Pro Tools: Automation and Additional Features

This document covers Pro Tools **automation** as well as a few useful Pro Tools features that we haven't previously discussed, including:

- Clip-Gain
- Follow Main Pan
- Pre-Fader Send
- Printing and Exporting Mixes

First off, automation.

Automation In Pro Tools

Automation allows us to make changes to a parameter in real time and have Pro Tools 'remember' those changes, performing them automatically for us on subsequent playbacks. A common use for automation would be to record fader adjustments for a track over the course of a song to achieve an ideal balance for all parts of the song, rather than being stuck with a 'static mix' or the best *average* fader positions.

Recording Engineers used to have to perform all of these adjustments in real time while recording their mix to tape or vinyl. Sometimes they had to employ the use of assistants or band members because they didn't have enough hands to make all of the adjustments at once. We have come a long way since then, and a modern DAW can store automation for almost any parameter.

Viewing Automation In Pro Tools

In Pro Tools, automation data is stored in 'Automation Lanes' for each track. You can view these automation lanes in the edit window by clicking on the 'Track View selector' for a given track.
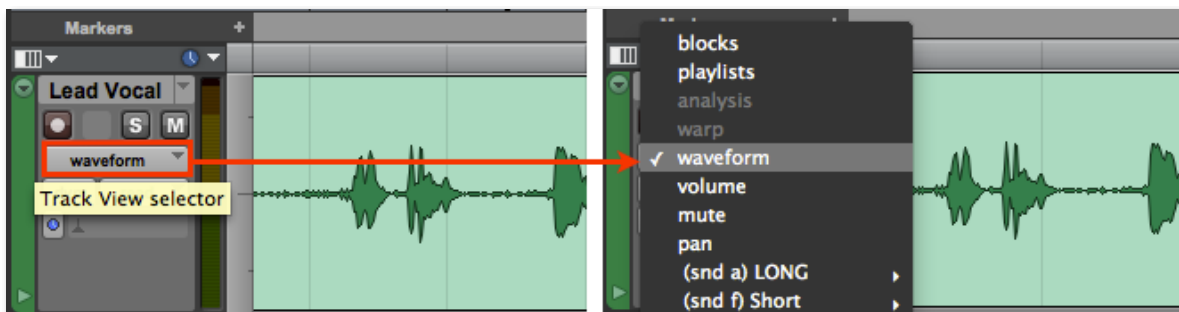
You're probably used to looking at things in waveform view, but if you choose 'volume' 'mute' or 'pan', you will see automation data for that parameter as it pertains to the given track. What shows up in this list depends on what sends and plugins have been inserted on a track, but you will typically see 'volume' 'mute' and 'pan' by default.

When you choose volume from the dropdown menu, the track view will change to show a thick black line overtop of a washed-out version of the waveform. This line is your automation data and in the case of volume automation, it corresponds with the level of the fader in the mix window.
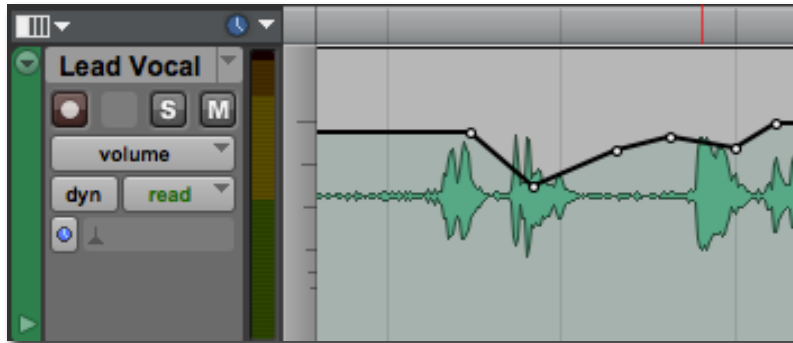
The automation line in the image above is broken up by little white dots called automation points. You can add automation points to the line by clicking on it with the hand tool. If you have the smart tool selected (which you should), hold *command* while hovering over the automation lane and your cursor will turn into the grabber tool. Just like with markers, you can delete an automation point by holding option and clicking on it.

In this view, you can also trim the automation data up or down. You'll notice that using the smart tool, if you hover below the automation line your cursor will behave like the selector tool. If you hover on the line or above it, your cursor will behave like the trim tool. Try selecting a range in the timeline, then hovering over your selection with the smart tool to trim that selection up or down in volume. You can also delete automation points by selecting across them, and then pressing delete.


You'll probably notice quickly that once you write any automation data, Pro Tools will insist on reading it. This means you will lose manual control over whatever parameter you have automated. If you've written automation for a fader and you press play, it the fader will 'snap' to the automated position. You can temporarily override this by clicking and dragging a parameter to a new position, but as soon as you let go it will snap back again.

Automation Modes

Probably the most musical way to write automation data, at least for a fader, is to move it in real-time, rather than 'drawing' it in with the mouse. To do this, we need to make use of the **automation modes**. You can access the automation modes in two places, one in the edit

window and one in the mix window. The lists are they same and it doesn't matter which place you make the mode selection.

Edit Window:
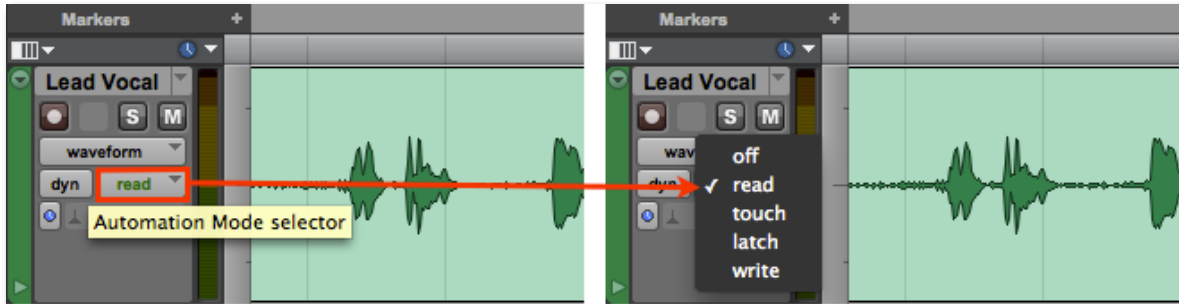
Mix Window:

The various automation modes allow the following behaviours:

'**off**' - Automation is ignored.

'**read**' - Automation is read (during playback)

'**write**' - Records the state of the given parameter from the time playback starts until it stops.

'**touch**' **-** Automation is written only while the fader or parameter is 'touched' or clicked. When released, writing of automation stops and the fader/parameter returns to reading any previously written automation. This is useful for updating automation which has already been written.

'**latch**' - Similar to 'write', except latch doesn't start writing automation until the you make the first change to the parameter. When the parameter is released, latch will keep writing automation at the current value.

Writing Automation

To record automation in Pro Tools:
- Enable automation for the appropriate tracks by selecting from their respective Automation Mode menus
- Begin playback and adjust controls as needed.

- Once automation has been written it is seen as an overlay on the waveform in the automation lanes (use the Track View selector to view various automation lanes).

Editing Automation

- Repeat the steps above to write over old data, or…
- Graphically edit the automation lane data in the Edit window using the grabber or pencil tool (this is done on the automation lanes), or…
- Cut, copy, paste automation lane data in the Edit window.

Edit Window Scrolling

You might find it useful when writing automation to set the edit window to scroll so that you can see what audio is coming up. To do this, click on the 'Options' menu in the main application menus. Navigate to 'Edit Window Scrolling' and choose one of the options. I would suggest 'Continuous', for a smooth scroll.

To get the most out of this experience, you can always 'pop' one of the main faders out of your mix window and then switch to the edit window, leaving the fader in front. With the fader 'floating', you can click it with the mouse to write automation while looking at the edit window, watching your audio go by.

To 'pop' a fader out, click on the small fader icon next to it's output assignment in the mix window, as shown in the image to the right.
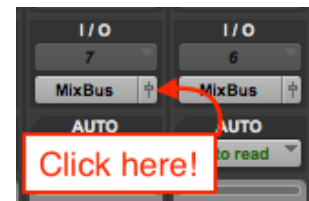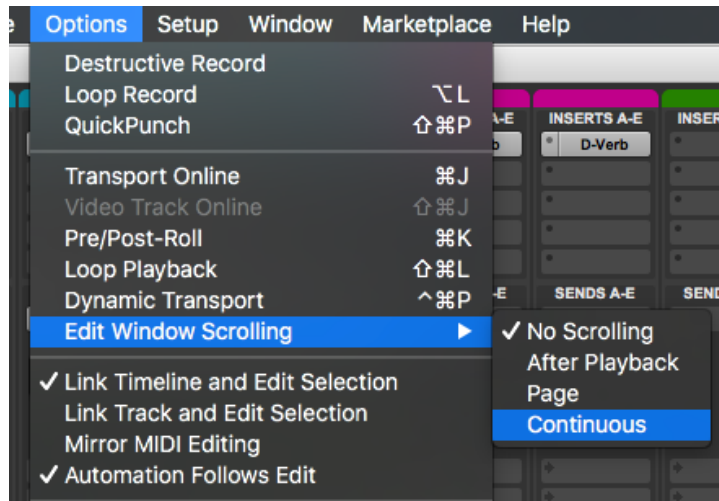
Clip Gain

Clip gain is a relatively new Pro Tools feature. It allows for volume changes to be made to an audio clip independently from the fader. It can very useful when editing, as a way of matching volume for different takes that may have been performed at slightly different volumes. By using clip gain, we can match these performances a little better from take to take.

To adjust clip gain for an audio file in Pro Tools, click and hold on the little fader icon in the bottom-left corner of any clip. A larger fader will appear which you can drag up or down to adjust the clip's gain. The waveform will grow or shrink vertically to reflect the change and the
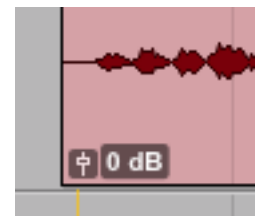
clip's new gain value will be displayed in the bottom left-corner of the clip. To reset a clip's gain to 0dB (it's natural volume), hold *option* and click on the little fader icon again.

When using clip-gain for editing, consider pairing it with a cross-fade for a smooth transition between volumes across time.

Example: I am editing between two takes. The first take was performed much quieter compared to the second. Here is a screen shot of the rough edit, without fades or clip-gain.
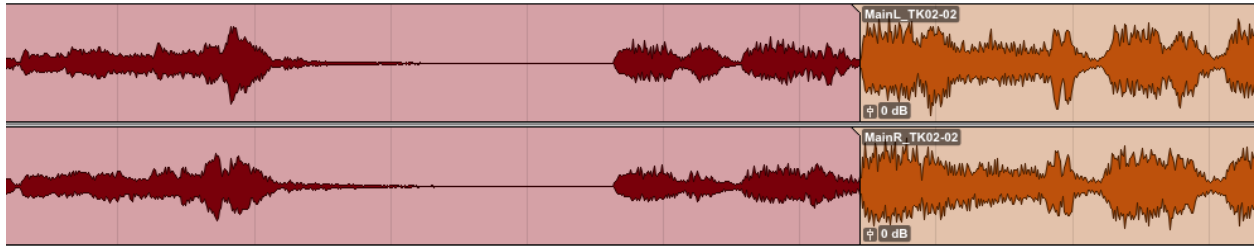
The music after pause should be around the same volume as the orange take, but I want to leave the end of the phrase before the pause alone. I will use clip gain to adjust the volume of just the beginning of the phrase before the edit.

First, I will make a separation in the audio by placing the cursor before the music enters and pressing *command + E*.
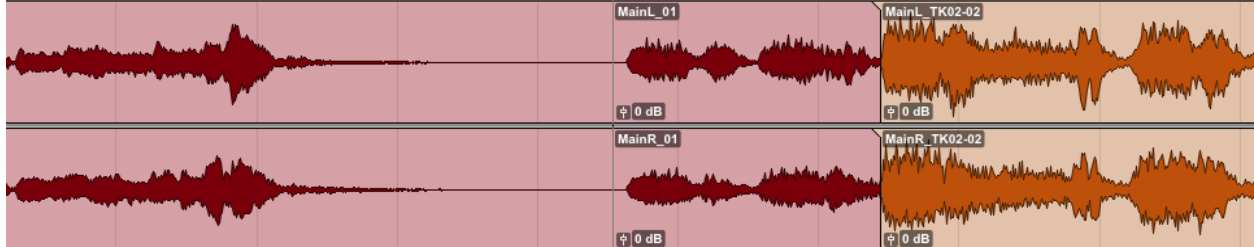
Now that this smaller chunk of audio has been created, it gets its own clip gain fader. I will turn the clip gain up until the two takes are similar in volume, in this case +5 dB.
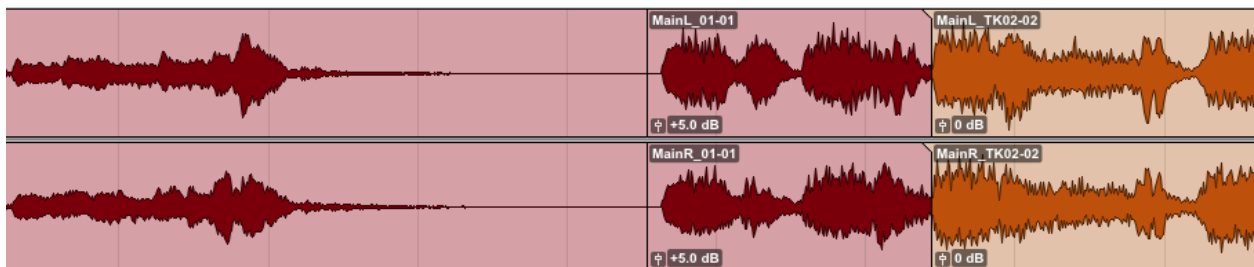
As you can see, the waveform is now larger and the clip gain value has increased to +5.0 dB. I can now finalize the edit with two cross-fades. One for the edit between takes (as usual) and one to make that 5 dB change in volume a little more smooth. By creating a linear (equal-gain)

fade across the clip gain transition, I am really just creating a linear volume change on the track. In the image below, you can see the finished product.
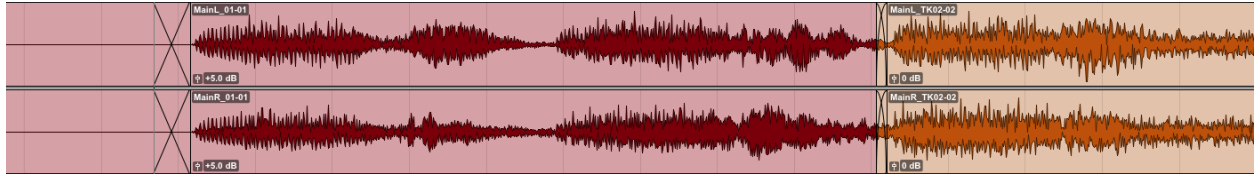
Follow Main Pan

A subtle but useful trick when using sends in Pro Tools is to enable 'Follow Main Pan'. This feature turns off manual control of the pan pot for a given send. Instead, the send's panning will mirror that of the track's main pan pot.

To enable Follow Main Pan, click on one of your send assignments to open its full-sized fader. Click on the button labelled 'FMP'. That's it! Now your reverb send will pan to the reverb bus according to the position of the main pan pot. You'll notice that when FMP is on, the pan pots on the sends become greyed out.

You can use the *option + click* or the *shift + option + click* tricks to turn on FMP for all tracks or for all selected tracks. Doing this will effect all sends in that row (all Send A, or all Send B, etc.).

Pre-Fader Sends

Another send feature we have not made much use of yet is the Pre-Fader send button. You might remember this feature from our mixers lecture.

By turning on the Pre-Fader send button, we make the send level independent from the main fader for that track. This means even if we mute that track, the send can still route signal to wherever it is assigned.

This feature can be useful for setting headphones mixes, or as you will see in Assignment 06, for printing mixes in Pro Tools.

To enable a Pre-Fader send button, click on one of your send assignments to open its full-sized fader and click on the button marked 'PRE'. The same *option* and *shift + option* commands apply to this feature as they do to FMP.

Printing and Exporting Mixes

When mixing in Pro Tools, it can be a good habit to 'print' your mix as an audio track within the session. This keeps things organized, as your mix becomes embedded in the session right next to the edit that it came from.

To print our mix, we need to first create an audio track on which to record. Create a *stereo*, *audio* track in *samples*. I typically name this track '**MixAudio**', which makes it clear that unlike my Mix Bus which is an aux track, this track contains an audio file.

Once we have created our MixAudio track, we need to route our mix to it. There are a number of ways that you could go about this. I am going to suggest that you use an auxiliary send from your MixBus track. By doing it this way, we preserve our familiar MixBus monitoring path and routing allowing us to keep listening to the MixBus while making changes to our session. By adding a second, parallel path to our MixAudio track, we have independent control over it's record level and we can choose to monitor either our MixBus directly, or our MixAudio track, to check that our mix is being recorded properly.

Setting the Send Assignment

You can create this send *almost* the same way you always create a send, however there is a slight snag.

When you click a send in Pro Tools and hover over the 'tracks' area in the dropdown menu, you are presented with a list of tracks. Pro Tools populates this list with any track that is in your session which <u>does not</u> have an input assigned already. This works great for busses because when you create them there is no default input assigned. Audio tracks, on the other hand, are typically assigned an available input on creation. SO, <u>before you assign your MixBus to send to your MixAudio track, set the input of your MixAudio track to 'no input'.</u> This should make it show up in the 'track' list.

You can now assign the send from your MixBus track to your MixAudio track as you usually would.

After you create the send, set it to **Pre-Fader** and put it's send fader at **unity gain (0 dB)** as shown in the image to the left.

Recording Your Mix

To record your mix, first mute your Mix Bus - remember audio will still send to the MixAudio track because it's send is set to Pre-Fader. Now you can arm the MixAudio track by clicking the record enable button. It is the red button with the white circle in it, available in either the mix window or the

edit window.

Once you have armed your track, it's time to record! You can either press *3* on the number pad, or press *command + spacebar* to start recording in Pro Tools. I recommend getting used to number pad 3 as *command + spacebar* is the default OS X shortcut for a spotlight search.

If you select a range on the timeline *before* hitting record, Pro Tools will automatically record for that specific period of time and then stop. If you are printing a mix, I would suggest selecting the audio clips for your final edit and using that as your selection. Sometimes a long reverb might last longer than the end of your audio, in which case you would want to extend the selection a little beyond the end of your edit to preserve any lingering reverb 'tail'.

When you have finished printing your mix, you will be presented with an audio file called 'MixAudio_01'. I would suggest renaming this to something useful by double clicking on it with the grabber tool. For this example, '646-007_Assignment02_LastName_FirstName_FinalMix' has a nice ring to it.

Exporting Your Mix

Now that the mix is printed in place we have committed it to a stereo file, but it's still sitting in Pro Tools. Let's export it so that we can listen to it elsewhere.

There are 2 ways to do this:
- First, make sure you can see the clip list
  - If it is hidden, click the show/hide clip list button (bottom right hand corner of the edit window)
- Select your stereo mix in the edit window (the file you just renamed)
  - Make sure the ALL group is not enabled because you only want to select the stereo mix print
- Once you select this file you will see it highlight in the Clip list side bar
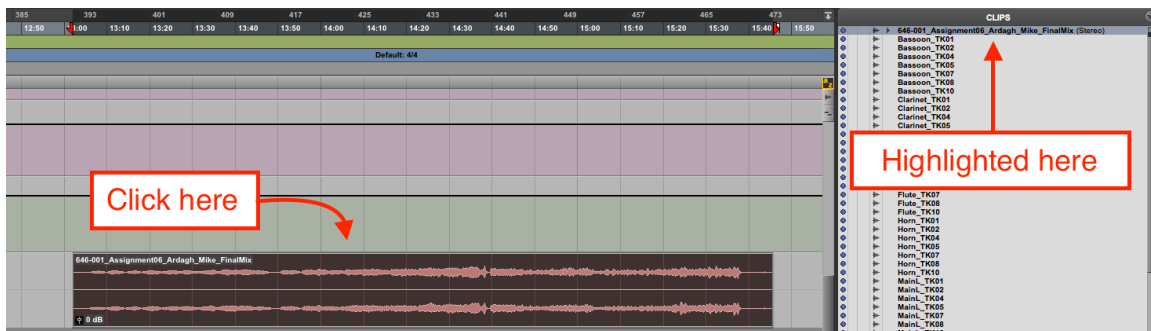
- In the Clips Sidebar menu select "Export Clips as Files…"
  - This is not the Clip menu on the top menu bar! It's the downward pointing triangle under the "CLIPS" sidebar
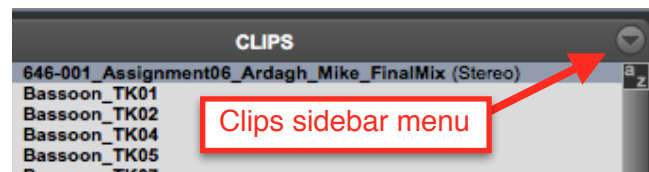
You can also simply highlight the audio clip (in this case your mix print) and use the keyboard shortcut *shift + command + K.*

Export Dialogue

In the dialogue box which appears select the following for a full quality .WAV export:

File Type: WAV - wave files are linear (high quality) and are a commonly used format

Format: Interleaved - this creates a stereo interleaved file from the 2 mono files

Bit Depth: 24 bit - to keep a high resolution as long as possible

Sample Rate: 48 kHz - or 44.1 kHz if you were working at that sample rate already.

Destination Directory:
- Click "Choose…"
- Choose a directory where you would like to export the file to
  - I would suggest: In your Pro Tools "Project Folder" for the song you are working on, inside the folder called "Bounced Files" that Pro Tools automatically creates for mixes.