks and Channels

easy beat maps the drum track of a song to the MIDI channel 10 and uses the channels 1 through 9 and 11 through 16 for the other tracks. Whereas **easy beat** supports multiple drum tracks, only a single drum track can be present in a MIDI file. If an **easy beat** song contains more than one drum track, all of them are mapped to the MIDI channel 10.

Only active tracks (whose speaker symbol has been turned on in the track header) are exported to the MIDI file, and the metronome in the master track is always ignored.

easy beat saves each song track in a separate MIDI track. In addition to that, an empty information track is created at the beginning of the MIDI file. See the “Global Information” section below for details.

Before an **easy beat** song is saved as a MIDI file, the specified (global and track-specific) variations are applied to all active tracks, and all notes are transposed according to the tracks’ transposition fields. When such a MIDI file is later imported again, it will sound as before, but the variations and the transposition are then part of the notes.

Global Information

MIDI files created with **easy beat** always have **easy beat**’s fine **time resolution** of 960 units per quarter note instead of the more popular resolution of 96. The finer resolution is necessary for an exact representation of some variations that affect the timing of notes (such as Humanize and Delay). When such a MIDI file is later imported by another sequencer program, the resolution might be decreased to 96 again. In this case, the timing may get distorted slightly.

A MIDI file created by **easy beat** always begins with an empty MIDI track that doesn’t contain any notes. This track is used for the **copyright information** (unless the field is left empty in the **Get Song Info** dialog), the **time signature**, the **tempo changes** and an **easy beat**-specific SYSEX block containing the start bar, loop range and a few other attributes that will be restored when you import this file into **easy beat** again.

The **track names** are stored at the very beginning of the remaining tracks.

Notes and Aftertouch

easy beat does not create note off events; instead, the end of a note is indicated by a note on event with a velocity of zero. **easy beat** does not generate aftertouch events (even if the aftertouch controller is used in an **easy beat** song track).

Pitch Bend

Before a track is exported into MIDI format, **easy beat** determines the maximum range of pitch bend events. If the range exceeds the default range of ± 2 semitones, RPN #0 and data entry (coarse) events are created at the beginning of the track to specify the required pitch bend range. This range remains unchanged for the entire duration of the song.

Program Change

easy beat creates a single program change message (including explicit bank select messages) at the beginning of each track.

Controller Change

All controller events supported by **easy beat** are exported to the MIDI file, with the following two exceptions:

- Pitch Bend controller transitions are translated into MIDI pitch bend events.
- Aftertouch transitions are ignored.

If a track's volume field is set to a value other than 100%, an initial volume controller event is generated at the beginning of the track, and all other controller events are reduced by the factor specified in the volume field.

easy beat internally uses a 16-bit resolution for all controller values. When controller events are exported to MIDI, only the "coarse" events are used, which means that the resolution is reduced to 7 bits.

What's not Exported

When saving a song as a MIDI file, **easy beat** includes most audible information that is defined in the General MIDI standard. All visual information will get lost. In particular, the following attributes of songs and tracks are not saved in the MIDI file:

- song title
- page setup settings and printing options
- view and display attributes (including grid, key, clef and TAB settings)
- string/fret positions of notes

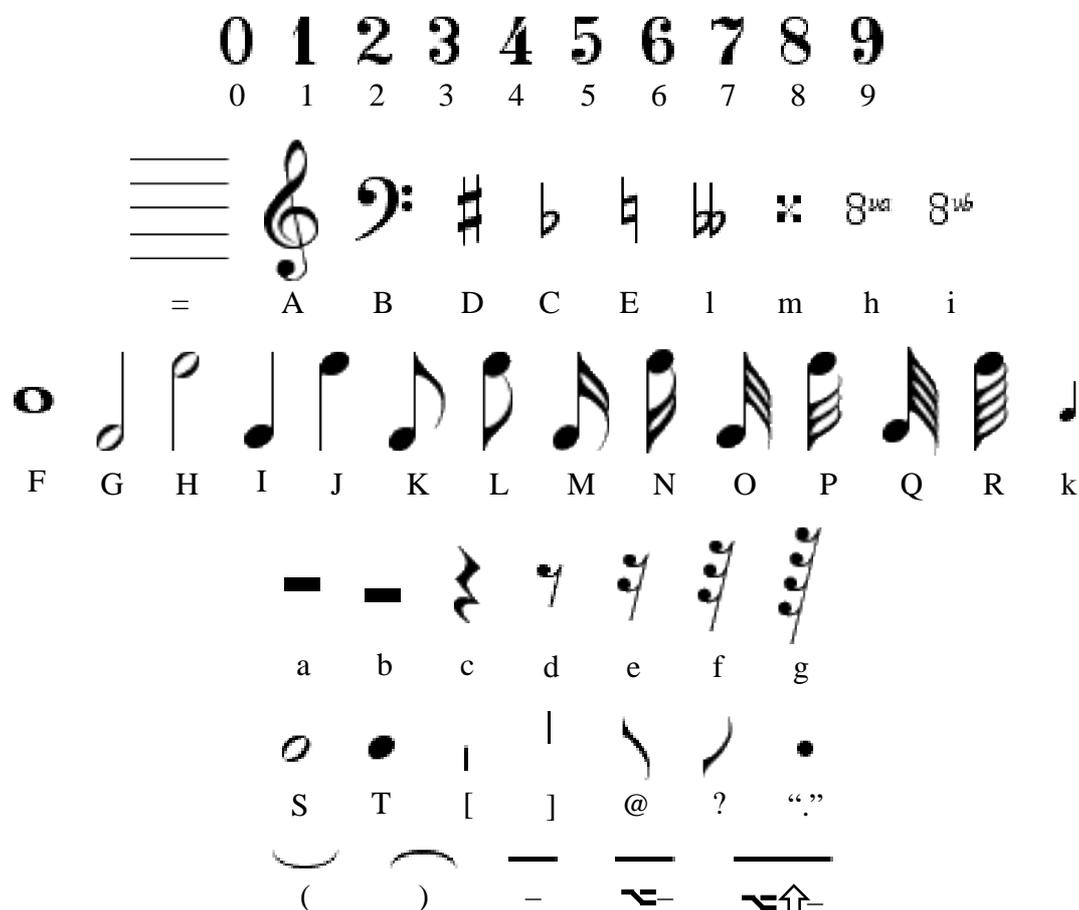
All these properties of an **easy beat** song file will get lost when it is exported into MIDI format and later imported again.

8 The EasyNotes Font

The EasyNotes font supplied with **easy beat** contains symbols that are used for displaying and printing notes, rests and other special symbols in scores. This font must be installed in the Fonts folder within the System folder (or made accessible with a third-party font utility, such as Suitcase). If the font isn't installed or if a wrong version is installed, **easy beat** reports an error when it is launched.

EasyNotes is a TrueType™ font. It can be printed in almost any size, but we suggest using a font size of at least 24 if the symbols will be displayed on a screen.

You can also use the EasyNotes font within other applications. The following table shows the symbols contained in the font and the corresponding ASCII characters (or keystrokes).



Note: This illustration shows smoothed bit images of the EasyNotes symbols in font size 36, so you can display and print this document without having the EasyNotes font installed. When using a high-resolution printer, the quality of the printed symbols will be much better.

9 Extending the Instrument Set

easy beat lets you customize the contents of the Instrument pop-up menu by describing the instruments in one or more text files. The text files have a simple format:

```
# comment
```

Lines starting with “#” (as well as empty lines) are ignored.

```
Chromatic Percussion
```

Lines containing simple names introduce group names. Every group becomes a separate submenu in the instrument menu and is filled with instrument descriptions that follow the group name.

```
8 7 Coupled Hps.
```

Lines starting with numbers describe an instrument that becomes part of the current group. The first number is the bank number (controller #0; in the range 0–127, or 128 for a drum kit), the second number is the program number (in the range 1–128). The remainder of the line is the instrument’s name.

To define an instrument that also requires controller #32, use the following format:

```
0,64 34 JazzBass
```

The first two numbers are the values of the controllers #0 and #32 (in this order), separated by a comma. Then follow the program number and the instrument name.

To define a custom Instrument menu, describe the instruments available on your external synthesizer and put the description file in the “MIDI Maps” folder (which must be in the same folder as the **easy beat** application). When you start **easy beat** the next time, you can access your custom menu by pressing the \uparrow key when you click the instrument pop-up menu. Without the \uparrow key, the usual menu with the General MIDI instruments appears.

To reverse the effect of the \uparrow key, you can put the following line in one of your instrument description files:

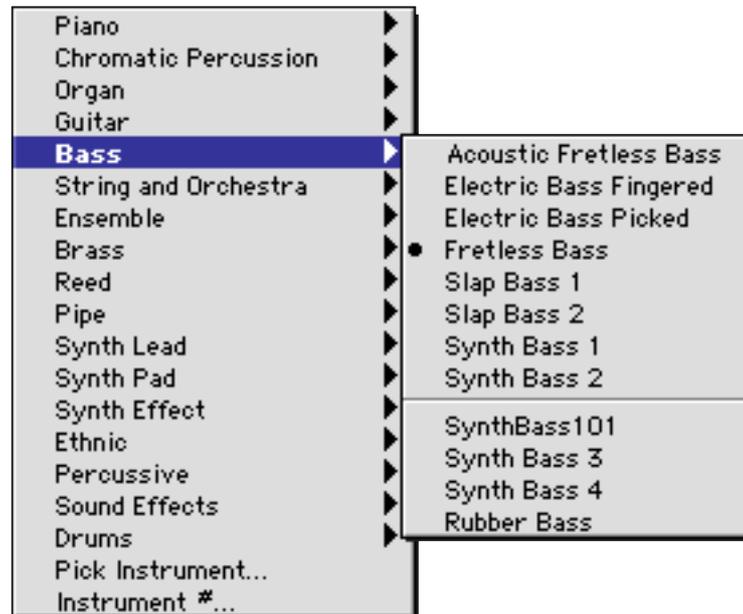
```
/default
```

This line can appear anywhere within a file and tells **easy beat** to use these instruments for the default menu (i.e., without pressing the \uparrow key). You can still access the built-in instrument menu by pressing the \uparrow key. In other words, the “/default” command reverses the meaning of the \uparrow key.

You can actually put multiple instrument description files into the MIDI Maps folder. If you do that, the files will be processed by **easy beat** in alphabetical order. To verify the order, inspect the folder’s contents in the Finder: Switch to the list view and sort the items by name.

Multiple text files in the MIDI Maps folder are processed as if their contents were concatenated in a single file. Duplicate items are treated in the following way:

- If a group name appears more than once, the instruments listed in the respective sections will appear in the same submenu, separated by horizontal lines, as shown in the following example:



You can use this feature to clearly separate instruments into sound sets. In this example, the first eight instruments are from the General MIDI set, and the remaining four instruments belong to the GS sound set.

- Instruments are identified by their bank and program numbers. This means that you can use the same instrument name for different bank/program numbers. As the name would then appear twice in the menu, this is not recommended. On the other hand, if the same bank/program number appears twice in the instrument files, **easy beat** displays only the first item and ignores the second.
- The “/default” line can appear in any text file.

The Extras folder contains a few pre-built instrument description files. You can use these files as templates for creating your own description files or use them as they are. In particular, the files named “(General MIDI)”, “(GS)”, “◇GS”, “(XG)” and “(default)” contain the General MIDI, the GS and XG sound sets and the single “/default” line. The parentheses make sure that the files are loaded first; the diamond puts the file “◇GS” in the last position in the loading order.

Here are some suggestions for using custom instrument menus:

- If you use only the built-in **QuickTime software synthesizer**, put the files “(General MIDI)”, “(GS)” and “(default)” into your MIDI Maps folder. All General MIDI instruments and the GS instruments supported by QuickTime will appear in your instrument menus. The example above shows the result of this configuration.
- If you use an external synthesizer that conforms to the **General MIDI** specification and has extra instruments that are not part of General MIDI and GS, create an instrument description file for the extra instruments only. It is a good idea to use the “(General MIDI)” file as a starting point, as it already contains the group names that are used by **easy beat**. Put your new file along with “(General MIDI)” and “(default)” into your MIDI Maps folder. All General MIDI instruments and all instruments available on your synthesizer will show up in the Instrument menus. The

separators in the submenus will tell you which instruments are supported by the QuickTime synthesizer.

- If your external synthesizer conforms to Roland's **GS** extension of General MIDI, follow the instructions in the previous paragraph and also put the "(GS)" file into your MIDI Maps folder. Your additional instrument file only needs to describe instruments that belong to neither General MIDI nor GS.
- If your synthesizer does **not** conform to **General MIDI**, create a MIDI Mapping file that routes the General MIDI instruments to corresponding bank/program numbers for your synthesizer. If your synthesizer has many additional sounds that are not part of General MIDI, create an instrument definition file for the extra sounds. Put that file into the MIDI Maps folder to access the additional instruments with the \uparrow key. As an alternative, also add the "(General MIDI)" and the "(default)" documents in the MIDI Maps folder to access both the General MIDI and the extra instruments without needing the \uparrow key.
- If you have a synthesizer that conforms to Yamaha's **XG** specification, put the "(General MIDI)", the "(XG)" and the "(default)" documents in the MIDI Maps folder (because XG is a superset of General MIDI) and create a description file for the additional instruments. You can use the file "PSR9000" in the Yamaha folder as a starting point. Note that the XG instruments have been put in separate groups, so they appear in submenus below the General MIDI groups. Yamaha's XG and Roland's GS definitions extend General MIDI in different ways. If you sometimes want to use GS instruments (for example, with the built-in QuickTime synthesizer), you can add the " \diamond GS" file to the MIDI Maps folder. This file describes the GS instruments, where each instrument name has the ending "(GS)". The diamond makes sure it loads after all other instrument descriptions; the GS instruments will appear at the bottom of the instrument menus, and they are clearly marked with the ending "(GS)".
- The files "PSR9000 + XG" and "SC-55 + GS" contain complete descriptions for the instruments available on Yamaha's PSR9000 keyboard and Roland's Sound Canvas SC-55. See the comments at the beginning of these files for usage instructions. These documents also give you an idea how you can configure your own instrument menus for any synthesizer.
- If you have a synthesizer that does **not** conform to the **GS** standard, you may still want to add the " \diamond GS" file to the MIDI Maps folder in addition to your own instrument descriptions. This file describes the GS instruments, where each instrument name has the ending "(GS)". The diamond makes sure it loads after all other instrument descriptions. If your synthesizer's bank/program number assignment conflicts with GS, the duplicate GS instruments will not be added to the menus; only the unique GS instruments will show up after a separator, and you will be able to identify them by the ending "(GS)".

10 Tips and Tricks

This chapter explains a few techniques that make working with **easy beat** easier. You will usually find this information buried in the reference document or the tutorial, but it is organized differently in this section. Every tip has a heading that you can read as “How do I ...” or “Did you know that you can ...”. The explanations are intentionally kept brief. If you try them in **easy beat**, you should nevertheless be able to follow the instructions easily.

Copy an Entire Track

- Activate any score, keyboard, TAB or drum view of the source track (make sure its border appears in dark gray).
- Type **⌘-⌥-A** to select the entire track.
- Type **F3** or **⌘-C** to copy the track to the clipboard.
- Activate any score, keyboard, TAB or drum view of the destination track (make sure its border appears in dark gray).
- Type **⌘-⌥-A** to select the entire track.
- Type **F4** or **⌘-V** to replace the track with the contents of the clipboard.

See the Exact Position and Duration of a Note in a Score View

- Hit the *esc* key to deselect all notes.
- Click the note without moving the mouse. Black lines along the top and bottom of the score view will indicate the position and duration of the note.
- If you accidentally moved the note: Type **F1** or **⌘-Z** to undo the move.

Scale a Few Notes

If you want to scale just the notes (i.e., if controller events do not matter):

- Select the notes by drawing a rectangle around them.
- Select **Scale...** from the **Edit** menu.
- Enter the desired scaling factor as a fraction (2/1 to make the notes twice as long; 2/3 to turn quarters and eighths into triplets).
- Click **OK**.

If you want to scale a range of notes including any controller transitions:

- Press the **⌘** key and select the **source** range you want to scale.

- Type F2 or ⌘-X to copy the range to the clipboard and remove the notes from the track.
- Press the ⌘ key and select the **destination** range or press both the ⌘ key and the ⌘ key and click near an end of the selected range to extend or shrink the range.
- Type F4 or ⌘-V to replace the selected range with the contents of the clipboard.

Find the First/Last Note in a Track

- Activate a score, keyboard, TAB or drum view of the track.
- Hit the *esc* key to deselect all notes.
- Hit the tabulator key to select the first note (press the ⌘ key along with the tabulator key to find the last note). The selected note will scroll into view.

As an alternative, you can select all notes in the track and check the note starts in the inspector window.

Quickly Scroll to the n^{th} Measure

- Click the start bar field in the song header.
- Type the number of the desired measure.
- Hit the enter key. The window will scroll horizontally such that the start bar becomes the first visible measure.

Remove an Empty Section from the Beginning of a MIDI File

If the song starts with an upbeat (such that most of the first measure is unused), you may want to remove the silent part at the beginning before saving the song as a MIDI file. These instructions assume that you do want to keep the empty section in the **easy beat** file.

- Save the song.
- Find out how many eighths of the first measure are empty (e.g., 6).
- Change the time signature such that the entire first measure becomes empty (e.g., to 6/8 or 3/4).
- Select **Delete Bars...** from the **Edit** menu and remove the first measure.
- Use the **Save As...** command to export the song into MIDI format.
- Select **Revert** from the **File** menu to restore the saved song.

Note: If you open the MIDI file with **easy beat** again, it will appear with a wrong time signature.

Change the Order of a Track's Views

- Click the close boxes of all extra views until only one view remains.
- Select the desired view type of the first view from the **Track** menu.

- Press the \uparrow key and select **Add ... View** from the **Track** menu in the desired order.

Create an Echo Effect for a Track

- Activate the track to which you want to add the echo effect.
- Select **Add Track** from the **Track** menu to create a new empty track right below the original track.
- Copy the entire content of the original track to the new track, as described in *Copy an Entire Track*, above.
- Set the instrument and transposition of the new track to the same as the original track.
- Reduce the volume of the new track to about 1/2 or 3/4 of the original track's volume.
- Use the **Delay** variation in the new track's "Var" pop-up menu to make the new track lag behind the original track. Depending on the tempo of the song, use a delay of 20% to 50% of 1/8.

If you change the original track later, you'll have to copy it to the echo track again.

To create an echo effect for a drum track, you can use the following technique without using an extra track:

- Activate the drum view of the track.
- Type ⌘-A to select all notes.
- Set the grid to 1/32.
- Press the ⌘-D key, click one of the notes and duplicate the notes by moving them to the right until the message in the status bar reads "**ΔTime = 1/32**".
- Press the *ctrl* key and click on one of the copied (now highlighted) notes. Reduce the velocities of the duplicates by about 20 or 30.
- While the copied notes are still selected, turn the grid off and adjust the delay by moving the notes to the left or right using the horizontal arrow keys.

Warning: Once the duplicated notes are deselected, there is no easy way to remove them again. Keep them selected while you experiment with various delay offsets and velocities, and use this technique only if you are sure that the drum track will not change later (or create a backup copy of the entire song first).

Repeat a Drum Pattern Over an Entire Song

- Fill the first measure of the metronome track with the drum pattern.
- Turn the metronome track on by enabling its speaker icon. The first measure of the metronome track will be repeated over the entire duration of the song.

If you save such a song as a MIDI file, **easy beat** does not add the metronome track to the MIDI file. In this case, you need to fill the drum track with the contents of the metronome track:

- Determine the length of the song: Turn the loop off, play the last few measures and watch the red bar jump from measure to measure until the song stops. Remember the number of the last bar that was played (e.g., 80).
- Remove all notes from the drum track (type **⌘-A**, then hit the backspace key).
- Copy the notes from the metronome track to the first measure of the drum track.
- Use the **Duplicate Bars...** command from the **Edit** menu to duplicate the first measure. The sentence should read “Insert *nn* copies of bars 1 to 1 before bar 2”, where *nn* should be the length of the song minus one (in our example, 79). Make sure that the **in the CURRENT track** option is selected.

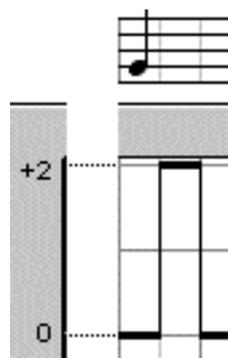
Create a Legato Effect

You sometimes will need to tie two notes of different pitch, as shown in the following figure:



easy beat cannot display such a legato in the score view, but you can simulate the effect using the “Pitch Bend” controller:

- Create a single note with the pitch of the first note and the duration of both notes (a quarter G note in this example)
- Add a controller view for the track and switch it to the “Pitch Bend” controller.
- If the interval between the notes exceeds two semitones, use the **Pitch Bend Range...** command from the **Track** menu to increase the visible range of the “Pitch Bend” controller.
- Increase the pitch of the second half of the note by drawing a horizontal line at the desired interval, and reset the pitch to 0 after the note. Use the **↑** key to make the horizontal lines snap to semitones. The result should look like this:

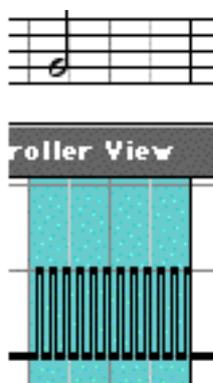


To make the legato softer, select the upward slope of the controller transition using the **⌘** key and type **⌘-M** a few times.

Create a Trill

To create a trill, make a “Pitch Bend” controller transition that rapidly changes between 0 and an alternate pitch (such as +1 semitone). For example, use ten such changes to turn a half note into a trill:

- Find an unused part in the “Pitch Bend” controller view.
- Create a square wave consisting of ten equally distributed semitone changes (for example, 1/8 note apart).
- Select the entire sequence using the **⌘** key.
- Type F2 or **⌘-X** to remove the sequence and copy it to the clipboard.
- Select the controller range that overlaps with the note to which you would like to add the trill.
- Type F4 or **⌘-V** to copy the contents of the clipboard into this range:



To make the trill softer, type **⌘-M** (for **Smooth**) a few times.

Fade Out All Tracks Simultaneously

- Find the longest track (which determines the length of the entire song).
- Press the **⌘** key and click the first track’s speaker symbol to mute all other tracks.
- At the end of the track, draw a downward slope in the “Volume” controller.
- Set the start bar somewhere near the end of the song and play the last few measures to check if the fade-out sounds good. If necessary, repeat the previous step.
- Type **⌘-A**, then F3 or **⌘-C** to copy the entire volume controller transition to the clipboard.
- For each of the remaining tracks: Open their “Volume” controller view and type **⌘-A**, then **⌘-V** or F4 to replace the entire volume controller transition with the contents of the clipboard.

Note: This procedure assumes that you use the “Volume” controller for nothing else but the fade-out at the end of the song. If you need to modify the volumes of individual tracks in the middle of the song, you can use the “Expression” controller (which serves as a secondary volume controller).

Create a Decelerando

Some songs end with a “decelerando”, i.e., the last measure slows down slightly. You can simulate that by creating a downward slope in the Tempo View at the end of a song:

- Open the Tempo View and scroll to the end of the song.
- Click near the original tempo at the beginning of the last measure while pressing the \uparrow key (to make the tempo snap to the original value).
- Release the \uparrow key and draw a downward slope towards the very end of the last measure. As a rule of thumb, try reducing the tempo by about 1/3 to 1/4 (e.g., from 120 to 80 or 90).

Shorten or Extend Individual Measures

You may sometimes want to insert an extra quarter in a measure. **easy beat** currently does not support multiple time signatures within a song, but you can simulate the effect with the Tempo View.

- Select the last quarter of a measure in the Tempo View (using the \leftarrow key).
- Type “/2” (or “*0.5” to reduce the tempo to half of the current tempo. The last quarter will then play twice as long. If the song is in 4/4, the entire measure sound as if it were in 5/4.
- Since all notes within the last quarter will now play twice as long, you will need to insert 1/8 notes as 1/16 notes.

You can use the same technique to insert breaks of arbitrary length between sections of a song. Just insert an empty measure between adjacent sections and adjust the tempo such that the break takes as long as you want. If necessary, insert multiple measures for longer breaks.

More Tips...

Check out the FAQ page on our WWW server for more tips:

<http://www.macility.com/products/easybeat/faq.html>

11 Troubleshooting

This chapter explains how to solve a few problems that can occur when you work with **easy beat**. If you use an external synthesizer for playing songs and/or a MIDI instrument for recording, you will also need some third party software (such as the Open MIDI System or FreeMIDI). If you have problems accessing your external hardware from **easy beat**, you may also need to check the documentation of the extra software for troubleshooting tips.

Playback Doesn't Produce any Sound

If the **Music** menu appears dimmed, you do not have the QuickTime Music components installed on your computer. If you have QuickTime 4 or newer installed, launch the **QuickTime Updater**, click **Continue** and then the **Custom** button to see a list of available QuickTime components. Make sure that "QuickTime Music" is checked, then click the **Update Now** button.

If QuickTime is properly installed and you still don't hear anything when you play a song, try using the built-in QuickTime synthesizer first:

- In the **Music** section of the **QuickTime™ Settings** control panel, select the **QuickTime Music Synthesizer**.
- Select **Default (QuickTime™ Settings)** from the **Synthesizer** submenu in **easy beat's Music** menu.
- In the **Sound** section of the **Monitors & Sound** control panel, make sure the **Computer System Volume** slider is not in the silent (leftmost) position and that the **Mute** checkbox is off.
- If you use external speakers, make sure they are connected properly, turned on and the volume is not turned down. If you have active speakers, check the power supply cables.
- In **easy beat**, make sure that the **Master Volume** and the volume of the individual tracks are not turned down. Check if the speaker symbols of at least a few tracks are turned on. If you play a song, "sound waves" should emerge from the speaker symbols.

If you use an external synthesizer and extra hardware to connect the synthesizer (such as an Opcode MIDI Translator box), check the following list:

- Make sure your MIDI box is connected properly: It should be connected to the modem, printer or USB port.
- Check the MIDI cable used for connecting your external synthesizer. It must be connected to an "OUT" port of the MIDI box and to an "IN" port of the synthesizer.
- If the MIDI box has a MIDI/THRU switch, make sure it is in the MIDI position.
- Make sure your additional software (MIDI Manager, the OMS MIDI System or the FreeMIDI software) is installed and configured properly. Check the manual of the software for details. If the

software lets you choose the port for connecting your MIDI device, select the printer or modem port (whichever port your MIDI box is connected to).

- Make sure a General MIDI synthesizer shows up in the **Music** section of the **QuickTime™ Settings** control panel. If it doesn't, click the **Edit List...** button and add a synthesizer of type "General MIDI" and make sure the correct port is selected.
- Try selecting **External Synthesizer** from the **Synthesizer** submenu in **easy beat's Music** menu.
- If your MIDI box has indicator lights for MIDI signals, check if they blink when you play a song.
- Make sure that the MIDI channels are not muted on your synthesizer.
- If necessary, try to reset your synthesizer and/or make the necessary adjustments to make the synthesizer conform to the General MIDI standard. See your synthesizer's manual for details.
- If your synthesizer has activity indicators for incoming MIDI signals, check if they blink when you play a song.
- Connect a headphone to your synthesizer or make sure your synthesizer is properly connected to your audio equipment.
- If your synthesizer is connected to your computer with a stereo "line" cable or a headphone cable, check if the correct ports (OUT at the synthesizer; IN or "microphone" at the Mac side) are used. In the **Sound** section of the **Monitors & Sound** control panel, try different settings of the **Sound Monitoring Source** pop-up menu and make sure the **Computer System Volume** slider is not in the silent (leftmost) position and that the **Mute** checkbox is off.
- To verify that both your MIDI driver software and the **QuickTime™ Settings** configuration are correct, try opening and playing a MIDI file with QuickTime Player. If necessary, create a new song with a few notes in **easy beat** and save it as a MIDI file. If QuickTime Player plays the song on your externally synthesizer, it will also work for **easy beat**. Otherwise, there is a problem with the MIDI driver software (OMS or FreeMIDI) an/or **QuickTime™ Settings**. Try to fix that first before looking for a workaround within **easy beat**.

Song Plays with Wrong Instruments

- If you use the built-in QuickTime synthesizer or an external synthesizer that conforms to the General MIDI, GS or XG standard, make sure that **Default (General MIDI)** is selected in the **MIDI Mapping** submenu in the **Music** menu.
- If your external synthesizer does not conform to General MIDI, create a MIDI mapping file for the synthesizer (as explained in the *MIDI Mapping* section in *6.6 Music Menu*). Make sure your custom mapping file is checked in the **MIDI Mapping** submenu in the **Music** menu.
- When you launch **easy beat** before connecting your synthesizer or turning it on, **easy beat** may already have tried to set up the channels of the synthesizer. In that case, quit **easy beat**, make sure your synthesizer is ready to accept MIDI input and launch **easy beat** again.
- If you're using an external synthesizer, make sure it accepts "program change" messages. Some models allow this feature to be turned off. If that is the case, **easy beat** cannot switch the instruments for MIDI channels, so the synthesizer will continue to use the preset instruments. See your synthesizer's manual about how to enable program change messages. Resetting your synthesizer to the factory settings may also help.

- If an imported MIDI file (e.g., one that was downloaded from the WWW) uses the wrong instruments, **easy beat** may not have been able to find out which instruments are to be used for the various tracks. In this case, you will have to assign the correct instruments to the tracks using the instrument pop-up menu. Sometimes, the intended instruments will show up in the track names. Use these names as a hint which instruments should be used.
- If a song contains instruments that are not part of General MIDI (displayed in italic in the track's instrument field), the built-in QuickTime synthesizer uses a similar replacement instrument. If you use an external synthesizer, check if it supports these instruments: Select the **Instrument #...** item from the instrument menu and look up the bank select (CC0, CC32) messages and the program number in your synthesizer's manual.
- If you use an external synthesizer that extends General MIDI (such as GS or XG), try one of the initialization MIDI messages in the **Playback Options** dialog.

Cannot Record from a MIDI Instrument

- Make sure your MIDI box is connected properly and your MIDI extensions are set up to accept MIDI input.
- Check the MIDI cable: It should be connected to the MIDI OUT port of the instrument and the MIDI IN port of the attached MIDI box (**not** to the MIDI IN port of an external synthesizer).
- Click the **Edit List...** button in the **Music** section of the **QuickTime™ Settings** control panel, and make sure the correct **MIDI Port** shows up under **QuickTime MIDI Input**.
- Make sure the track you wish to record to is enabled in **easy beat** (the track should appear with a dark gray border).
- If you wish to record at the end of a song, enter a high bar number (beyond the length of the song) as the end of the loop range. Otherwise, recording will stop when the end of the song is reached.

Notes Cut Off or “Hang” During Playback

This effect can occur if notes of the same pitch overlap (such that the second note starts before the first note ends). To correct the problem, perform the following steps:

- Find the track that causes the problem.
- Activate the track and hit the *esc* key to deselect all notes.
- Select **Clean Up Notes** from the **Edit** menu.

Notes Continue Playing After Stopping a Song

This can happen sometimes with external synthesizers if you switch to another track while playing your MIDI instrument or if “note off” messages get lost.

- Select **Reset All** from the **Music** menu.

- If that doesn't help, quit **easy beat**, switch your external synthesizer off and on again, then relaunch **easy beat**.

Uneven Playback

When you use **easy beat** with a slow computer, you may experience small pauses and/or unwanted changes in the tempo of the song.

- Turn file sharing off. If someone connects to your computer, some of your Mac's processing power is used to serve your "guest".
- Quit other applications, especially those that perform background tasks (such as copying or downloading files) while **easy beat** plays a song.
- Try to turn virtual memory off.
- Use the **Extensions Manager** control panel to turn off unneeded extensions and control panels. Do not turn off any of the QuickTime extensions. Restart your computer to use the reduced set of extensions and control panels.
- If the first few notes sound out of beat, define a short **Playback Delay** (e.g., 200 msec) in the **Playback Options** dialog.

There is a known problem with QuickTime 5 (up to 5.0.2 – the latest official version available when this document was written) that can result in stumbling playback and omitted drum notes. We hope that this problem will be resolved by Apple in the near future. Until then, you can use one of the following workarounds:

- Turning virtual memory off may resolve the problem. During our experiments, this helped in all cases but one.
- If you use an external synthesizer, the problem disappears. Apparently, the problem has to do with QuickTime's internal sound generator.
- If that all fails, try reinstalling QuickTime 4 if you can get it. If you received **easy beat** on a "macility Collection" CD, you'll find a complete installer for QuickTime 4.1 that doesn't require a network connection. However, if you already have QuickTime 5 installed, Apple recommends that you first uninstall that before installing the older version.

Modification Warning

When a message tells you that "**easy beat** has been modified in an illegal way", this can have one of the following reasons:

- Your system has been infected by a virus which (among other things) modified the **easy beat** application.
- Somebody made an attempt to crack **easy beat**.

You should take this warning seriously. If you know that your copy of **easy beat** has been tampered with, just restore it with a backup copy or download **easy beat** again from our WWW server.

If you do not know of such a modification, it is very likely that you have a virus. **easy beat** quits after displaying the message to prevent further spreading of the virus. Try to use anti-virus software (such as Norton AntiVirus) to remove the virus. You may also need to reinstall some of your software from a backup disk.

Note: **easy beat** versions older than 1.3 sometimes triggered a false alarm. This problem occurred under Mac OS 9.1 as well as under some System 7.x versions. It has been fixed in **easy beat** 1.3.

MIDI Buffer Overflow

When **easy beat** opens a song, it sets up the synthesizer's MIDI channels to use the correct instruments. During this process, many MIDI messages need to be sent to an external synthesizer. If the data rate is too high, the synthesizer may not be able to receive and process the MIDI messages quickly enough. The synthesizer then may display a message such as "MIDI Buffer Overflow" and will not accept further MIDI input. To continue using **easy beat** with your synthesizer, you need to:

- Quit **easy beat**.
- Reset your synthesizer. If that doesn't help, you may even need to unplug its power adaptor for a few seconds.
- Relaunch **easy beat**.

We have seen this sort of problem only with the MIDI Manager extension (which is no longer supported by Apple). We recommend that you use OMS (the Open MIDI System) instead, which appears to better respect the capabilities of the attached synthesizers.

Other Questions?

If you have a question that wasn't answered in this chapter, please visit our FAQ page:

<http://www.macility.com/products/easybeat/faq.html>

If that didn't help either, contact us at the following e-mail address:

easybeat-support@macility.com