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# Pro Tools LE & M-POWERED

## THE COMPLETE GUIDE



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## Recording MIDI and Using Virtual Instruments

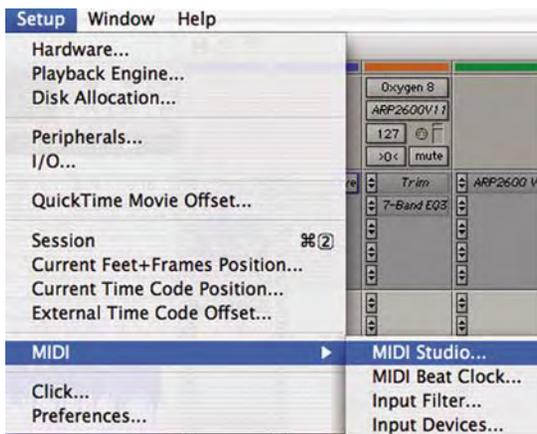
A popular way to start a project, whether a song or an instrumental, is to set up a drum pattern, a bassline and a keyboard 'pad' to mark out the chord changes – often using MIDI instruments, although you can always put guide parts down from real instruments as audio.

This is particularly important if you intend to overdub live musicians one at a time. Most musicians prefer to hear something more interesting than a click to play to while overdubbing, and having a keyboard pad throughout helps to guide the musicians through the arrangement. Drums and bass are arguably even more important than lyric, melody and harmony for many types of dance music, so most dance music starts out with these, and even if you will be recording mostly (or even all) live instruments, it often helps if you sketch the arrangement out first using MIDI instruments.

### MIDI Setup

If you are going to use MIDI with Pro Tools, you need to set up your MIDI connections first.

The MIDI sub-menu in Pro Tools LE's Setup menu contains four items: MIDI Studio, MIDI Beat Clock, Input Filter, and Input Devices.



**Fig. 6.1** – Setup Menu showing the MIDI sub-menu.

### MIDI Studio. . .

With Mac OS X, you can use Apple's Audio MIDI Setup (AMS) utility to identify which external MIDI devices are connected to your MIDI interface and to configure your MIDI studio for use with Pro Tools.

**Step 1.** Open the AMS utility by choosing MIDI Studio. . . from the Setup menu's MIDI sub-menu.

There are two pages, one for Audio Devices and one for MIDI devices – each with its own selection tab at the top of the window.

**Step 2.** Click the MIDI Devices tab.

The AMS utility scans your system for connected MIDI interfaces. When it finds your interface, this appears in the window with each of its ports numbered. Then you need to add devices corresponding to the actual devices that are connected to your MIDI interface.

**Step 3.** Click Add Device.

A new external device icon with the default MIDI keyboard image appears. You can drag this icon around the screen to place it wherever you find most convenient.

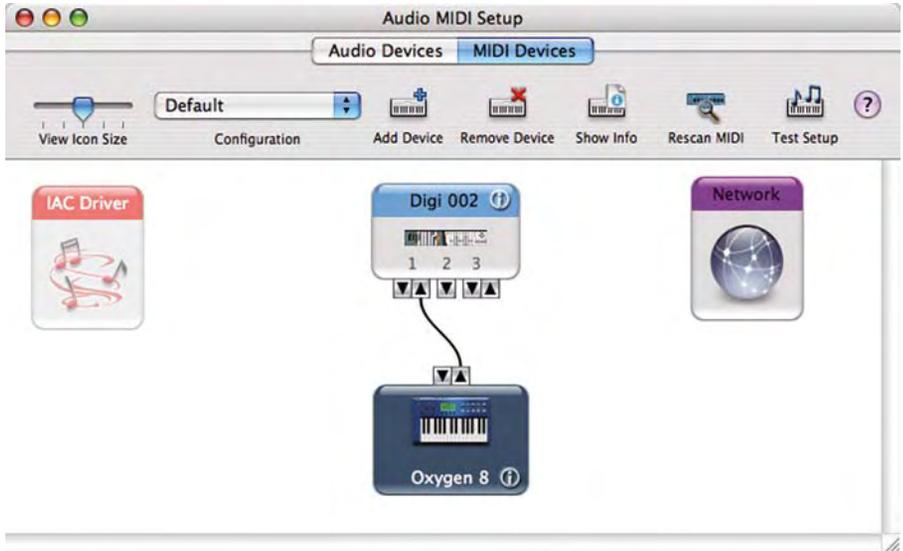
**Step 4.** Connect the MIDI device to the MIDI interface by clicking the arrow for the appropriate output port of the device and dragging a connection or 'cable' to the input arrow of the corresponding port of the MIDI interface.

In this example, the Oxygen 8 keyboard controller only transmits MIDI data to the Digi 002, it doesn't receive any data itself. So all you need to do is to drag a 'cable' from the outward pointing arrow on the Oxygen 8 icon to the inward pointing arrow on the Digi 002 icon to represent the connection.

**tip**



Don't forget that you need to connect a physical MIDI cable from the Oxygen 8 to the rear panel of the Digi 002 in this scenario. (It is also possible to connect the Oxygen 8 directly to the Mac via USB so that it acts as its own MIDI interface.)



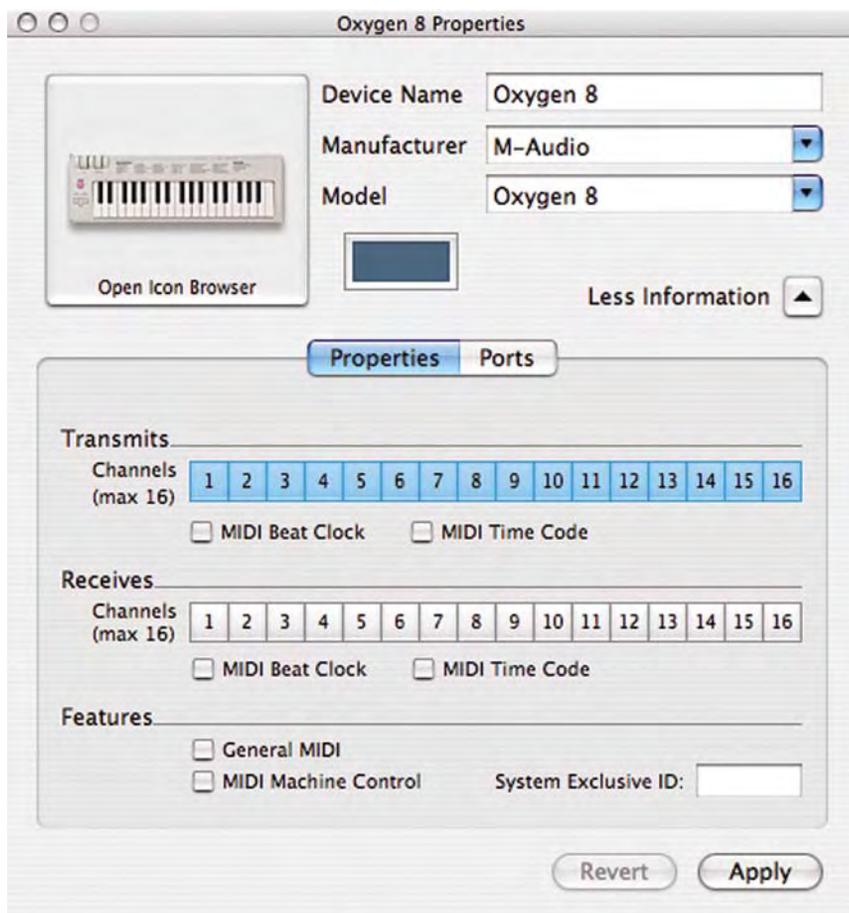
**Fig. 6.2** – MIDI Studio – A typical Setup using an Oxygen 8 keyboard with a Digi 002.

**Step 5.** Double-click on the icon of any device that you have inserted (such as the Oxygen 8 in this example).

A dialog window opens to let you set various parameters for the device. If the device is a popular model that has been available for some time, it will be listed in the Model popup menu in this dialog.

**Step 6.** Select the Manufacturer and Model of the connected device so that the parameters are automatically set correctly for you. Alternatively, if the device is not listed, just type whatever names you like for these and set the Transmits and Receives and other parameters manually.

**Step 7.** Using the Icon Browser, you can choose from a selection of icons to represent the MIDI device – such as a generic MIDI keyboard.



**Fig. 6.3** – MIDI Studio Properties dialog with Device Properties Tab revealed.

**Step 8.** Click the Apply button to apply your settings.

### MIDI Beat Clock. . .

You may have MIDI devices connected to your Pro Tools system that can use MIDI Beat Clock to synchronize with the tempo of the Pro Tools sequence. This is often the case with drum machines or with synthesizers that have arpeggiators. Delay units are another example where the timing of the delay repeats can be synchronized to the sequence tempo.

Many plug-in instruments and effects can be synchronized. Some of these plug-ins automatically configure to receive MIDI Beat Clock from Pro Tools. Plug-ins that do not self-configure are detected when inserted, then listed in the MIDI Beat Clock dialog where you can select the ones that you wish to synchronize manually.

As you will see from the screenshot, all the Reason modules are listed here because I inserted Reason before opening this dialog.



Fig. 6.4 – MIDI Beat Clock dialog.

### MIDI Input Filter. . .

The MIDI Input Filter dialog lets you filter out any MIDI data that you don't want to record.

For example, very few MIDI devices can respond to Polyphonic Aftertouch data, but you may have a keyboard such as the Yamaha DX1 that produces this data when you play its keyboard (I used to own one of these myself). There is no point in recording this kind of data unless you will be using it to play sounds (such as a few of those in the DX1) that can respond to it. So you should filter this out.

For similar reasons, and to help while troubleshooting your MIDI system, you may need to filter out other types of MIDI data, so Pro Tools provides lots of filter choices in its MIDI Input Filter dialog.

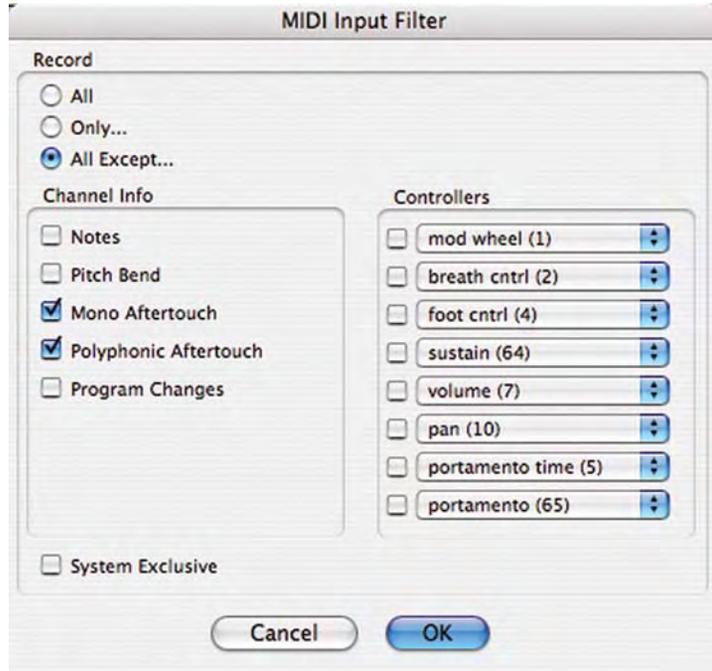


Fig. 6.5 – MIDI Input Filter dialog.

### MIDI Input Devices. . .

If you have several MIDI devices attached to your Pro Tools system, it can be useful to disable the MIDI input from any that you are not using to avoid recording unwanted MIDI data that may be ‘flying around’ your MIDI system.

Just imagine that you have two keyboards connected and, while you are recording using one, your cat jumps on the keys of the other! If you disable the input from this unused keyboard, you won’t get any unexpected surprises.



Fig. 6.6 – MIDI Input Devices Enable dialog.

## Getting Started

You should check the settings in the MIDI section of the Preferences window before you start recording. For example, some synthesizers and samplers set Middle C to correspond to the C designated as C3 while others set this to C4. Pro Tools allows you to choose whichever.

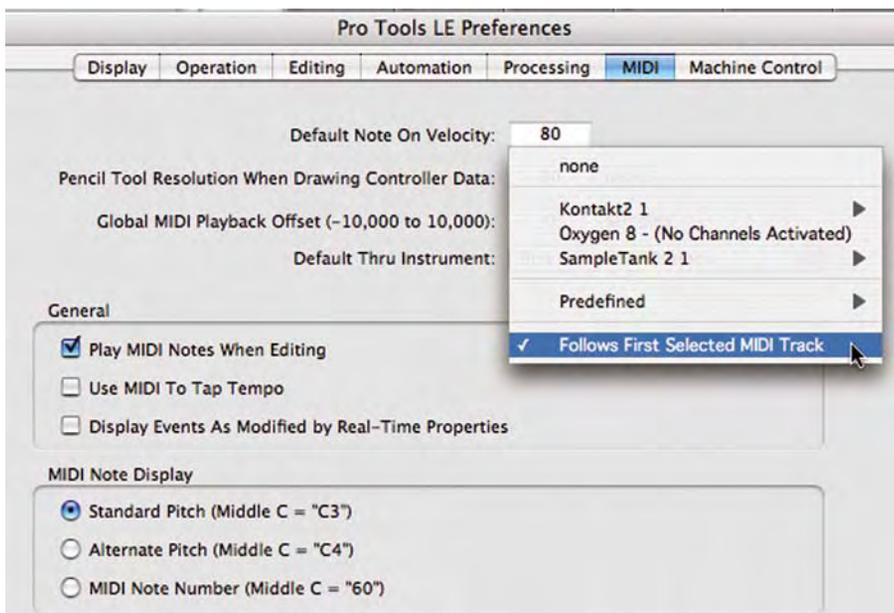


Fig. 6.7 – MIDI Preferences.

If you set the Default Thru Instrument to 'Follows First Selected MIDI Track', then all you need to do to play any MIDI instrument is to click on the MIDI or Instrument track name in the Mix or Edit window and play a connected MIDI keyboard or other device. MIDI Thru must be selected in the Options menu for this to work, and your MIDI device or virtual instrument must be set up so that it is successfully sending MIDI data to Pro Tools.

Take a look at Fig. 6.8 to see how the Mix window looks with a connected Oxygen 8 keyboard playing a SampleTank 2 virtual instrument inserted onto a Pro Tools LE Instrument track. As soon as you select (click to highlight) the Track Name, you can play the Oxygen 8 and it plays Sample Tank 2.

If the previous instrument, Instrument 1 in the screenshot, were selected, this would play instead of SampleTank, because Instrument 1 would then be the first selected MIDI track (i.e. the leftmost in the Mix window).



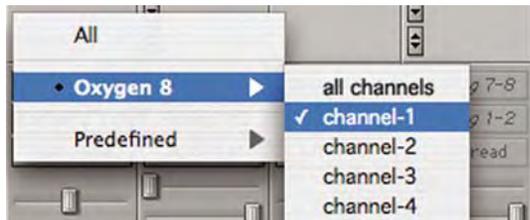
**Fig. 6.8** – Default Thru set to play the first selected MIDI track – in this case, SampleTank.

### Setting up to Record MIDI onto a track

**Step 1.** Choose ‘Input Devices’ from the MIDI sub-menu in the Setup menu and make sure that your input device is selected in the MIDI Input Enable window.

**Step 2.** Choose ‘New. . .’ from the Track menu and specify 1 MIDI Track, then click Create.

**Step 3.** In the Mix window, click the track’s MIDI Input Device/Channel Selector and assign a device and channel from the popup menu that you will use to play MIDI data into Pro Tools. If you have more than one device hooked up that you want to use to create MIDI input, an option is provided to enable ‘All’ connected MIDI devices for input.



**Fig. 6.9** – Using the MIDI Input Channel Selector.

**Step 4.** You can assign a default program change to the track by clicking the Program button in the Mix window to open the Patch Names window.



**Fig. 6.10** – Clicking the Program button on a MIDI track in the Mix Window.

## recording midi and using virtual instruments

In the Patch Names window, make the necessary selections for program and bank select, and then click 'Done'. The selected program and bank change messages will be sent when the track plays back.

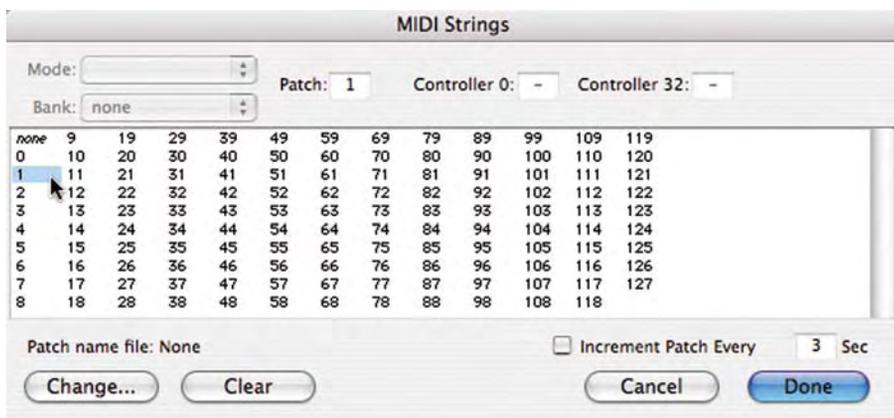


Fig. 6.11 – Patch Names window.

**Step 5.** In the Mix window, record-enable the MIDI track.

**Step 6.** Make sure that MIDI Thru is selected in the Options menu.

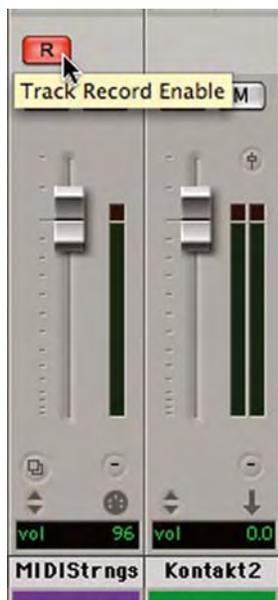


Fig. 6.12 – Record Enabling a MIDI track.

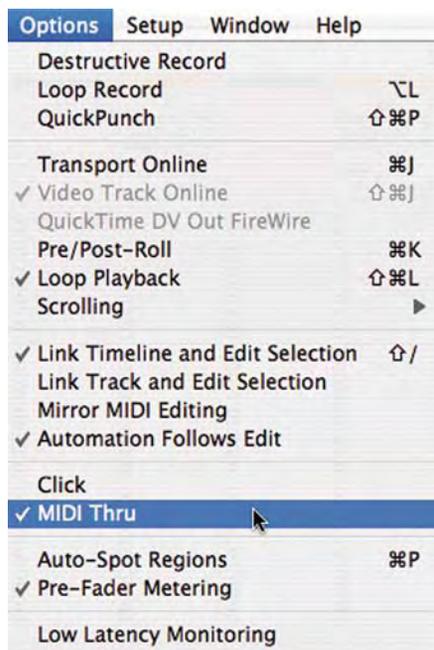


Fig. 6.13 – Selecting MIDI Thru in the Options Menu.



**Step 7.** Now when you play some notes on your MIDI controller, you should hear the sound of the MIDI instrument assigned to the track and you should see the track’s meter indicating MIDI activity.

Fig. 6.14 – Track Meter showing MIDI activity.

**note**



The above steps all apply when recording MIDI onto Instrument tracks. The main difference is that the MIDI Input and Output popup selectors are located at the top of the Instruments section rather than in the usual track I/O section.

**Recording onto a MIDI or Instrument track**

**Step 1.** Record-enable the track: make sure that the MIDI or Instrument track that you want to record onto is record-enabled and receiving MIDI. The track meters will indicate MIDI input when you play your MIDI device if everything is set up and working OK.

**Step 2.** In the Transport window, click Return To Zero to start recording from the beginning of the session – or simply hit the Return key on the computer’s keyboard.

**tip** ▶ Alternatively, you can start recording from wherever the cursor is located in the Edit window. Or, if you select a range of time in the Edit window, recording will start at the beginning of this selection and will automatically finish at the end of the selection.

**Step 3.** Click Record in the Transport window to enable record mode.

**Step 4.** Click Play in the Transport window or press the Spacebar to actually begin recording.

**tip** ▶ You can start recording by pressing and holding the Command key (Control key on the PC) then pressing the Spacebar on your computer keyboard – which is even faster than using Steps 3 and 4 above. And if you prefer to hit a single key, just press function key F12, or press 3 on the numeric keypad (when the Numeric Keypad Mode is set to Transport) instead.



**Fig. 6.15** – Transport Window with Record and Play buttons engaged.

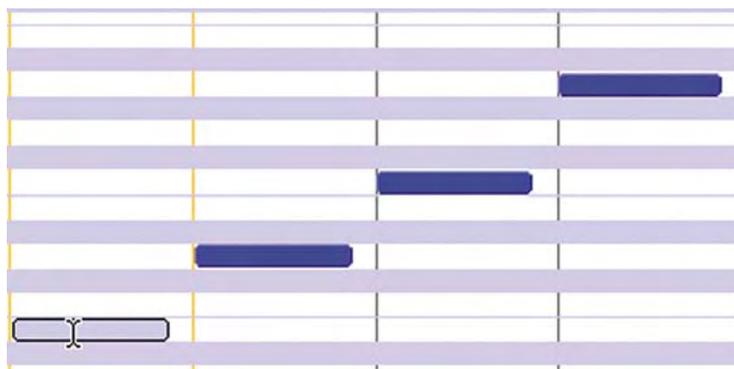
**note** ▶ Remember to select the Wait for Note icon if you want the first MIDI note that you play to start the recording. If you want to hear a metronome click while you record, make sure that the click is set up correctly and that the metronome icon is selected in the Transport window. And if you want a countoff, make sure that the Countoff icon is selected.

If you are using Wait for Note, the Play, Record, and Wait for Note buttons flash and recording will start when the first MIDI event is received.

If you are using Countoff, when you click Play, the Record and Play buttons will flash during the Countoff, then recording will begin.

**Step 5.** Play your MIDI instrument.

**Step 6.** When you have finished recording, click Stop in the Transport window, or press the Spacebar. The newly recorded MIDI data will appear as a MIDI region on the track in the Edit window and in the Regions List.

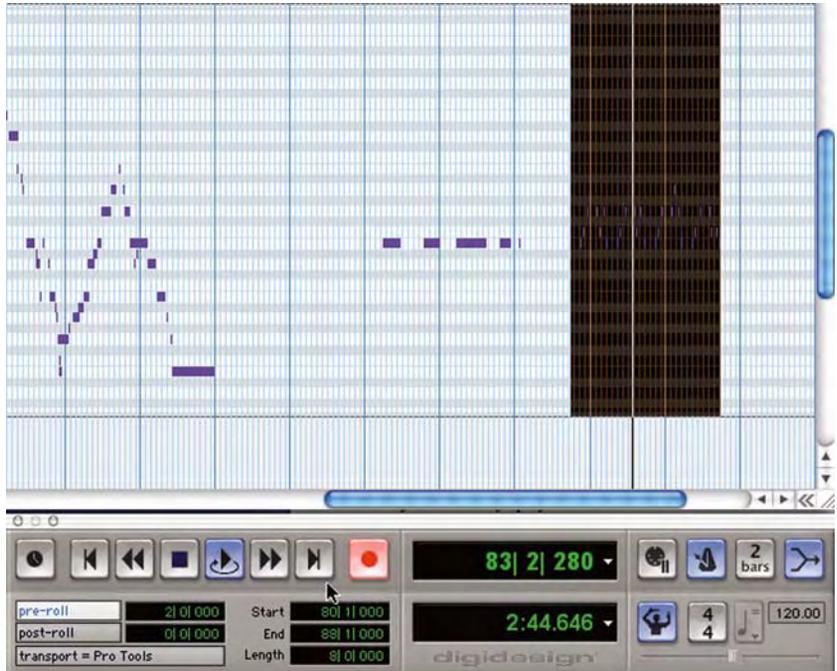


**Fig. 6.16** – MIDI Data in the Edit Window.

### Loop recording MIDI

There are two ways to loop record with MIDI – either using the normal non-destructive Record mode with Loop Playback and MIDI Merge enabled for drum-machine style recording, or using the special Loop Record mode to record multiple takes on each record pass – as when loop recording audio.

To set up drum-machine style loop recording, where each time around the loop you record extra beats until you have constructed the pattern you want, you need to enable the MIDI Merge function by clicking on the icon at the far right in the Transport. This looks a bit like a letter 'Y' on its side. Deselect 'QuickPunch', 'Loop Record', and 'Destructive Record' in the Operations menu, but select 'Loop Playback' so that the loop symbol appears around the 'Play' button in the Transport window. Select 'Link Edit and Timeline Selection' from the Operations menu, then make a selection in the Edit window to encompass the range that you want to loop around. If you want to hear the audio that plays immediately before the loop range as a cue, you will need to set a Pre-Roll time. So, for example, you would hear your session play back from, say, 2 bars before the loop range, then it would play around the loop until you hit 'Stop'. Each time through the loop you can add more notes until it sounds the way you want it to, without erasing any of the notes from previous passes through the loop – just like with a typical drum machine.



**Fig. 6.17** – Loop Recording: Drum-Machine style with Loop Playback and MIDI Merge enabled.

If you record MIDI using the Loop Record mode instead, new regions are created each time you record new notes during successive passes through the loop.

This time, select 'Loop Record' and 'Link Edit and Timeline Selection' from the Operations menu, deselect 'Loop Playback' and check that 'QuickPunch' and 'Destructive Record' are disabled. With Loop Record enabled, a loop symbol appears around the 'Record' button in the Transport window. Make a selection in the Edit window to encompass the range that you want to loop around and set a Pre-Roll time if you need this. Start recording and play your MIDI keyboard or other MIDI controller. Each time around the loop, a new MIDI region is recorded and placed into the Edit window, replacing the previous region. When you stop recording, the most recently recorded of these 'takes' is left in the track, and all the takes appear as consecutively numbered regions in the MIDI Regions list.

The easiest way to audition the various takes is to make sure that the 'take' currently residing in the track is selected, then Command-click (Control-click in Windows) on the selected region with the Selector tool enabled. A popup menu appears called the 'Takes List'. This contains all your recorded 'takes'. Choose whichever you like to replace the 'take' that currently appears in the track.

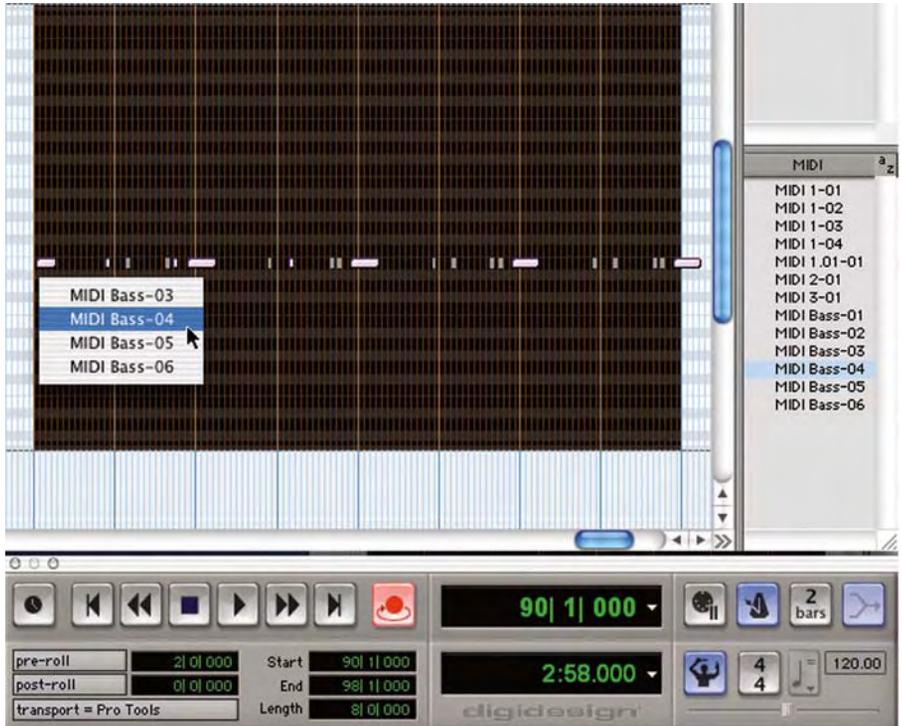


Fig. 6.18 – Auditioning ‘takes’ in Loop Record Mode.

### Playing back a MIDI or Instrument track

**Step 1.** If you have just finished recording onto the track, click the Record Enable button to take the track out of Record mode.

**Step 2.** In the Transport window, click Return To Zero to play back from the beginning of the track – or simply hit the Return key on the computer’s keyboard.

tip



Alternatively, you can play back from wherever the cursor is located in the Edit window. Or, if you select a range of time in the Edit window, playback will start at the beginning of this selection and will automatically finish at the end of the selection.

**Step 3.** Click Play in the Transport window to begin playback. The recorded MIDI data will play back through the track’s assigned instrument and MIDI channel and you should hear sound from the connected MIDI device. The popup MIDI Output selector underneath the MIDI Input selector lets you choose which of the available instrument and MIDI channels to assign to the track.

**note** ▶ For you to hear sound, the audio outputs from your hardware MIDI playback device (your synth, sampler, drum machine or whatever) need to be connected directly to an external playback system (such as an external mixer and monitors) or they need to be routed to a playback system via the Pro Tools mixer.

**tip** ▶ To monitor your hardware MIDI instrument's analogue outputs, you can route these to your Pro Tools audio interface and use Auxiliary Inputs to feed the audio into the Pro Tools mixer.

**note** ▶ Auxiliary Inputs cannot record audio to disk – they just monitor the input and feed this into the mix. To record audio to disk you can either use the Bounce To Disk command or you can route the audio from the Auxiliary input into an Audio track using an internal Pro Tools bus and record onto this.

### Assigning Multiple MIDI Output Assignments

MIDI programmers and synthesizer players often like to layer up synthesizer sounds – either before they are recorded or afterwards when working on the mix.

There are several ways to do this – such as within the synthesizer itself. Nevertheless, a convenient way can be to simply assign multiple destinations to a single MIDI track. So, for example, you might route a keyboard pad to a Reason module and to the SampleTank 2 plug-in at the same time, choosing suitable patches on each to create your layered sound.

This is easy to do in Pro Tools – just Control-click (Macintosh) or Start-click (Windows) on the track's MIDI Output Selector and use this popup selector to choose additional destinations from any of the devices and channels available on your system.

### Using Virtual Instruments

With previous versions of Pro Tools, you had to use both a MIDI track and an Auxiliary or Audio track to monitor the plug-in or external MIDI device. Pro Tools 7 LE and M-Powered sessions provide up to 32 dedicated Instrument Tracks that make it much easier for you to set up external MIDI synthesizers, samplers, drum machines and suchlike for use with Pro Tools. These Instrument Tracks are also intended to be used with virtual instrument software plug-ins and ReWire.