

In this chapter:

- **Non-destructive editing and edit playlists**
- **Edit modes and edit tools**
- **Comping tracks, fades, and crossfades**
- **Cutting, pasting, copying, and clearing**
- **Nudging notes and redrawing waveforms with the Pencil tool**

Now that you've got enough recording knowledge to get some demo material into Pro Tools, let's talk about how to edit that material. In my view, the most powerful features of Pro Tools lie within the software's extensive editing capabilities. Getting your head around all of the editing possibilities and techniques will take some time, but it's time well spent. You may need to refer back to this chapter as you progress through your projects because you'll probably be editing in every stage of the production process. But, before we get knee-deep in editing techniques, let's cover a few concepts that are crucial to your success in editing digital audio files with Pro Tools.

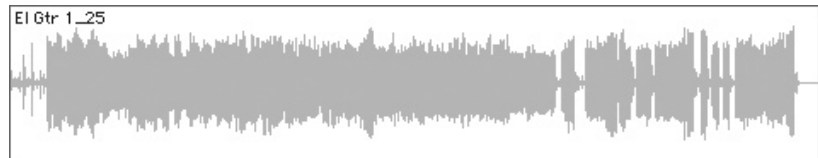
NON-DESTRUCTIVE EDITING AND EDIT PLAYLISTS

The reason that editing digital audio in Pro Tools is so powerful is that most editing functions in Pro Tools are non-destructive. What does that really mean? Non-destructive editing means that any cutting, pasting, trimming, separating, or clearing of audio data occurs virtually...the source audio files are not harmed in any way. Pro Tools only performs these editing functions on a map of the actual audio data, never touching the recorded source data. All edits that you perform simply help Pro Tools tell your hard drive where to look for data and how to arrange it for playback. Edit playlists are the mechanisms that do this.

As mentioned in chapter 2, an **edit playlist** is one or more regions arranged on an audio or MIDI track. The order and location of regions in a track define the track's edit playlist. The following examples will demonstrate the evolution of a track's edit playlist utilizing non-destructive editing.

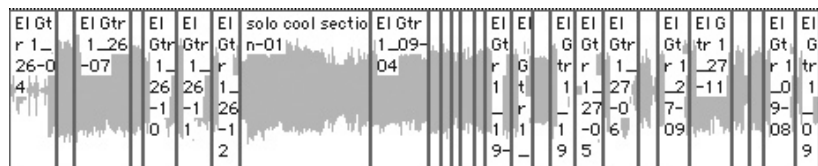
When you first record a track, the edit playlist usually consists of just one entire whole-file audio region, as in the guitar track in figure 4.1.

Fig. 4.1.
This is the source audio file for a guitar track.



Say you like some parts of the track and not others, plus you want to get a bit creative with the track. So, you cut out some parts and move other parts so the track sounds really cool and ultimately looks like figure 4.2.

Fig. 4.2.
If you were recording with analog tape and had to chop up the file like this, the edit would take forever!



Once you begin editing a track, many distinct regions are created and the edit playlist becomes more complex. Yet, with non-destructive editing, instead of creating brand new audio files for each small part of the track shown in figure 4.2, Pro Tools simply directs the hard drive to the place where each part of the audio track is located on the original source audio file, in the order determined by the edit playlist.

Having a large number of edits on your tracks requires the hard drive to do a lot of locating. (That's one reason that you need a fast hard

drive to have Pro Tools work properly.) For example, the edit playlist may first direct the hard drive to read the first two seconds of the source audio file. Then an edit occurs that tells the hard drive to read the last four seconds of audio on the source file. The next edit instructs the hard drive to read a different section, and so on. Thus, the original audio file is not actually cut apart and spliced together... it only appears that way on your computer screen. In reality, the source audio file is completely intact and untouched. Ah, the beauty of non-destructive hard disk digital audio editing.

EDIT MODES AND EDIT TOOLS

There are six edit tools you can employ for editing in Pro Tools: the Zoomer, Trimmer, Selector, Grabber, Scrubber, and Pencil tools.

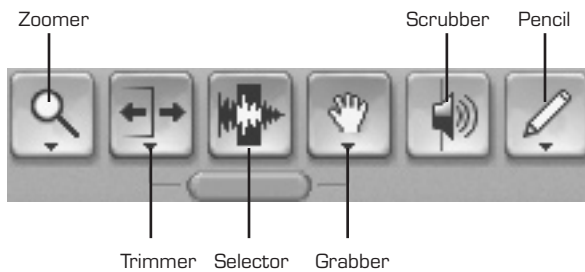


Fig. 4.3.

By pressing the bar below the Trimmer, Selector, and Grabber tool icons, you can select the Smart Tool. This edit tool lets you use the Selector, Grabber, and Trimmer, as well as create fades and crossfades, all at once. Depending on where you place the cursor within a region or MIDI note, the Smart Tool automatically switches to the appropriate tool for the job.

The Selector Tool

The Selector tool will probably be your most used edit tool. Its primary functions are to place the cursor for playback at a specific point on the track (by clicking in the track) and to select specific track material for editing (by clicking and dragging in the track).

Here are some handy Selector tool features: If you double-click with the Selector on a region, the entire region will become selected (highlighted). If you triple-click with the Selector on a track, the track's entire edit playlist will become selected (highlighted). If you place the cursor somewhere on a track's edit playlist, then hold down the Shift key and select another part of the playlist, all of the area between the two points on the playlist will become selected.

The Grabber Tool

The Grabber Tool comes in two flavors: Time Grabber and Separation Grabber, as seen in figure 4.4.

You'll probably use the Time Grabber most often.

Its primary function is to select or move entire regions, MIDI events, and Conductor track events. The Grabber can also be used to insert and edit automation breakpoints (see chapter 12). Read about creating and editing automation data in this chapter's Pro Tools Hands-On.



Fig. 4.4.

The Separation Grabber separates selected material into new regions. This tool makes it really easy to grab part of a track, cut it automatically, and move it somewhere else.



The Trimmer Tool

The Trimmer's main function is to shorten or expand a region. It can also be used to lengthen and shorten MIDI notes as well as scale automation and controller data up or down. Being a non-destructive tool, it does not actually modify the original audio or MIDI data.

For editing audio, the Trimmer is most often used to cut off the beginning or end of a region or to extend a region's start or end point by clicking and dragging the beginning or end of a region left or right to shorten or lengthen the region. To reverse the direction of the Trimmer, press Option (Mac) or Alt (Win).

The Trimmer tool can also be used in Time Trimmer mode. The Time Trimmer uses the Time Compression/Expansion AudioSuite plug-in to alter the length of an audio region and create a new audio file. Use this tool to time compress or expand a region so that it matches the length of another region, fits better on a tempo grid, or for a special effect. Simply drag the start or end point of a region with this tool to expand or compress the region. Choose the default settings for the TC/E plug-in from the pop-up list in the Processing Preferences page or create your own by opening the plug-in itself and saving your settings.

EDIT MODES — OH, BEHAVE!

The Edit modes (Shuffle, Slip, Spot, and Grid) determine how regions behave on a track's edit playlist when edited by the edit tools. They provide you with different ways to manipulate your recorded tracks with the editing tools.

Shuffle mode: This mode restricts the placement of regions so that they snap to each other and are placed end to end.

Spot mode: In this mode, you're prompted to enter a location for the moved or trimmed region.

Grid mode: This mode constrains edits and selections to the nearest spaced boundary.

Slip mode: In this mode, regions can be moved and trimmed freely, and placed so that regions overlap or so there is space between regions in the destination track.

For example, the Trimmer tool, when used in conjunction with each of the edit modes, can be a very powerful editing tool. Often, you'll want to use the Trimmer tool in Slip mode. When in Slip mode, the regions are simply trimmed wherever you see them on the computer screen. However, when using Shuffle mode, adjacent regions are slid as necessary to make room for the edited region. If using Grid mode, the trimmed start/end times snap to the nearest grid boundary. And, if using Spot mode, the Spot dialog opens, where you can enter the new location for the trimmed region's start or end point. Try out all of the edit tools in each edit mode to see the unique editing features of every combination.

The Scrubber Tool

The purpose of the Scrubber in Pro Tools is to emulate the “scrubbing” technique used to edit analog tape. By scrubbing over a digital audio edit point, you can listen in closely to find the exact edit point, which may not be obvious just by looking at the waveform.

To scrub an audio track, select the Scrubber and drag within a track. To scrub two adjacent audio tracks at once, simply drag along the line between the two tracks. Zoom in on a track to scrub over a small area, or press Command (Mac) or Control (Win) to scrub at a finer resolution without zooming.

The direction, distance, and speed at which you drag will determine the sound of the scrubbed audio. Normal scrubbing allows you to scrub at regular playback speed or slower. If you want to scrub at speeds faster than regular speed, press Option (Mac) or Alt (Win) while dragging. This is called Scrub/Shuttle mode and allows for scrubbing at several times the regular speed. This feature is useful for scrolling through long tracks to find a specific part of the track.

The Pencil Tool

When editing audio, the Pencil tool has one function: to redraw waveforms. Often, this is done to repair waveforms, such as to eliminate a pop or click on the track. However, the Pencil has many other useful functions, including inserting MIDI notes, editing velocities for a range of MIDI notes, and drawing automation and controller events. And by pressing Option (Mac) or Alt (Win), the Pencil tool turns into an Eraser, which can be used to delete MIDI notes, or to program changes and sysex events. (Editing MIDI data is covered in chapter 5.)

As you may have already noticed, the Pencil tool comes in five flavors: Free Hand, Line, Triangle, Square, and Random. These represent the different shapes you can draw with the Pencil. I use the free hand and line shapes most often when editing audio. The other shapes are more useful when drawing or editing automation and MIDI data.

The Zoomer Tool

Primarily, the Zoomer tool helps you to enlarge a track (as you would with a magnifying glass or microscope) and find details within its waveforms. It’s good for exposing problem areas in a track or locating good edit points.

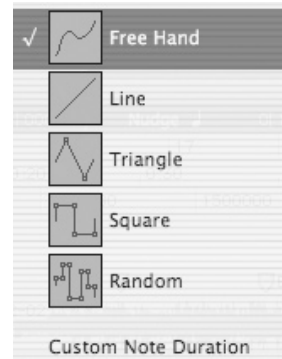
To zoom in one level and center the Edit window at the zoom point, click once on a region with the Zoomer tool. To zoom back out to the previous level, Option + click (Mac) or Alt + click (Win) with the Zoomer; in this case, a negative sign “-” appears inside the Zoomer tool instead of the usual plus sign “+”. Often, a more useful way to zoom is to click and drag on the specific part of a track that you want to magnify horizontally. In this instance, the zoomed area fills the entire edit window.



Scrubbing is a technique originally used in analog tape editing, where engineers would roll the tape back and forth over the tape machine’s playhead at slow speeds with their hands to find a particular location on the tape . . . usually the location for a splice.

Fig. 4.5.

Click on the Pencil tool to choose between the five Pencil drawing shapes.



The Pencil is a destructive tool. It actually changes the original audio file permanently! Although pencil edits can be undone, be careful how you wield your pencil . . . it can be sharper than a sword when used on audio files.

Fig. 4.6.

The Single Zoom tool is identified with an arrow to the right of the Zoomer tool icon. Normal Zoom mode doesn't have the arrow.



In addition to the normal Zoomer tool, you can select the Single Zoom tool that returns you to the previously selected tool after a zoom has been performed. For example, when using the Selector you can click on the Single Zoom Tool mode and, once the Zoom operation has been performed, Pro Tools automatically switches back to the Selector.

KEYBOARD SHORTCUTS FOR THE EDITING TOOLS

You can use the function keys to switch between the edit tools. Simply press:

- F5 for the Zoomer (keep pressing F5 to toggle between the two Zoomer tools)
- F6 for the Trimmer (keep pressing F6 to toggle between the two Zoomer tools)
- F7 for the Selector
- F8 for the Grabber (keep pressing F8 to toggle between the two Grabber tools)
- F9 for the Scrubber
- F10 for the Pencil (keep pressing F10 to toggle through the five Pencil shapes)
- F6 + F7 for the Smart Tool

A PDF document listing all of the keyboard shortcuts was installed on your computer with Pro Tools. Print out this document (appropriately named "Keyboard Shortcuts.pdf") and become familiar with the shortcuts . . . they will improve your Pro Tools efficiency immensely.

Fig. 4.7.

Tab to Transients is particularly useful for editing drums or other percussive instruments, where the transients are usually indicative of the beginning of a beat, measure, or phrase.



Tab to Transients and Link Selections

In the same area of the Edit window as the Edit modes, there are two other useful buttons. Tab to Transients allows you to use the Tab key to navigate from one **transient** part of an audio waveform to the next.

The other useful button found to the right of the Tab to Transient button in figure 4.7 is the Link Selections button. This button links Edit and Timeline selections, allowing you to set play and record ranges by selecting in the track's playlist. When unlinked (the button is unhighlighted), you can make Edit selections without disturbing the Timeline selection. What that means is that you can select a portion of the session to play in the Timeline (conductor ruler), but edit a different section of the session. I usually just keep the Link Selections button highlighted, but occasionally it's useful to unlink the Edit and Timeline selections. For instance, when unlinked, you can loop a MIDI drum beat and edit a few of the notes within the loop while it's playing back without interrupting the playback.

Track Views

Pro Tools offers many options for viewing your regions and tracks. As seen in figure 4.8, the Track View Selector, found in the Edit window below each track's name, allows you to choose which data is displayed

in the track’s playlist. Whatever data you choose to display is the data that you can edit on-screen.

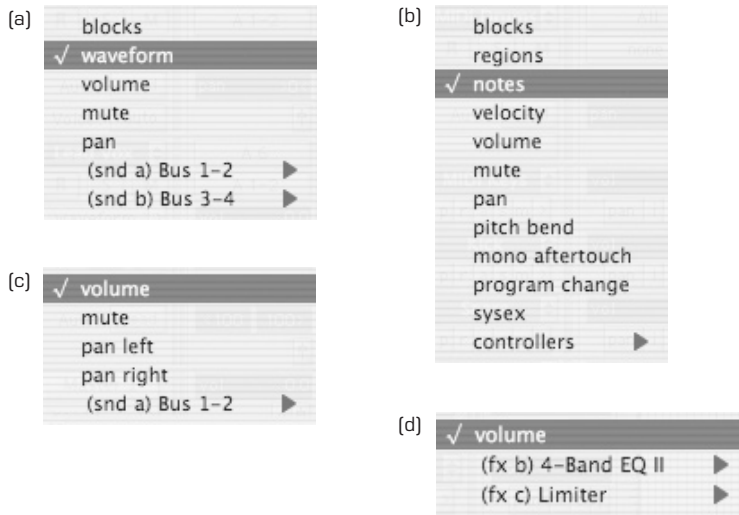


Fig. 4.8. The Track View Selector for (a) an Audio Track, (b) a MIDI Track, (c) an Aux Track, (d) a Master Fader Track.

Audio and MIDI tracks have “Master views.” That is, when a track is viewed in its master format, any edits performed on that track apply to all data on that track. For example, when an audio track is set to Waveform view, deleting part of the waveform data will also delete automation data on that section of the audio track. Here are the Master Views for each type of track.

Master Views

| Audio | MIDI | Aux/Master fader |
|----------|---------|------------------|
| Waveform | Regions | <i>none</i> |
| Blocks | Blocks | |
| | Notes | |

For most of your audio and automation editing, you’ll probably use the Waveform and Volume views. To easily toggle back and forth between these two views, click in a track that you want to toggle (Shift-click for additional tracks), and press Ctrl + - (Mac) or Start + - (Win) on the alpha keyboard.

Creating New Regions

When editing audio, you will often need to select a portion of a region and delete it, move it somewhere else, or make multiple copies of it. For example, you may want to make multiple copies of a bass line to create a bass loop that repeats during a song’s verse. In Pro Tools, there are several ways to select a portion of audio and create a new region, including capturing a new region, separating a region, or using the Separation Grabber tool.

I usually create a new region by selecting a portion of an existing region with the Selector tool and choosing Separate Region from the Edit menu (or typing $\text{⌘} + E$ [Mac] and $\text{Ctrl} + E$ [Win]). This command creates new regions by separating and renaming the affected regions on the playlist. Additionally, if you've placed the cursor somewhere on a region but haven't selected any part of it, the Separate Region command will split the region right where the cursor is. It is beneficial to automatically separate a region like this if you know you want to cut out and/or move the region, because it makes the region easier to select, grab, trim, move, or delete. I also recommend learning how to use the Separation Grabber to perform region separations.



The key commands for copying, cutting, pasting, and clearing in Pro Tools are the standard commands in most other software programs.

| | Mac | Win |
|-------|----------------|-------------------|
| Copy | $\text{⌘} + C$ | $\text{Ctrl} + C$ |
| Cut | $\text{⌘} + X$ | $\text{Ctrl} + X$ |
| Paste | $\text{⌘} + V$ | $\text{Ctrl} + V$ |
| Clear | $\text{⌘} = B$ | $\text{Ctrl} + B$ |

Cut, Copy, Paste, and Clear

If you've used any piece of software (like a word processor or spreadsheet) other than Pro Tools, you probably have cut, pasted, copied, and cleared data before. Those actions are no different in Pro Tools, except that you are cutting, pasting, copying, and clearing audio or MIDI data instead of text or graphics. These commands are very useful for editing and can be used to edit any type of track material. The Track View determines what type of track material (e.g., volume data) is cut or copied from a track. Remember that you'll cut or copy all data that accompanies a track in its Master View, as mentioned previously.

As with most editing functions, the current edit mode determines how track material is affected by an editing action.

DIGITAL EDITING TECHNIQUES

When cutting and splicing analog tape, you rely solely on your ears to find musical edit points. There are often hundreds of pieces of tape to keep track of and all razor-cut edits are destructive. It is an exacting and exhaustive process that yielded good results for several decades. However, it's fast becoming a dead art since digital editing has forever changed the way we think about production.

One of the best features of editing digital audio (in my opinion) is that you actually see the waveform you're trying to edit; you're able to combine your senses (hearing and sight) to get the job done. Obviously, music is heard, not seen, so we must continue to rely heavily on our ears to make sure anything we do sounds good. However, for visually oriented people like me, being able to see what I'm listening to helps me find accurate edit points much faster. In fact, most people rely on sight as their primary sense . . . even musicians.

With its variety of functions, there's really little you can't do in Pro Tools when editing audio or MIDI. In fact, because Pro Tools offers so many ways to edit your music, every Pro Tools user seems to utilize different techniques and functions to get their work done — an entire

book could be written on Pro Tools editing techniques alone. That said, I'm going to cover just a few of the functions I use regularly. Additional information on all of the editing features of Pro Tools can be found in the *Pro Tools Reference Guide* and on the Digidesign Web site. I also recommend getting together with other Pro Tools users and exchanging tips – you'll be surprised how much you can learn. (Visit Digidesign's User Conference area or the DigiZine on their site for access to a knowledgeable and vibrant community of Digi users, from newbies to top pros.)

In its most basic forms, Pro Tools editing is cutting, pasting, copying, and clearing regions and files; being familiar with these commands is imperative. Editing also involves dexterity in creating regions, capturing regions, locking regions, placing regions in tracks, and sliding regions so you can manipulate them comfortably.

Usually I learn new editing techniques when forced to do so. For example, I needed to figure out the best and fastest way to comp a vocal part together. So I paged through the reference guide for information, asked some friends, and sussed out a few different techniques. After trying several methods, I chose to comp vocals using playlists because it worked best for my recording and editing needs. This technique might not be the technique that someone else would use first, but it works well for me. The moral: Don't feel like you have to be a total Pro Tools expert to edit like a pro. You can learn as you go!

Comping Using Playlists

"Comping" is the process of combining all the best parts from multiple takes into one master take. As I mentioned in chapter 2, I like to record multiple takes of tracks, particularly overdubs such as vocals or guitar solos, on new playlists on the same track. That way I can compare the parts I like from each and easily edit them to create a master take. To me, copying and pasting among takes on separate playlists is the fastest way to comp together the finished product because (a) it's not necessary to create or separate any regions (Pro Tools automatically creates them) and (b) the same selected audio or MIDI area stays selected when changing between playlists, making seamless comps a breeze.

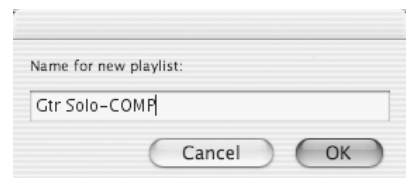
To create a playlist for a new take, choose New from the Playlist selector and name the file accordingly (as in figure 4.9). To copy and paste between takes, select and copy the audio or MIDI area that you want from one playlist, then choose the "target" (master take) playlist using the Playlist selector and perform a paste – Pro Tools automatically creates a new region for the pasted part. If you need to create a crossfade between regions on a newly comped track to smooth out the sonic transition between two regions, choose Fades then Create Fades from the Edit menu (more on fades and crossfades in the section that follows).



Pro Tools has multiple levels of undo so you can step back through up to 16 of your previous edits.

Fig. 4.9.

Click on the arrow next to a track name to select or create a new playlist, then name the playlist.

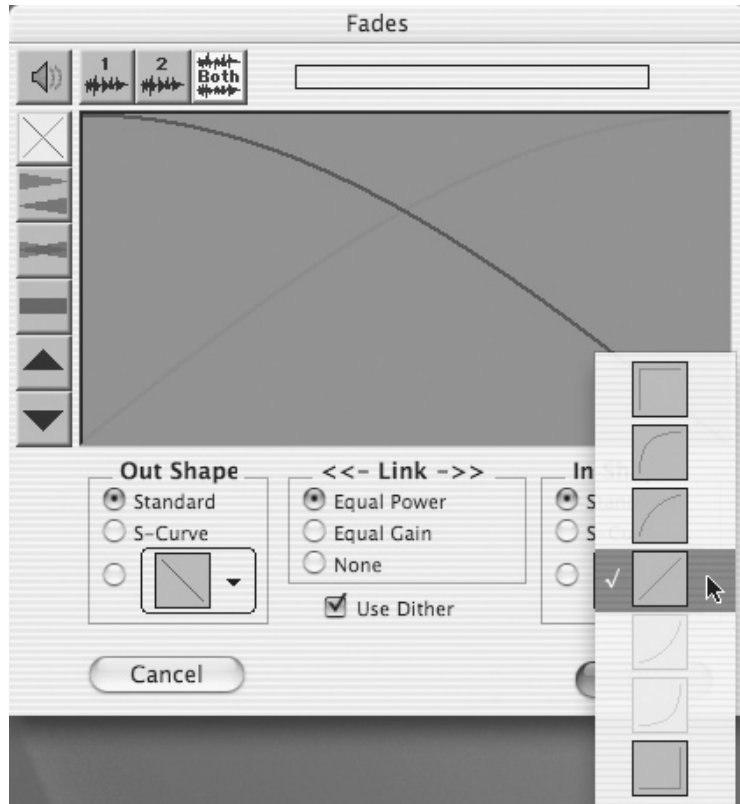


FADES AND CROSSFADES

A huge part of making your edits sound natural is your ability to use crossfades. Crossfading is the process of fading two regions of audio together to prevent pops, clicks, or sudden changes in sound. Crossfades have many applications, from smoothing transitions between regions to creating special audio effects.

Pro Tools makes it easy to create your own fades and crossfades. For those who've edited analog tape, you know you're basically limited to choosing one of a few different angles of tape cuts to create crossfades. But with Pro Tools you can actually draw your own crossfade curves and listen to how they sound, or choose from Equal Power, Equal Gain, and any of a number of different curves as seen in figure 4.10. You can even apply dither to fades.

Fig. 4.10.
The Fades window takes the pain out of creating seamless transitions between regions.



Note: When you're working with 24-bit files I recommend using dither on crossfades if levels are low, and that you always use dither on fade-ins and fade-outs. (Dither is fully explained in chapter 13.)

THE EASY WAYS TO FADE

As with most other major functions in Pro Tools, there are keyboard shortcuts that make creating fades easier. To access the Fades dialog box, simply type **⌘ + F** (Mac) or **Ctrl + F** (Win). And even easier . . . to apply a crossfade to a selection without accessing Fades window at all, do this:

⌘ + Ctrl + F (Mac) This uses the default fade shape defined in the Preferences.
Ctrl + Start + F (Win) This uses the last fade shape that you selected.

And remember, you can also use the Smart Tool to create fades and crossfades. First, place the Smart tool near the beginning or end of a region. Then, to create a fade, mouse to the upper half of the track and the fade icon will appear. Click and drag where you want the fade to begin and end. Similarly, if you want to create a crossfade, mouse to the lower half of the region and the crossfade icon will appear. Click and drag where you want the crossfade to begin and end.

Nudging Notes

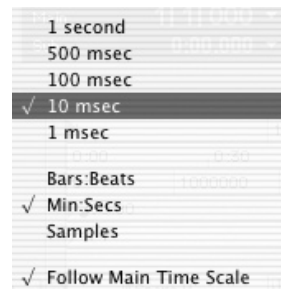
Sometimes you'll record a great take but one or two notes are just a bit out of time. A good example of this is when a bass player hits a downbeat slightly ahead of when the drummer hits the kick drum. (I'm not implying that bass players tend to rush; they just get overly excited sometimes.) To fix the syncopation, you can nudge the bass note slightly later in time to match the kick downbeat.

To nudge a note or several notes, first find the note(s) in the waveform in the Edit window. Zoom in close enough so you can see where the note begins and ends. Select the note(s) and create a new region by choosing **Separate Region** from the Edit menu. Now select the nudge value from the Nudge dropdown menu in the upper-right corner of the Edit window. You can choose from **Bars:Beats**, **Min:Secs**, or **Samples**. Pro Tools offers a list of values for each of these, but you can type in your own if you want. I recommend trying 10ms as a starting point and adjusting from there. Press the plus key (+) on the numeric keypad to move your selection forward by the nudge value or the minus key (-) to move the selection back. You may have to press either key several times to align the bass note with the kick drum.

And if you want to get really fancy . . . If you nudge while pressing **Control** (Mac) or the **Start** key (Win), you can actually nudge the contents of a region without changing the region's start and end points. This only works if there's audio or MIDI material outside the region's start and end points. (It would work in our bass/kick drum example and could possibly yield slightly better results.) You should also note that the Nudge command works the same regardless of the Edit mode you're using at the time.

Fig. 4.11.

Use the Nudge dropdown menu to easily move selected regions without having to mess with ultra-accurate mousing.



Be careful using the nudge editing technique though. You can go crazy trying to align every note, killing way too much time and taking away from the real performance – the “vibe” – of the part. If the part needs that much fixing, re-record it!

Repairing Waveforms with the Pencil Tool

As mentioned previously, the Pencil tool allows you to redraw waveforms and make precise edits. This is particularly useful for repairing vocal plosives and pops or clicks that might randomly occur. Be careful when using this tool though; redrawing a waveform with the Pencil permanently alters the audio file on your hard drive once it's saved (i.e., destructive editing), so it's a good idea to make a backup of the original file before editing.

To repair a waveform by redrawing it you must view the waveform at the sample level. Zoom in all the way so the waveform appears as a continuous thin line. With the Free Hand Pencil tool, redraw the waveform by dragging the pencil over it. Try to keep the same basic form of the sound wave when redrawing or you might create an even nastier sound than the pop or click you were trying to fix. At the same time, you can create some wacky effects with pencil edits. Experiment with your waveform drawing technique . . . remember, you can always undo your edits (in this case, just make sure you're *very* happy or have a backup before you save).

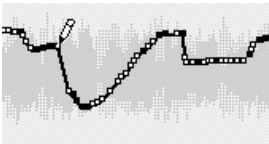
Editing Automation Data with the Pencil Tool

I use the Pencil tool most often to edit automation data – it's so easy to draw volume fades and panning moves. I've found it very beneficial to create automation data first using the Mix window faders in Auto Write and Auto Touch modes, then fine tuning with the Pencil tool. (Automation is covered in chapter 12.) See the Pro Tools Hands-On section in this chapter for more info on creating and editing automation data.

This is particularly helpful when riding vocal levels. After you've recorded a good automation pass using the mouse or MIDI controller on a fader, go to the Edit window and select Volume from the Track View menu (as seen in figure 4.12). Use the Pencil tool to redraw any volume levels to make the track sound its best.

Fig. 4.12

Volume automation data can be adjusted in fine increments using the Pencil tool.



SEVERAL USEFUL KEY COMMANDS FOR EDITING

Key commands make your life a lot easier when using Pro Tools. Learn as many as you can and use them to improve your efficiency. More editing techniques and commands I find useful are described in chapters 9, 11, and 12, but here are a few I use often:

- You can slide a copy of a region to another location or track by pressing Option (Mac) or Alt (Win) while dragging.

- To retain a region's horizontal location when dragging to another track, press Control (Mac) or right-click (Win) while dragging.
- To zoom in/out horizontally, press \mathbb{C} +] or [(Mac) or Ctrl +] or [(Win).
- To zoom in/out vertically, press \mathbb{C} + Option +] or [(Mac), Ctrl + Alt +] or [(Win audio), or Ctrl + Shift +] or [(Win MIDI).

Locking Regions

Once you've made some edits that you're happy with and don't want to unintentionally nudge or move the region, it's a good idea to "lock" the region in place. Locking a region or a group of regions ensures the region(s) cannot be moved, but allows you to still perform operations such as recording and automation editing on the region(s).

To lock a region, select the region(s) with the Grabber tool and choose Lock/Unlock Region from the Edit menu. A small lock appears in the region, indicating that it has been locked, as in figure 4.13.

It's a smart move to lock your regions once you've done some editing to a song. And, I highly recommend locking regions once you start mixing your song. You don't want to spend time realigning regions that you moved by accident while mixing.

Now let's move on to recording and editing MIDI tracks... ||

Fig. 4.13.

The keyboard shortcut for locking (or unlocking) a region is \mathbb{C} + L (Mac) and Ctrl + L (Win).

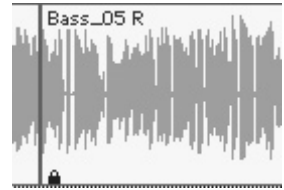


Fig. 4.14.

If you try to perform edits that would move the locked region, Pro Tools alerts you with this window.



PRO TOOLS HANDS-ON

Experiment with Edit Modes and Tools

Experiment with each edit mode and edit tool on something you've already recorded, or choose a track from the CD-ROM sessions. Create new regions and move them around. Get familiar with the Smart tool by mousing over different parts of a region to see the many functionalities of the tool. Switch between edit modes and tools using the function keys. Also try dragging a region from the Audio Regions List and observe how the region is placed within a track's playlist, depending on the chosen edit mode.



Create Fades and Crossfades

Since crossfades are created by fading between overlapping audio material, a crossfade cannot be performed on regions that do not contain audio material beyond their region boundaries. Crossfades are written to your hard drive and stored in a folder named "Fade Files" within your session folder. When you play back your track,

Pro Tools reads and plays back the crossfade file from your hard drive.

The Link parameter in the Fades window (figure 4.10) enables you to choose the fade-out and fade-in curves used in a crossfade. Choose Equal Power when creating a crossfade between two completely different types of musical material. Choose Equal Gain when creating a crossfade between two identical types of musical material (e.g., on repeated loops).

You can also choose None when you want to edit the fade-out and fade-in separately. Press Ctrl (Win) or Command (Mac) while dragging to edit the fade-out section of a crossfade. Press Alt (Win) or Option (Mac) while dragging to edit the fade-in.

Try it. Create a crossfade between two regions. Listen to the difference between Equal Power and Equal Gain crossfades. Then, choose None in the Link section of the Fades window and try editing both the fade-out and fade-in sections of a crossfade. Finally, experiment with all of the other ways to create fades and crossfades, including the Smart Tool and keyboard shortcuts.

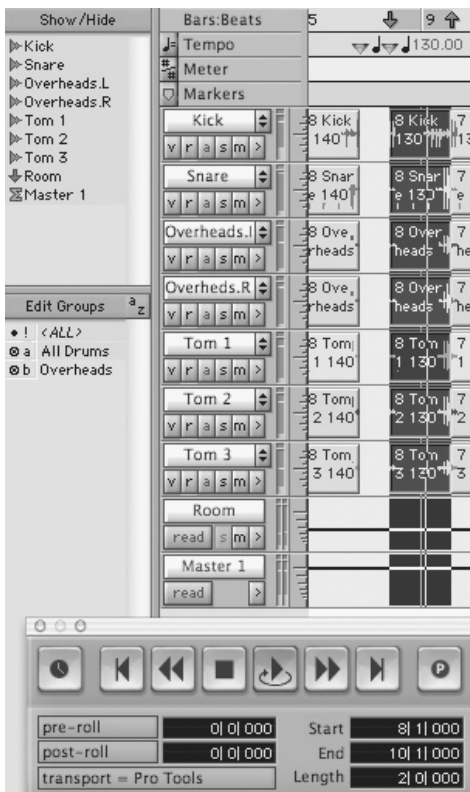
Create a Drum Loop

Why is creating a loop considered practice for editing audio? Because many of the concepts, techniques, and tools required to edit audio are used in creating a loop. Create a drum loop using the Naked Drums demo session included on the book's CD.

First, find and select a section of music that you'd like to loop, such as one measure of a drum beat, using Loop Playback. (Choose Loop Playback from the Operations menu.) Adjust the selection length so that the loop doesn't lose the beat. You may find using Tab to Transients helpful when selecting the material for your loop.

The next step is to separate the regions in each track so you can manipulate them using the edit modes and tools. Remember that you can separate a region by pressing \mathbb{C} + E (Mac) or Ctrl + E (Win). To separate the regions on all tracks at once, highlight the section on all the tracks, then separate them. To select (highlight) multiple tracks at once, press the Shift key while selecting each track. An even easier way is to activate the "! <All>" Edit Group, as seen in the figure at left. Then, when you highlight one part of one track, all the tracks will be highlighted in the same places.

Move the loop to the end of the session, make several copies of the loop material, and paste them together. An easy way to make copies of a loop is to select all the loop material with the Grabber, then in Shuffle mode, select Repeat from the Edit menu [or press Option + R



(Mac) or Alt + R (Win)]. A dialog box will open that looks like the figure at right.

Type “3” as the number of repeats and click OK. This will paste three copies of the selected material next to the original material. As you learned earlier, Shuffle mode places regions right next to other regions so you don’t even have to lift a finger to make the regions tight. You may need to crossfade each loop together to ensure there are no pops or other sonic inconsistencies between the end of the loop and the start of the next loop.

To quickly create a crossfade on all tracks at once:

1. Activate the “! <All>” Edit Group.
2. Position the Smart tool at the boundary between two regions.
3. Move the Smart tool to the lower half of a region to activate the crossfade tool.
4. Click and drag to create a crossfade on each track.



Use Memory Locations and Markers for Editing Audio

You can use markers to expedite moving large amounts of audio around in a Pro Tools session. For example, if you’ve got markers set up at the exact beginning and ending of a verse, you can make the verse twice as long by copying and pasting it in a matter of seconds. (Try *that* with analog tape!)

To do this, click on the beginning marker (in the Marker Ruler), press and hold Shift, click on the end marker, and copy the material. Click on the marker where you want to insert the additional verse and paste the copied verse (while in Shuffle mode). The audio files will line up snug to the previous verse and the following section of the song.

Try it. In any of the song sessions on the CD, create markers at the start of each section (e.g., verse, chorus, etc.). Use Loop Playback to make sure the markers are set up at the exact start and end points of the song sections so that they will flow together when combined. Cut and paste together a completely different arrangement of the song using the markers you created.

Edit Spoken Word

One of the most important and difficult editing tasks that you’ll have to perform is editing speech and vocals. When editing speech (for a voiceover, a monologue, a rap, etc.), it’s customary to edit the words so that there is no stuttering, stammering, hesitation, or mistakes (unless, of course, those effects are desired). Many times it’s also beneficial to eliminate unnecessary pauses and open spaces

between words and sentences. This will increase the pace of the performance and is often done when there are a lot of breathing pauses, or when you want to intensify the impact of the delivery (e.g., a fast-talking radio DJ).

When editing speech or vocals, it's always a good idea to have the script, text, or lyrics as a printed guide for making notes about where to place your edits. This also helps if you want to remove parts of the text while keeping the overall meaning.

A tricky yet interesting part of editing speech or vocals is figuring out the best edit points. Because language possesses such complex sounds and sound patterns, figuring out where words start and end can be challenging. There are many components of words that you need to be aware of when editing. They each have distinctive sounds and often sound totally different from each other, once you listen to them more closely and analyze their waveforms. As you get better at identifying waveforms, you will begin to hear – and also see – the differences between consonants and vowels, and you will learn the best ways to work with the unique characteristics of specific consonant and vowel sounds.

Try it. On the CD, there is a session called Voiceover. Copy it to your audio hard drive and open it. This session contains one audio file of voiceover material for you to listen to and edit. The audio is of me reading the first paragraph of chapter 4.

First, listen to the track at full speed to get a feel for it. Then, listen to the track at half-speed by pressing Shift-Spacebar. Try the Scrubber tool on some sections of the track. Listen to and look at the differences between consonants and vowels. Spend a minute or two scrubbing over different consonants and vowels to get a feel for where each word starts and finishes. Listen closely for the **sibilant** sounds of the letter “s” and also to the larger spaces left for commas and periods, as well as the smaller spaces between words.

There are some mistakes in the reading. This was done purposely. Edit out the mistakes and smooth out the timing of the performance so that you create a near-perfect reading. Then, shorten the open spaces between some of the words and sentences, thereby increasing the pace of the reading. Finally, check out my quick edit of the voiceover track on the track's second playlist and compare it to your edit.

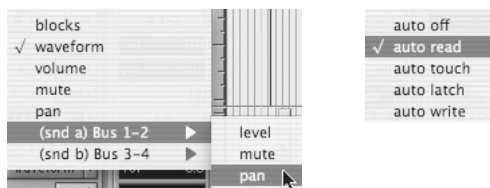
Nudging the Groove

Use nudging to edit the offbeat guitar track in the Basic Effects Send session (on the CD) so that it lines up perfectly with the drum beats. Try this for four measures (or more). Listen to the differences between the original and your nudged version. Do your edits make the groove tighter or more sterile?

Record and Edit Automation Data

You can use all of the audio editing tools and techniques that you've learned so far to edit automation data. Used mainly in mixing, automation is data that automatically controls the parameters of a track (such as volume level or panning), the parameters of a plug-in (such as the ratio on a compressor or the wet/dry mix of a reverb), or any other automatable parameters within a Pro Tools session.

On audio tracks, you can control volume, pan, mute, send volume, send pan, send mute, and plug-in parameters. You can look at any automation data on a track by choosing it from the Track View Selector, as in the figure below (left).



However, before editing automation, you've got to record it. The basic steps for recording automation are:

1. Put the appropriate track(s) in an automation writing mode (Write, Touch, or Latch mode) using the Automation Mode Selector, as in the figure above (right).
2. Press play to begin automation recording and adjust the controls (volume, pan, mutes, etc.) as needed. Pro Tools remembers all your moves.

You can also create automation data by drawing it with the pencil tool. Select the automation type you want to draw on a track from the Track View Selector, choose the Pencil tool and appropriate drawing shape, and start drawing. Check out the QuickTime movie "drawingautomation" on the CD to see this process firsthand. We'll get deeper into recording automation, including plug-in automation, in chapter 12.

Once automation has been recorded, you can edit it in three different ways.

1. Repeat the steps for recording automation to write new automation over the pre-existing data.
2. Graphically edit the automation data in the Edit window.
3. Cut, copy, paste, or delete automation.

When you edit an audio track while in Waveform view, edits affect the audio and all automation data playlists on that track.

That is very important to understand. Conversely, if the track display is set to show automation data, edits only affect the type of automation data displayed in the track. For example, with the track display set to “pan,” the Cut command *only* cuts pan data from the pan playlist.

When you paste automation data, the data is pasted into the correct type of playlist, regardless of the track display setting. Audio data is pasted into the audio playlist; automation data is pasted into the appropriate automation playlist. Pasting new data replaces any previous data on the target playlist without shuffling, regardless of whether you are in Slip or Shuffle mode.

Try it. Record and edit automation in a Pro Tools session. Experiment with all of the edit tools to see how each one can edit automation. Create a fade-out manually by drawing it with the Pencil tool, then edit it with the Grabber, Trimmer, and Pencil tools. Draw mute automation on a track with the Pencil tool using the Square shape. Create auto-panning automation on a track with the Pencil tool using the Triangle shape. Experiment! Have fun!