HymnSite.com
"How To" Pages

How to . . .
Customize MIDI Files from HymnSite.com

It is no surprise to me--people like the MIDI files at HymnSite.com, but they want to change them "just a little bit." Some people want them to play faster, others want them to play slower. Some want different instruments. Some want introductions. Some want to transpose the music higher, and some want it lower. You wouldn't believe how many different things people want to do. To tell the truth, HymnSite.com's MIDI files were created so that they could be changed. They were originally intended for transposing parts in different keys for wind instruments like trumpet or French Horn. If you want to use them for anything else, you really have to do some customizing.

How do you do this? Well, you will need some kind of MIDI software to do it. I am preparing this "How To" page using *Jazz++*, a free MIDI sequencing editor that can do just about everything you will need. It is not a "publishing" application, though, so it won't help you print music. I'm keeping my eyes out for a free music publishing application. If you know of one, please let me know at *HowTo@HymnSite.com*. I usually use MusicWrite for publishing. It is commercial software that does a reasonably good job. You can also consider using commercial products from NoteWorthy, Cakewalk, and Coda Music. Links for each of these can be found in HymnSite.com's HymnStore.

Contents:

- How to get and start *Jazz++*
- **Opening a MIDI file**
- **Putting space between notes**
- **Adding an introduction**
- **Adding verses**
- **Changing tempos (how fast it plays)**
- **Assigning voices (different sounds)**
- **Changing the volume**

- **[What else can this software do for me](#)**

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Good luck, and God bless you--
[CARadke@HymnSite.com](#)

"How To" Pages

How to Get and Start *Jazz++*

Contents:

- Finding *Jazz++*
- Starting *Jazz++*
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Finding *Jazz++*

Jazz++ is a program that you can easily find on the internet. Just go to ***http://www.jazzware.com***. Follow the pages on their website to download and install it. As of the date that this page was posted (February 2002), the program was freeware, which means that you can install and use it on your computer for free. Be sure to read the license for yourself, though, since it is their program, and you are using it with their permission.

Jazz++ does not work for every computer operating system. If you use a different operating system and there is a freeware program for your system, please write to me at *HowTo@HymnSite.com* and I'll try to add some information about it here.

Starting *Jazz++*

When you install *Jazz*++, it will create a program group. Go to that program group and click on "*The JAZZ++ midi sequencer*." The program will start and you will see this splash screen:
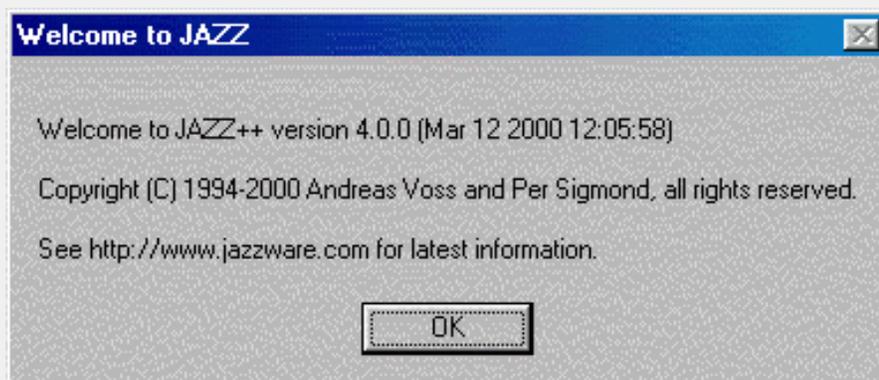
Please let me know if you install a newer version. These folks have created a great program, and I would like to be aware of any updates.

When you click on the "OK" button, the splash will go away and you should see a window something like this:
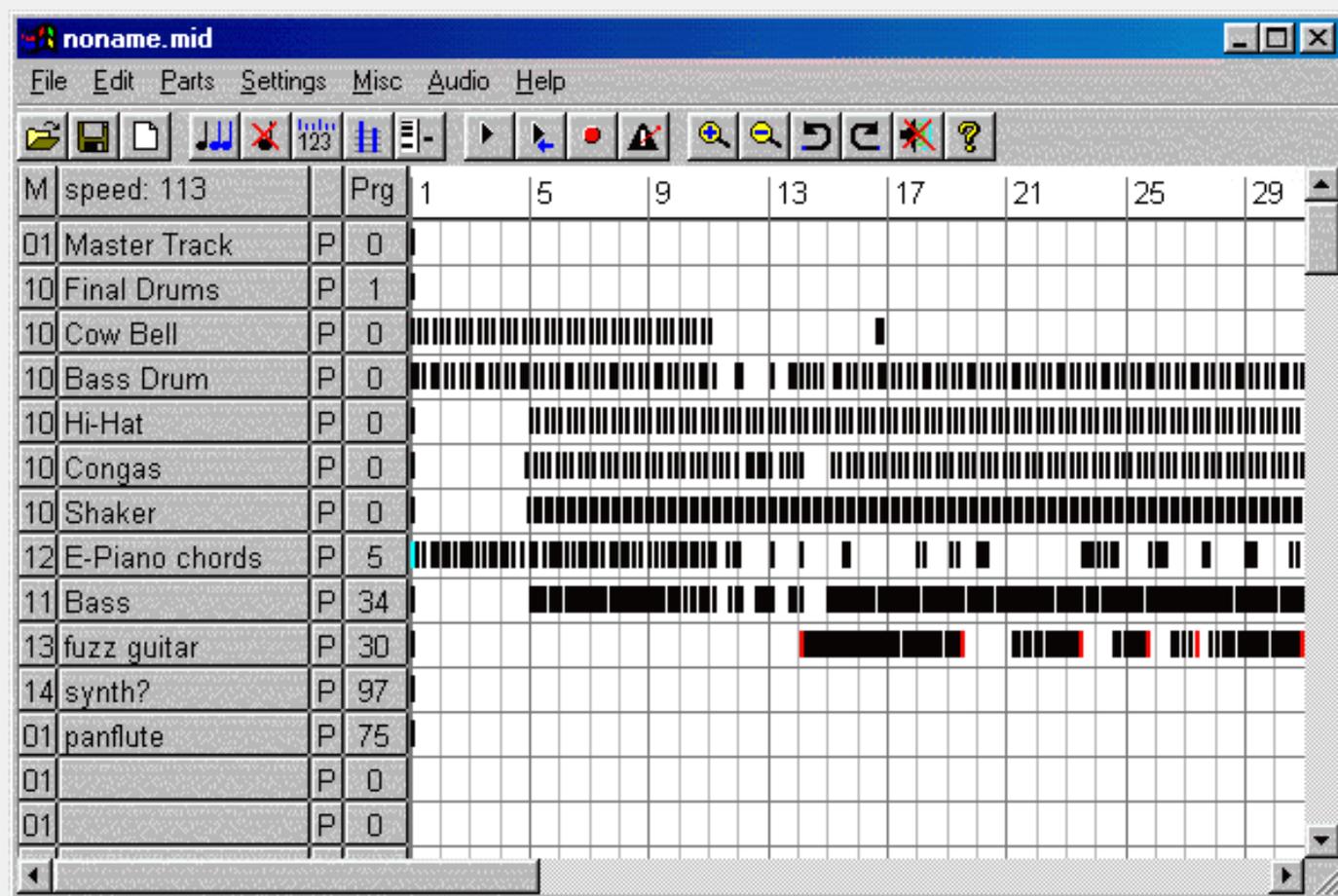
There is a whole lot of information on this screen. I encourage you to simply explore it. Click your mouse on different buttons and see what happens. Then click your *other* mouse button to see what else happens. "*Right-clicking*" your mouse is a tool that more and more programs are using to help you be more productive with your computer.

There are more features in the program than I plan to cover in this "How To," so there are many things you will find interesting and useful on your own. For now, let me point out a few things. Below the menu are "toolbar" buttons. You will find that these are very useful. Put your mouse over one and text will "pop up" to tell you what it will do.

Below the toolbar is information about the MIDI file. On the first row you see the letter "M" in a box. Click on it and it will change to "T." Click again and it will change back. Notice that the numbers under that column change as you go back and forth between M and T. "M" refers to the MIDI channel, and "T" refers to a track number. Each row under the heading represents a different "track." Any number of tracks can be pointed to a specific MIDI "channel." MIDI tracks and channels are what make your MIDI file work with your sound card or MIDI keyboard. You can find lots of technical information, but here is *the main thing I need to tell you*: with the "M" in the upper left, you will see that the number "10" shows up several times in the far left column. That is a special channel. *Any track that points at MIDI channel 10 WILL PLAY DRUM SOUNDS*. If you want drum sounds, set the track to channel 10. If you don't want drum sounds, don't use MIDI channel 10.

You may be wondering how to use channel 10 or some other channel. We'll get there soon enough. Just remember: *drums play through channel 10*.

Listen to the midi file by starting the player. You'll enjoy it, or you can stop it. When you are done, we can go to the next page: [Opening a MIDI File](), or you can [go back to the table of contents]().

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Opening a MIDI File

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Opening a MIDI File

To open a MIDI file, you can use the file menu and select "Load...", or you can click on the toolbar button that looks like a file folder with an arrow indicating that the folder is being opened. You will use a normal looking file selection dialogue box to find a MIDI file on your computer. Go to the directory and file that you want to edit and select it. For this "How To" I am going to use umh057.mid, the HymnSite.com file for "O For A Thousand Tongues to Sing."

What you will see in a MIDI file from HymnSite.com

When you open the midi file, you will see something like this:
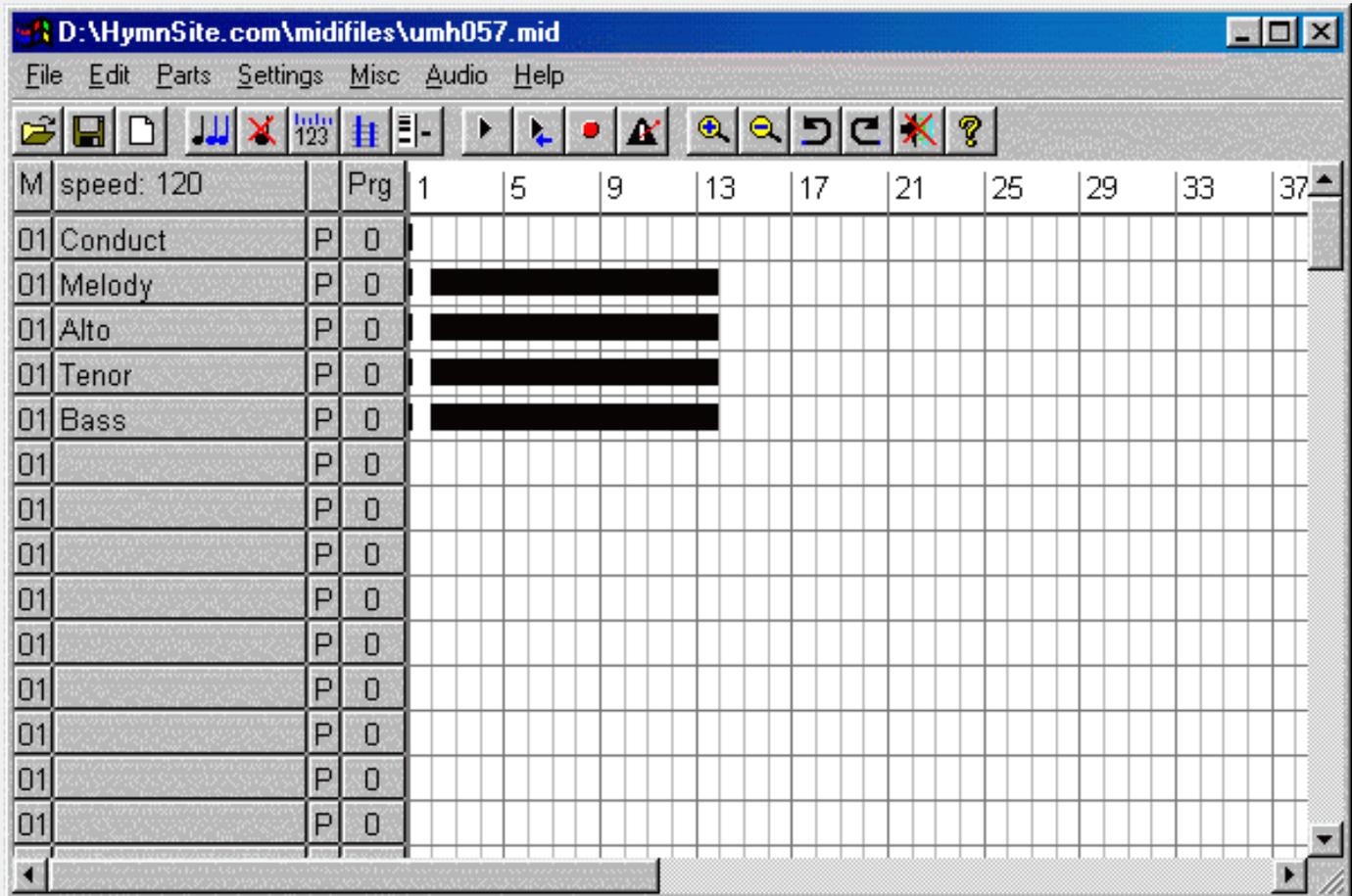
The display shows that the tempo is set at 120. There are five tracks called "Conduct," "Melody," "Alto," "Tenor," and "Bass." All of the tracks are playing through MIDI channel 1, and all of them have no voice or instrument setting (that's what "0" under the "Prg" button means). No notes appear in the "Conduct" track. It was inserted by some other software that I use. The Melody, Alto, Tenor, and Bass parts are recorded on separate tracks. This was done to help with instrumental part arranging. You will also find that it is very useful in preparing MIDI sequencing arrangements, since you can make each part sound like a different instrument.

The grid in the lower right portion of the screen shows where there are MIDI events in each track. The first measure appears blank because this hymn starts on a pick-up note, and I inserted space in the MIDI file for the rests.

The rest of the tracks appear to be solid, black bars. This is because I prepared the parts in a "legato mode" which extends every note to the very edge of the next one. That works fine for percussive sounds such as piano or vibraphone. Unfortunately, these legato notes are blurred into the next note for sustained instruments such as organ or strings. If you would like to know how to create some space between the notes, go to the next page: Putting space between the notes. Otherwise, you might want to go back to the Table of Contents.

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<u>Putting Space Between Notes</u>

<u>Contents:</u>

Selecting Music to Be Spaced

You can edit the music to create space from the main screen that you are already viewing, or you can go to a special track editing screen.
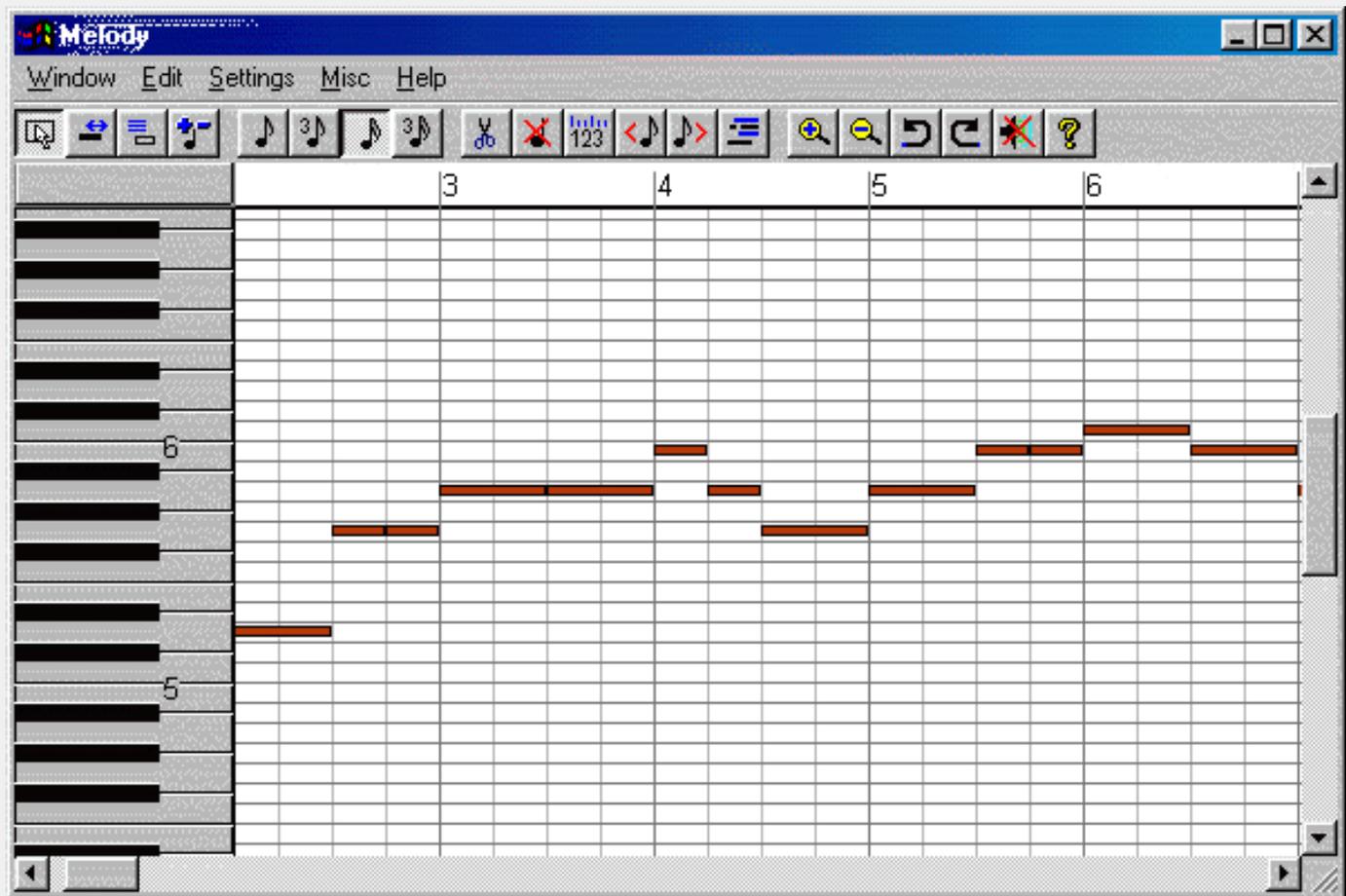
Main Window

From the main window, simply click your mouse in the top-left grid box that you want to edit and drag the mouse to the lower-right box that you want to edit. It will highlight those boxes like this:
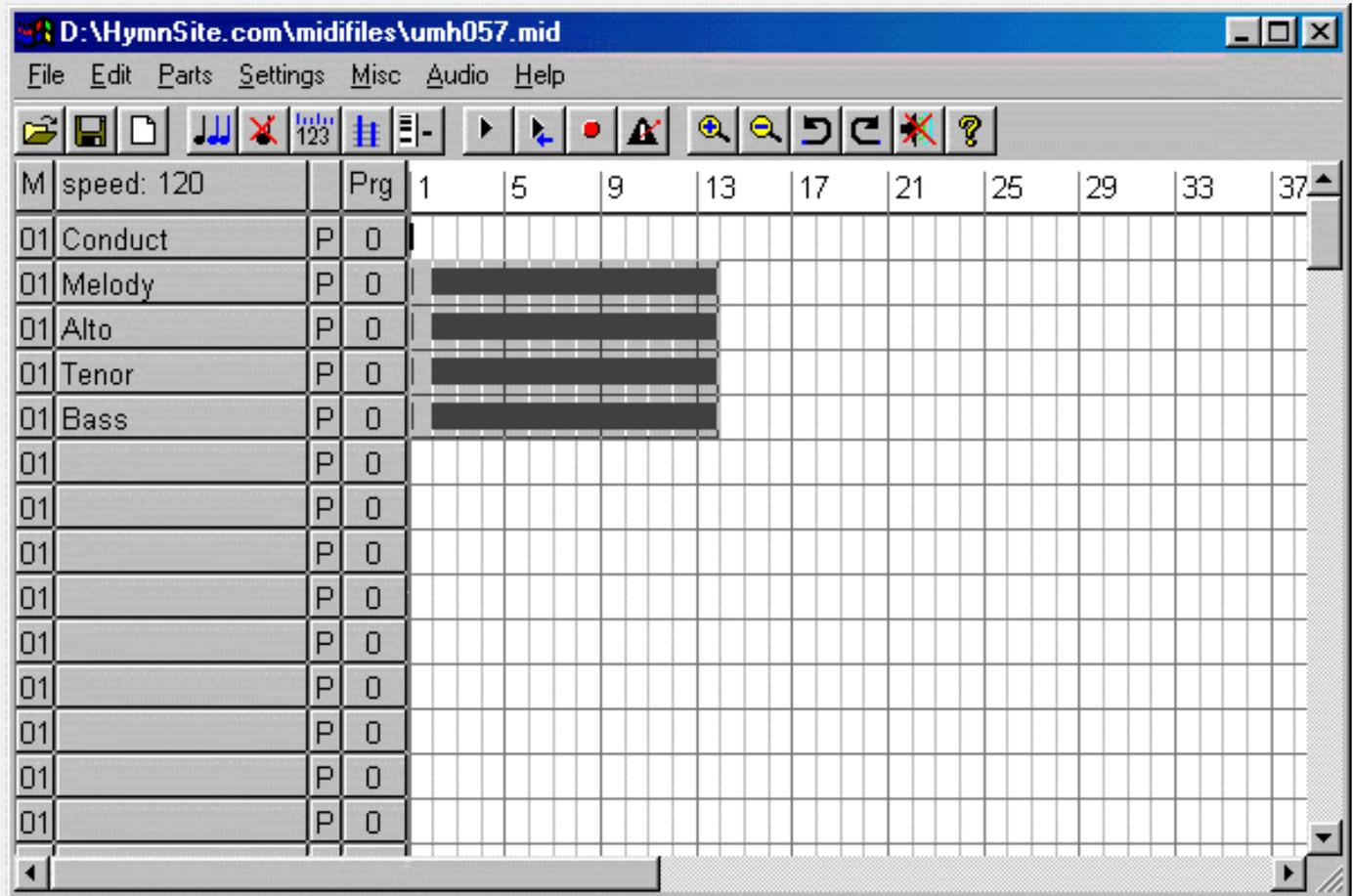
Track Editor Window

The track editor window gives you more control over events in a single track. To open that window, simply "right-click" your mouse in the grid on the track that you want to edit. It will bring up a window that looks like this:

You will notice a piano keyboard on the left. Each note in the track appears next to the corresponding key. Notice that this display shows far more detail than the main window. As a result, you cannot see all of the hymn right now. We can fix that. Click on the toolbar button that looks like a magnifying glass with a minus sign. You can shrink the length of the music display until all of the notes apear on a single screen, like this:
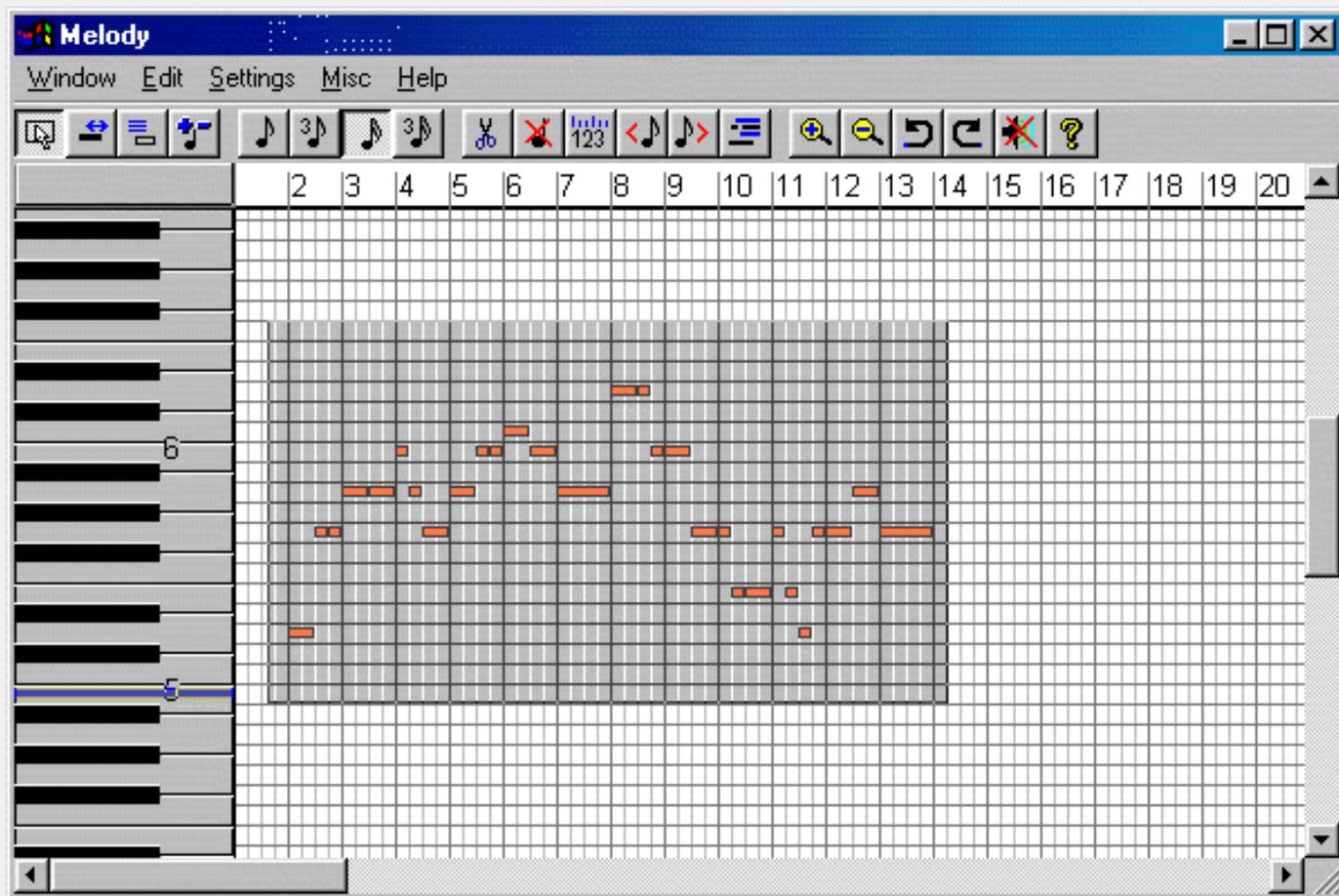
As with the main screen, you can click on a grid box in the upper-left and drag to a point at the lower-right to select notes to be edited. I have selected more area than necessary. This will not hurt your MIDI file. Note that because this screen only affects one track, any other tracks will remain unaffected by your editing here.

Spacing the Music

Now that you have selected music to edit, go to the "Edit" menu and select "Length..." You will see a dialogue box that looks something like this:
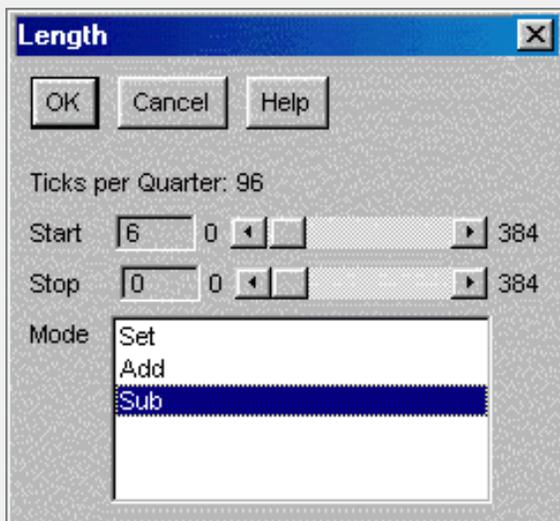
You cannot change the "Ticks per quarter" value, but you need to understand a little bit about it. The number of ticks help determine how much you can subdivide a quarter-note. The simplest subdivision is the eighth-note, which is half as long as a quarter. Since 96 is an even number, it can be divided in half and can be represented with 48 ticks. A sixteenth-note has 24 ticks, a thirty-second note has 12, etc. Triplets are created when you divide the ticks by three.

Why did I say all of that? So that you can pick how much time you want for separating your notes. I like to use six ticks. It is long enough to create a gap, but short enough that the note still has virtually full value. (It is only a sixty-fourth note short of full value!)

Notice that there is a "Mode" list. "Set" will fix the length of every note at the value you choose. We will be creating space between notes of different lengths. Some are quarter-notes, some half-notes, and some eighths. We want the spaces to be equal, but the lengths of the notes will still be different. Instead of "Set," we need to choose "Sub," which will decrease the length of each selected note by the value that we have chosen.

Click on "OK," and your music will now have spaces between each note. Here are examples of the results from the Main Window and the Track Edit Window:

To close the Track Edit Window, simply click on the "x" at the upper-right and you will return to the Main Window.

Now that you have put space between the notes, you can save the file with the spacing. If you want to add an introduction, then you need to go to the next page, Adding an Introduction, or you can return to the Table of Contents.

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Adding an Introduction

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- [Listening for the introduction](#)
- [Making space for the introduction](#)
- [Copying and pasting the introduction](#)
- [Go to the previous page: Putting Space Between Notes](#)
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Listening for the introduction

It is common to use a short portion of the end of a hymn as the introduction. Often it will be four or eight measures. It is fairly simple to see where it begins on a sheet of music. Unfortunately, the *Jazz++* sequencer does not display music in a notation format that is easy to read. As a result, the easiest way to find the beginning of an introduction is to play the MIDI file and watch for where the introduction begins.

Start playing the MIDI file and watch the cursor bar move across the screen. You will see that a standard introduction for "O For A Thousand Tongues to Sing" begins at measure 8. It should look something like this:

Notice that there is a heavy, black, vertical line running down the screen one measure before measure 9. Now you simply count the number of blocks remaining and you will know how much space to leave for an introduction. There are six measures from measure 8 to the end of the piece (be sure to count measure 8 as the beginning of the introduction).

Making space for the introduction

There is not enough space at the beginning of the MIDI file for the introduction. We have to move all of the music over. This is very easy to do. Simply click your mouse at the top-left of the music and drag it to the bottom-right to highlight it like this:

Note that the very first measure is *not* selected. That is the space to leave ahead of the pickup note. Now go to the "Edit" menu and select "Cut." The notes should disappear, just like this:

All of the music is now in your computer's "clip board." We need to paste it into the new position, so go to the "Edit" menu again and select "Paste." When you move your mouse over the music grid, it should have become a hand with a pointing finger. Point the hand at the beginning of the first measure where you want the music to appear. Since the music had started in measure 2 and we need to add 6 measures for introduction, you should point at measure 8. Click the mouse and your screen should look like this:

Good job! Now there is room for the introduction.

Copying and pasting the introduction

Remember that we needed the last six bars for the introduction. I find it easy to select this music by clicking the mouse one measure *past* the top-*right* of the music and dragging to the bottom-*left* so that I can count the measures back from the end. You should highlight the music like this:

This time we want to leave that music where it is and also add it to the beginning as an introduction. Go to the "Edit" menu and select "Copy." Now the introduction is in your computer clip board. We want to paste it into the beginning of the hymn. Go to the "Edit" menu and select "Paste." Now position your mouse so that the hand points to measure 2 of the Melody track (remember the space before the pick-up note?), and click. Now your introduction is in place. It should look like this:

Now that you have an introduction, you should save your work again. If you want more verses, then continue to the next page, Adding Verses, or you can return to the Table of Contents.

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"How To" Pages

<u>Adding Verses</u>

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Highlighting the verse

To add the introduction, we have already learned to highlight, cut, copy, and paste. That is all that is involved in adding as many verses as you might want to have in your copy of the hymn. Remember that we inserted six extra measures at the beginning of the hymn for the introduction. Our first verse begins at measure 8, so we highlight the music from measure 8 to the end. Your work should look something like this:

With the verse highlighted, go to the "Edit" menu and select "Copy." Now the music is in your computer clip board again.

Pasting the verse

Pasting the next verse is just like the pasting that you have already done. Go to the "Edit" menu and select "Paste." Point the hand at the first measure following the music on your screen and click. Your work should now look something like this:

Good job! Now the file will play an introduction and two verses.

And again and again

You may want to sing more than two verses. If so, the music is still in your computer's clip board. Go back to the "Edit" menu and select "Paste" again. Point the hand at the first measure following the music and click in another verse. Keep repeating this as many times as you want. Save your work when you are finished with this step.

If you want to change the tempo, go to the next page, Changing the Tempo, or you can return to the Table of Contents.

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Changing the Tempo

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- [Playing the music slower](#)
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Playing the music faster

Increasing the tempo from the beginning of the piece is very simple. Simply click your mouse on the box labeled "speed=120" and the tempo will increase by one beat per minute. Continue holding the mouse button down and the tempo will continue to increase. If click the mouse, drag it above the "speed" box, and then release the mouse button, the tempo will continue increasing until you click the mouse button again. I will increase the tempo of our hymn to 160. The screen should now look like this:

Playing the music slower

Decreasing the tempo from the beginning of the piece is very simple. Simply *right*-click your mouse on the box labeled "speed=120" and the tempo will decrease by one beat per minute. Continue holding the right mouse button down and the tempo will continue to decrease. If you right-click the mouse, drag it above the "speed" box, and then release the mouse button, the tempo will continue decreasing until you click the mouse button again. I will decrease the tempo of our hymn to 154. The screen should now look like this:

Ritard and Accel.

Changing the tempo in the middle of the piece requires a little more work. Be sure that you have set your base tempo *before* you insert any *ritard* or *accel* commands. After you insert *ritard* or *accel* commands, tempos after them are not affected by the "speed=" button.

Tempo changes in MIDI files are only made in track 1. In this MIDI file, that track is named "Conduct." Let's slow the tempo down at the end of the introduction, and then speed back up as the first verse begins. Start by right-clicking the mouse at measure 6 in track 1. You should see the Track Edit Window like this:
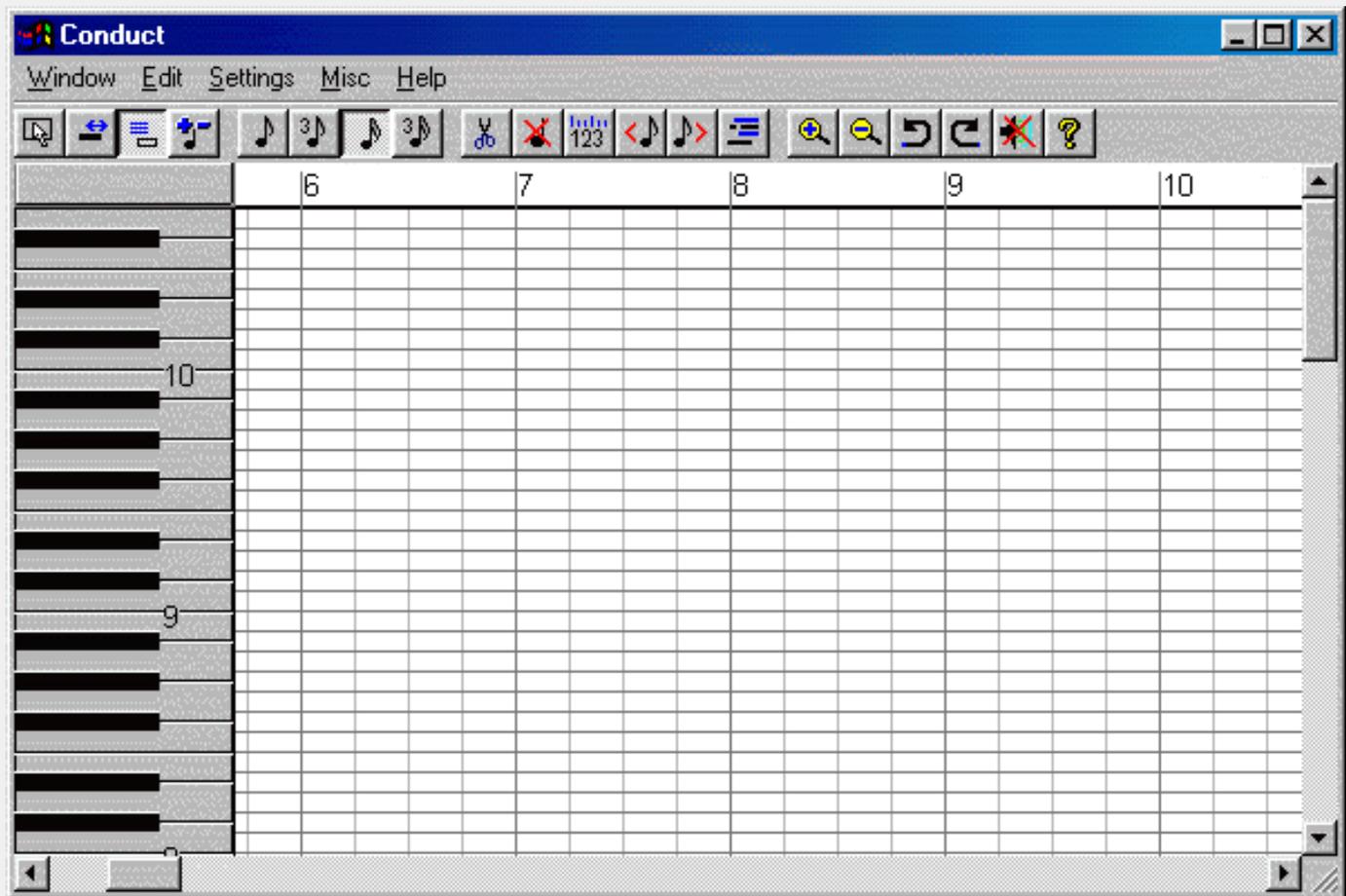
Notice that by pointing your mouse at measure 6, that is where you have entered the track editor. Since we are going to edit the tempo, go to the "Misc" menu and select "Edit Tempo." Your screen should change to show a tempo editing bar like this:
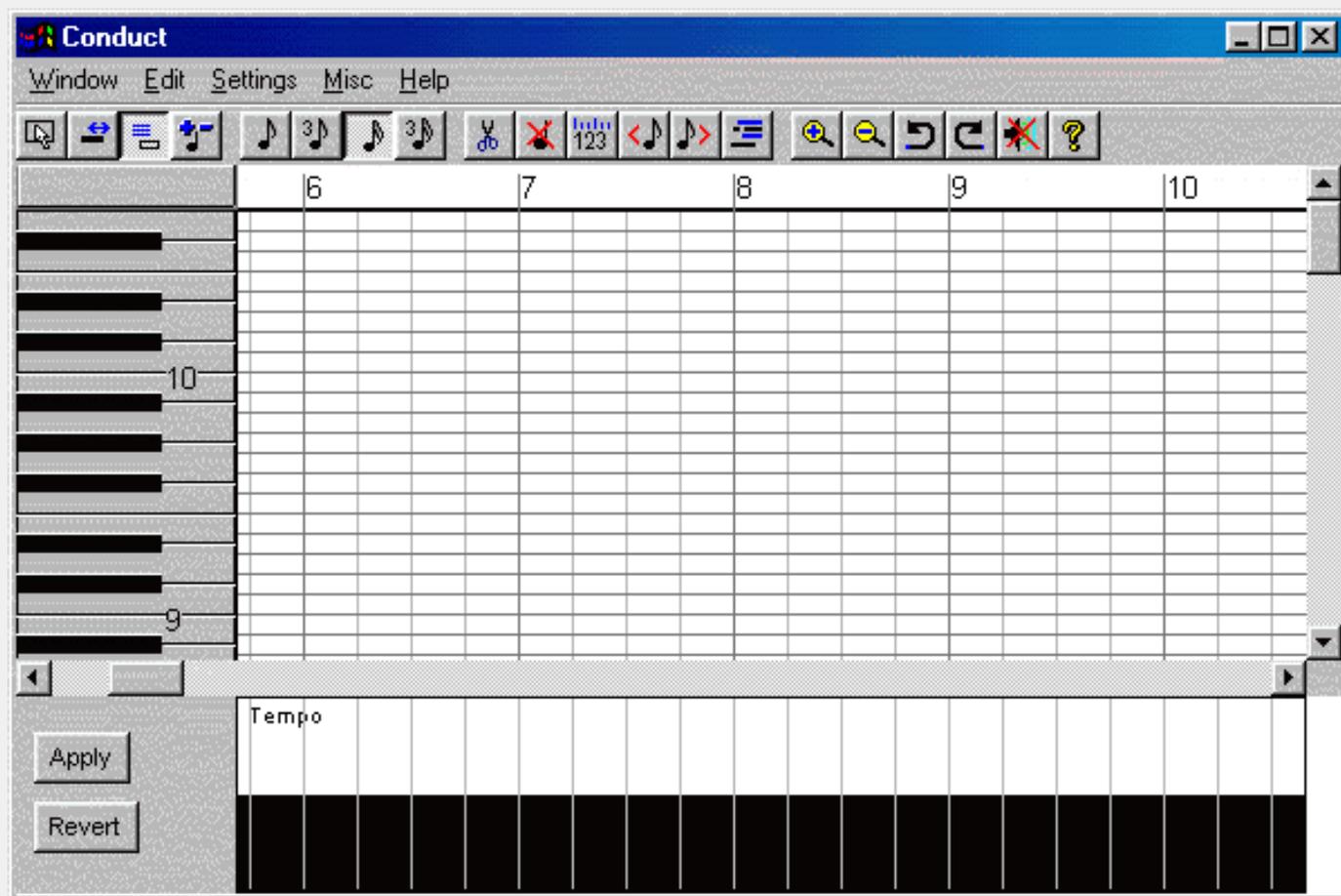
The vertical grid lines in the Tempo window correspond to the measures and grid lines in the piano roll above it. To slow the tempo in measure 7 and pick back up by measure 8, point your mouse at the top of the black section at the beginning of measure 7, and then drag down and across to reduce the tempo through the first half of the measure. The ritard should look something like this:
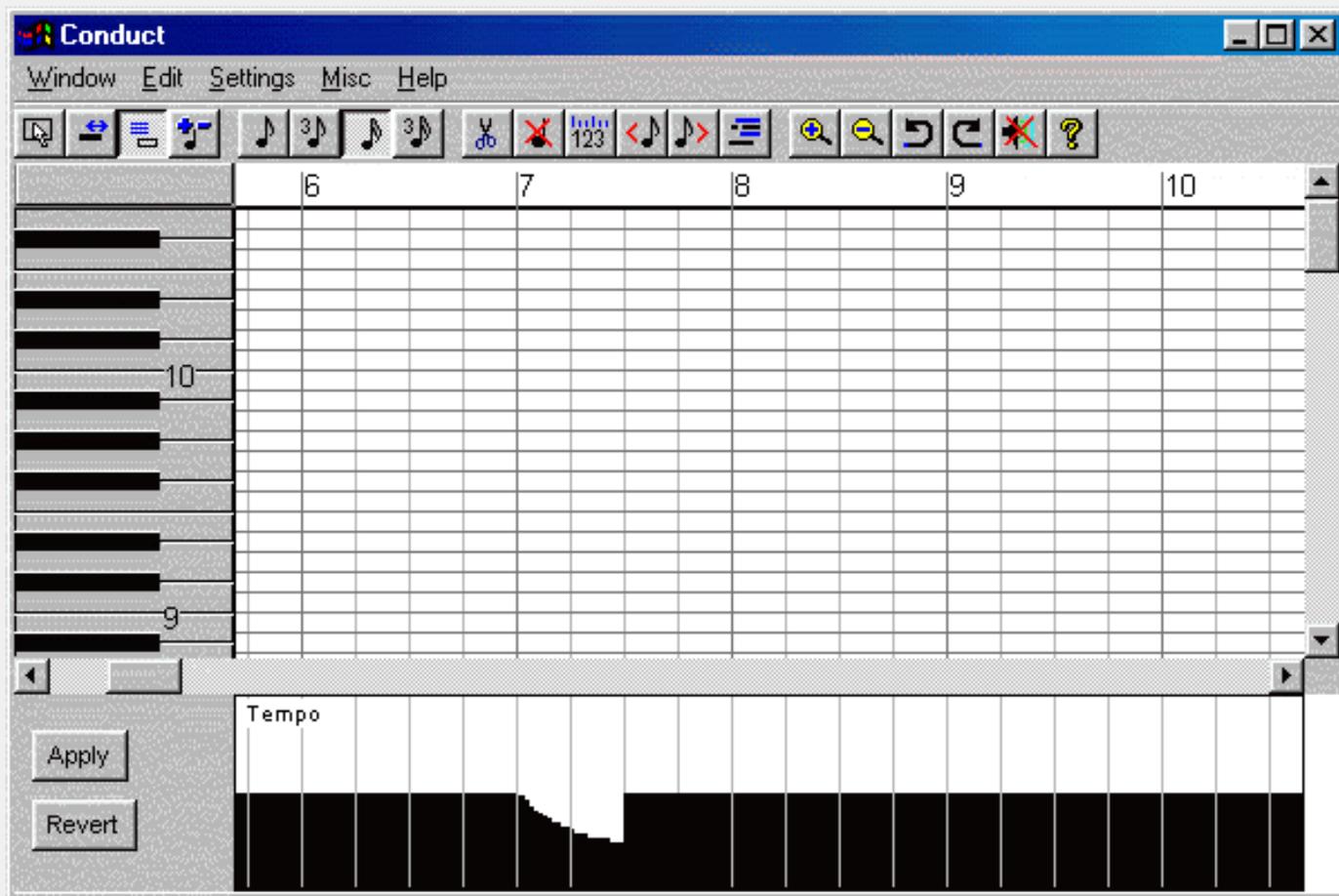
Now click on the "Apply" button to make the change effective.

Notice that the tempo *after* the ritard has not been affected. The MIDI file will resume the original tempo immediately after the ritard. If you want to make the tempo increase more gradual, then you follow a similar approach. Use your mouse to follow the line back up as you approach measure 8. Your result should look something like this:
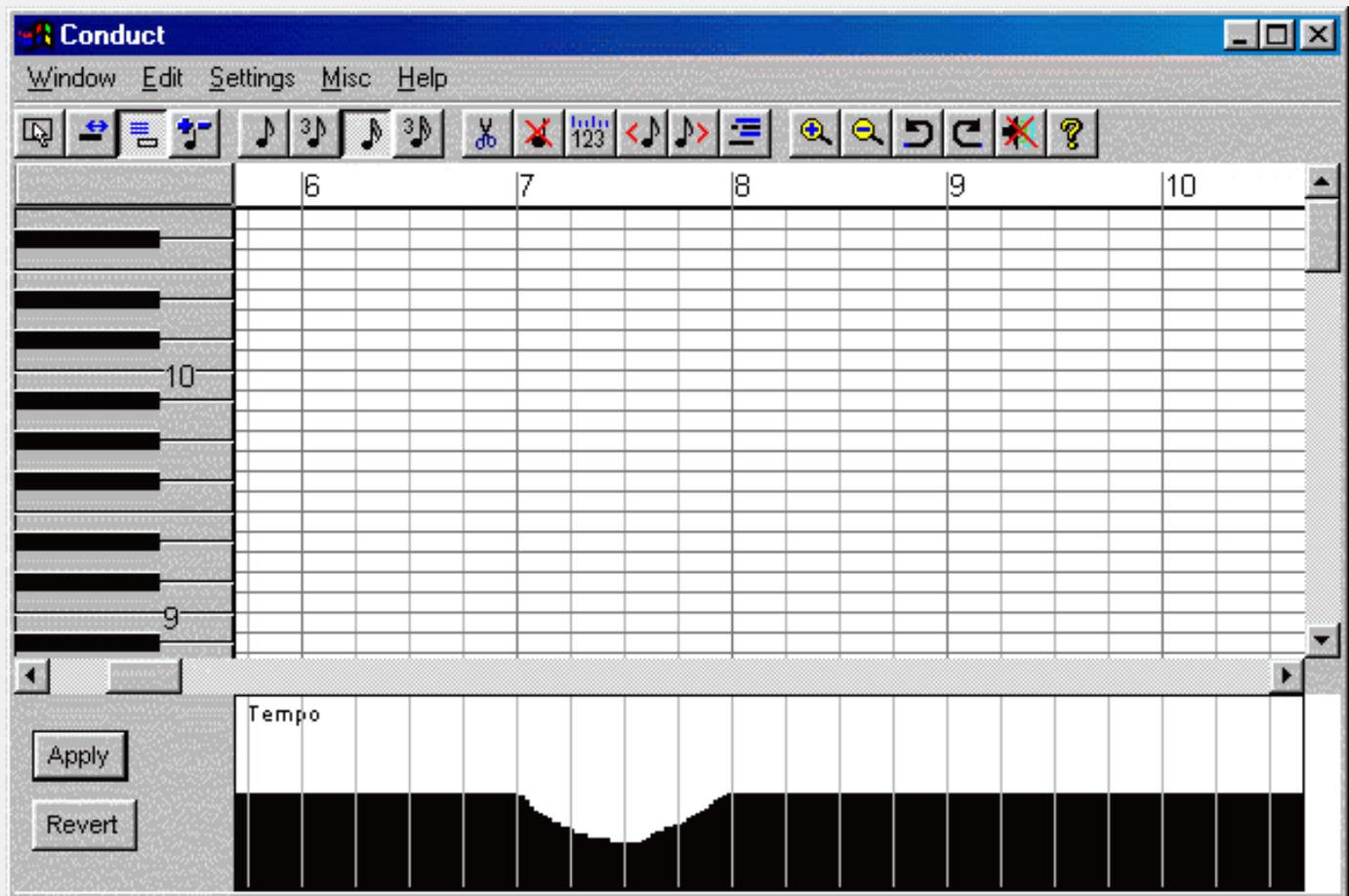
Again, you must click on the "Apply" button to make the change effective. Now close the Track Edit Window by clicking on the "x" button at the upper right and look at the Main Window. You will now see marks in the Conduct track something like this:

The new black marks show that "MIDI events" are occurring in the measure. The tempo changes are "MIDI events."

If you would like to learn about changing the sounds in this file, go to the next page, Assigning Voices, or you can return to the Table of Contents.

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Assigning Voices

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One voice per track

You have to have some understanding of tracks and channels in order to handle voice assignments. A track is nothing more than a series or "sequence" of MIDI commands. A channel is the path that carries those commands to a MIDI device. A track can contain events that are directed to multiple channels and can change voices, but individual commands can have only one channel and only one voice at a time. It is usually better practice not to have multiple channels or change voices on a track, though. Your MIDI sequence will be easier to understand and edit if you avoid making them too complex.

To assign a voice to a track using *Jazz++*, click your mouse on the name of the track. It will produce a dialogue like this one:

Track Settings

OK   Cancel   Help

Trackname:

Melody

Patch
- None
- 1 Piano 1
- 2 Piano 2
- 3 Piano 3
- 4 Honky-tonk Piano
- 5 Rhodes Piano
- 5-8 Detuned EP 1
- 6 E Piano
- 6-8 Detuned EP 2
- 7 Harpsichord
- 7-8 Coupled Hps.
- 8 Clavinet
- 9 Celesta
- 10 Glockenspiel

Set Channel to 10 to make a drum track

Channel   1   1 ◄ ▐   ► 16

☐ Audio Track

☑ Force channel number onto all events on track

☐ Clear track (NB! erase all events, name etc...)
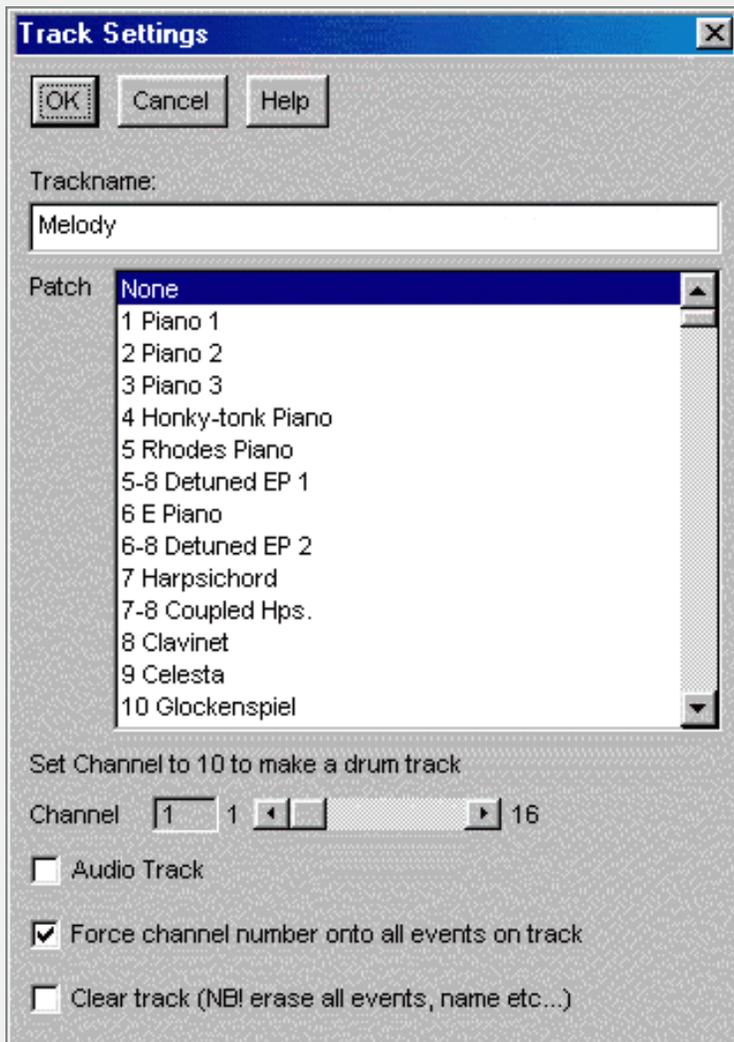
You can change the name to anything you like. It is best to use the name of the instrument (e.g., piano) or the name of the part (e.g., melody). You can choose any sound you want from the list in the dialogue box. Below this you can set the channel number. Audio Track allows you to create sample sounds and incorporate them. That's way beyond this How To, but you can have lots of fun with it. Keep the "Force channel number onto all events on track" checked. Editing a MIDI track with multiple channels is frustrating at best and fruitless at worst. On this file, I am going to leave this track on channel 1 and select a piano voice, like this:

Track Settings

OK   Cancel   Help

Trackname:

Melody

Patch
- None
- 1 Piano 1
- 2 Piano 2
- 3 Piano 3
- 4 Honky-tonk Piano
- 5 Rhodes Piano
- 5-8 Detuned EP 1
- 6 E Piano
- 6-8 Detuned EP 2
- 7 Harpsichord
- 7-8 Coupled Hps.
- 8 Clavinet
- 9 Celesta
- 10 Glockenspiel

Set Channel to 10 to make a drum track

Channel   1   1   ◄   ►   16

☐ Audio Track

☑ Force channel number onto all events on track

☐ Clear track (NB! erase all events, name etc...)

Here is the resulting change on the Main editing window after clicking on "OK."

Notice that there is a number 01 to the right of the Track label "Melody." That indicates that the track has been set to the piano voice. Now the melody should always sound like a piano.

One voice per channel

A channel can techically carry commands for different tracks and sounds, but for practical purposes it is best to use a new channel for each new sound. There are exceptions for MIDI devices such as synthesizers that deliver a variety of output sounds on a specific channel, but editing is much cleaner if you use only one voice on each channel. Let's change the Alto, Tenor, and Bass tracks to channel 2. Simply click on each one and change the slider control to indicate channel 2. On the Alto track, change the voice to 20, Church Organ. You should end up with a result like this:

Notice that I did not assign a voice on the Tenor or Bass tracks. Since they are directed at channel 2, the voice assignment for channel 2 in the Alto track will be used. Play the midi file. You will hear the melody on piano, and the rest of the parts on Church Organ.

To learn about changing the volume settings, go to the next page, Changing Volume, or you can return to the table of contents.

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Changing the Volume

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Volume and Velocity

Volume is a term most of us are familiar with when we are dealing with how loud music is. In a MIDI sequence, though, we talk about "velocity." The concept comes from synthesized keyboards. They do not have physical "hammers" to strike strings or make other sounds, but musicians needed to be able to add expression to their music based on how hard they hit the keys. To associate key strokes with a specific loudness, a sensor was added to indicate how fast the key had been pushed down--the "velocity" of the key stroke.
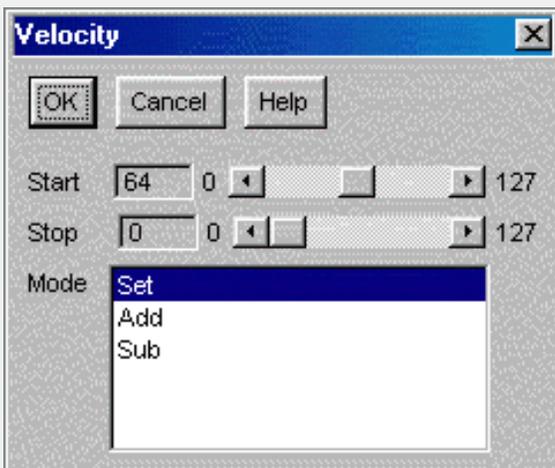

Velocity for the entire file

If you want an entire MIDI file to play at a fixed velocity, highlight the entire piece in the Main Window. You may have to use the magnifying glasses to compress the music, like this:

Now that you have highlighted every note event in the file, go to the "Edit" menu and select "Velocity...". You will see a dialogue like this one appear:

As with the Note Length dialogue, you are able to set start and stop values, and choose whether the settings will set the value for all notes, increase all values, or reduce all values. If you have already edited some parts to include phrasing and accents, you will want to use Add (to make the entire piece louder) or Sub (to make the entire piece softer). We have not adjusted anything yet, so we will simply set the velocity at 100 for all highlighted notes, like this:

Velocity

OK   Cancel   Help

Start 100 0 ◄   □ ► 127
Stop   0   0 ◄ □   ► 127

Mode Set
      Add
      Sub
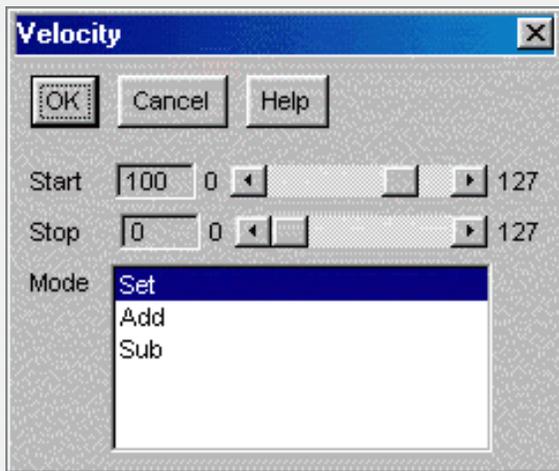
Click on OK, and all of the notes in the entire file have been set to a velocity of 100.

Velocity for an entire track

You may want to hear your Melody above all of the harmony parts. The 100 setting from the previous step is fairly loud, so we can make the accompaniment softer. First, highlight the Alto, Tenor, and Bass tracks like this:

D:\HymnSite.com\midifiles\umh057.Jazzware.mid

File   Edit   Parts   Settings   Misc   Audio   Help

M	speed: 154		Prg	1	9	17	25	33	41	49	57	65	73
01	Conduct	P	0										
01	Melody	P	1										
02	Alto	P	20										
02	Tenor	P	0										
02	Bass	P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										
01		P	0										

Now we can follow the same steps to reduce the velocity on these notes to 80.

Crescendo and decrescendo

Inserting crescendos and decrescendos can be done from the Track Editing Window. Right-click your mouse on the Melody notes at measure 7. Then go to the "Misc" menu and select "Edit Velocity...". You should see a screen similar to this:
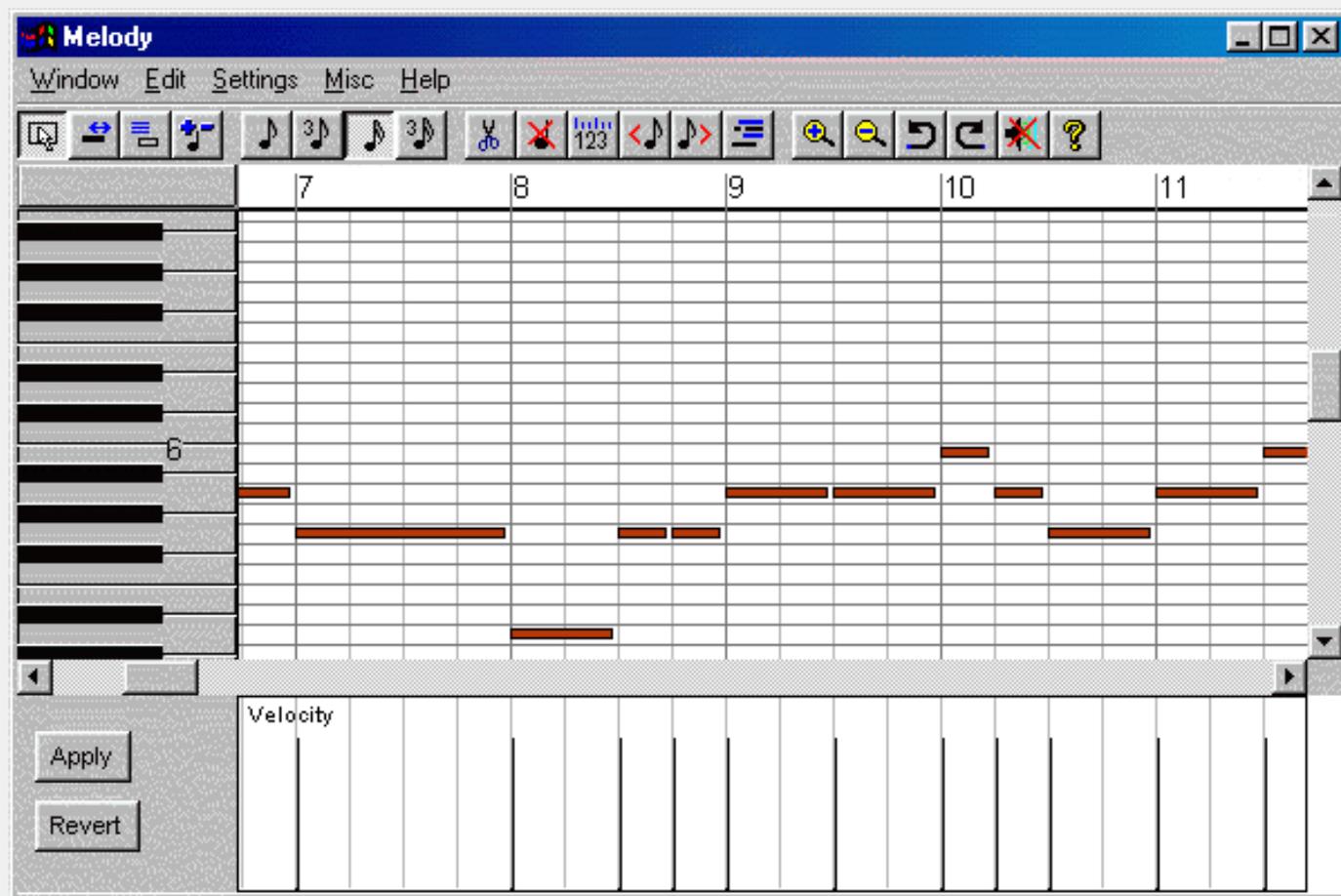
Notice that there is a vertical bar in the bottom window that corresponds to the beginning of each note. The vertical bars represent the velocity for that note. As with the tempo setting, you can adjust and phrase the volume by clicking and dragging your mouse through the bottom window. Try starting with a low volume at the beginning of measure 8, growing louder through the beginning of measure 10, and becoming softer as you reach measure 11. Your work may look something like this:
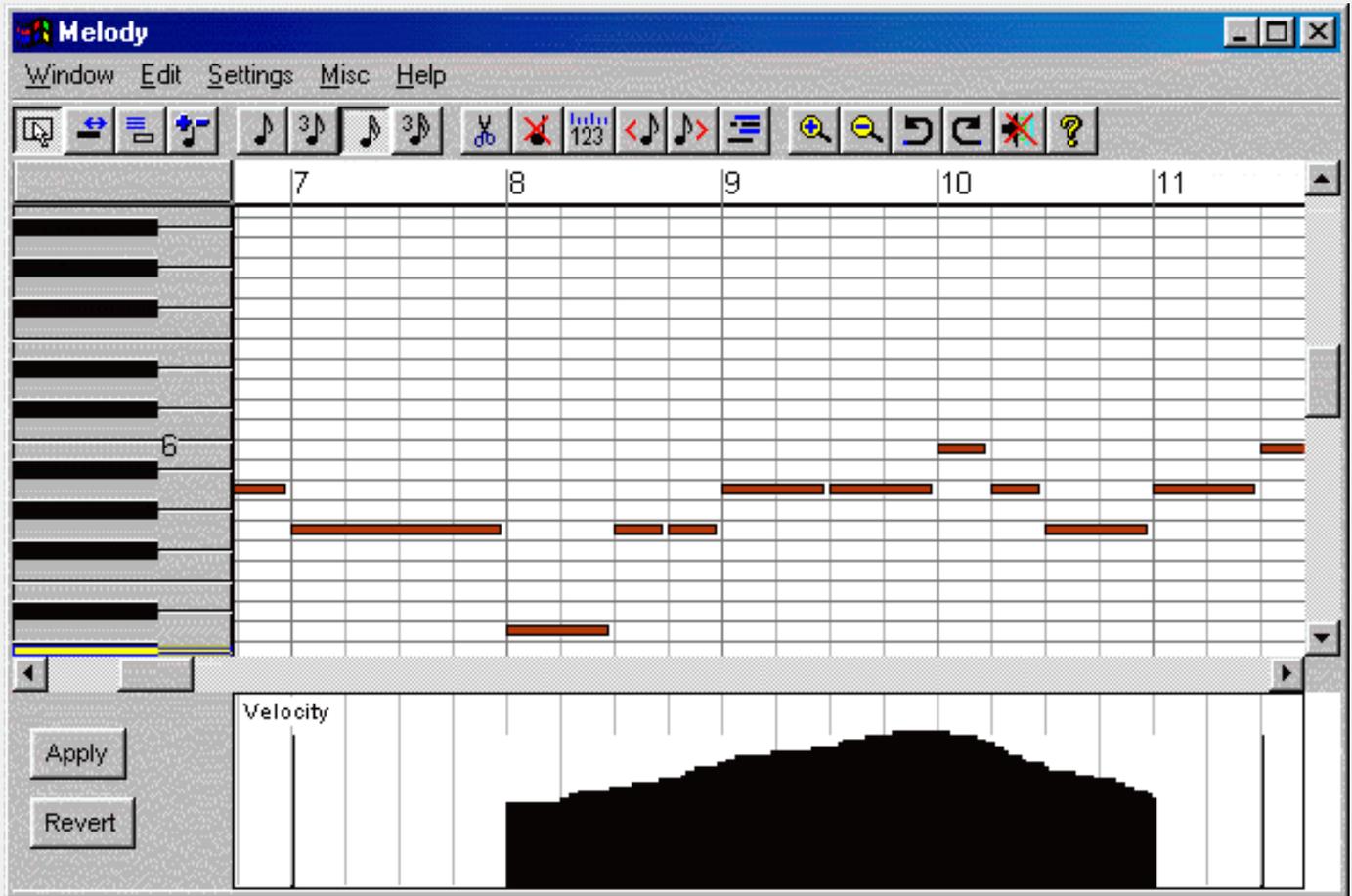
Click on the "Apply" button. Notice that the black area has been removed, but the volume bars at the beginning of each note has been adjusted like this:
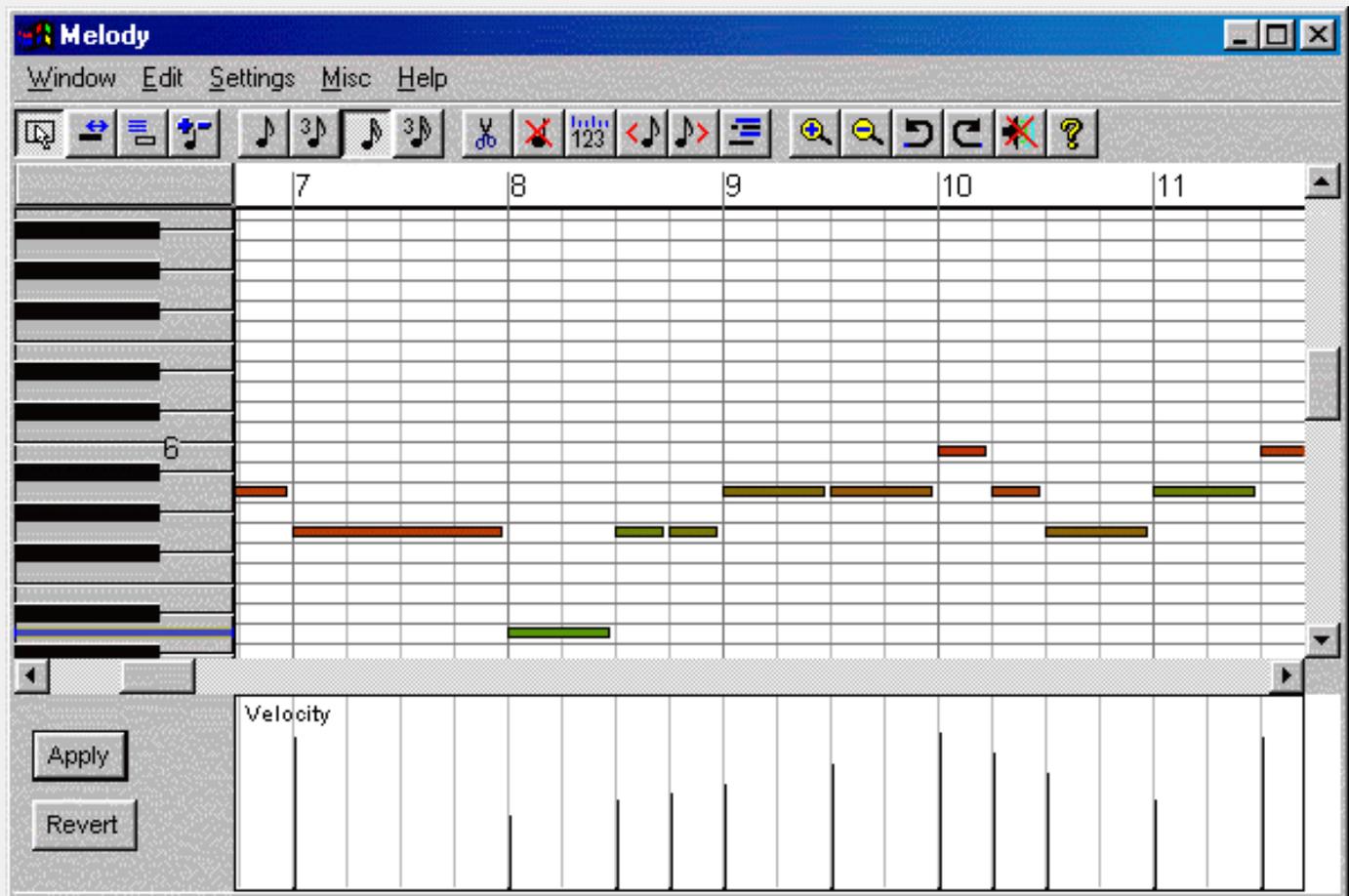
Now close the Track Edit Window and listen to your MIDI file. If you do not like your new phrasing (and you won't like this one!), simply click on the "Undo" arrow in the toolbar. Adjusting volume takes time and practice. Don't get frustrated or give up too soon. Your music will be much better if you master this area.

You have gone through most of what you need to know. If you would like to know what else you can do with this software, go to the next page, or you can return to the Table of Contents.

God bless you--
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"How To" Pages

What Else Can This Software Do For Me

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More Features

If you have more ideas and want to implement them, you will probably find features in *Jazz++* to help you. Take some time to see what additional features are listed under the different menu selections. Remember to right-click your mouse when you want to do something special with a specific note or MIDI event.

More Curiousity

If the menu choices don't lead you to what you want to do, try the help file. You may come up with a unique idea, but most questions and issues have been raised before you and have been addressed somehow in the program. Search the help file to find how other people have handled your issues.

I hope this "How To" was helpful.

God bless you--
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"How To" Pages

I have tried to answer most of questions that I receive frequently on HymnSite.com's FAQ page at http://www.HymnSite.com/faq.htm. Sometimes, though, a FAQ page just isn't quite enough, so here is where I will put "how to" pages as they are needed and created. I hope you find them useful.

Here are my existing "How To" pages:

- Using *Jazz++* to customize MIDI Files from HymnSite.com

Let me know if there are other specific "How To" pages that would help you. Good luck, and God bless you--
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