

Notes on sound editing and mixing with Adobe Premiere Pro

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This document covers additional sound editing and mixing techniques and builds on the “Getting started editing with Adobe Premiere Pro CC” handout. It’s not intended as a step-by-step tutorial, for that you have the wonderful tutorials on Lynda.com. This document is in perpetual beta, so please direct suggestions and corrections to me, your help in improving this handout will be appreciated. — David.

Organizing your audio tracks

In “Getting started editing with Adobe Premiere Pro CC” we covered rubber banding as a technique for adjusting the volume levels using keyframes on a clip by clip basis. For larger projects it can get tedious handing the sound mix on a clip by clips basis. It’s often more efficient to work on a track by track basis, adjusting levels with sliders as you listen to the mix. This will work better if you organize your work so that related items are placed in particular tracks. For example, you might organize your tracks like this:

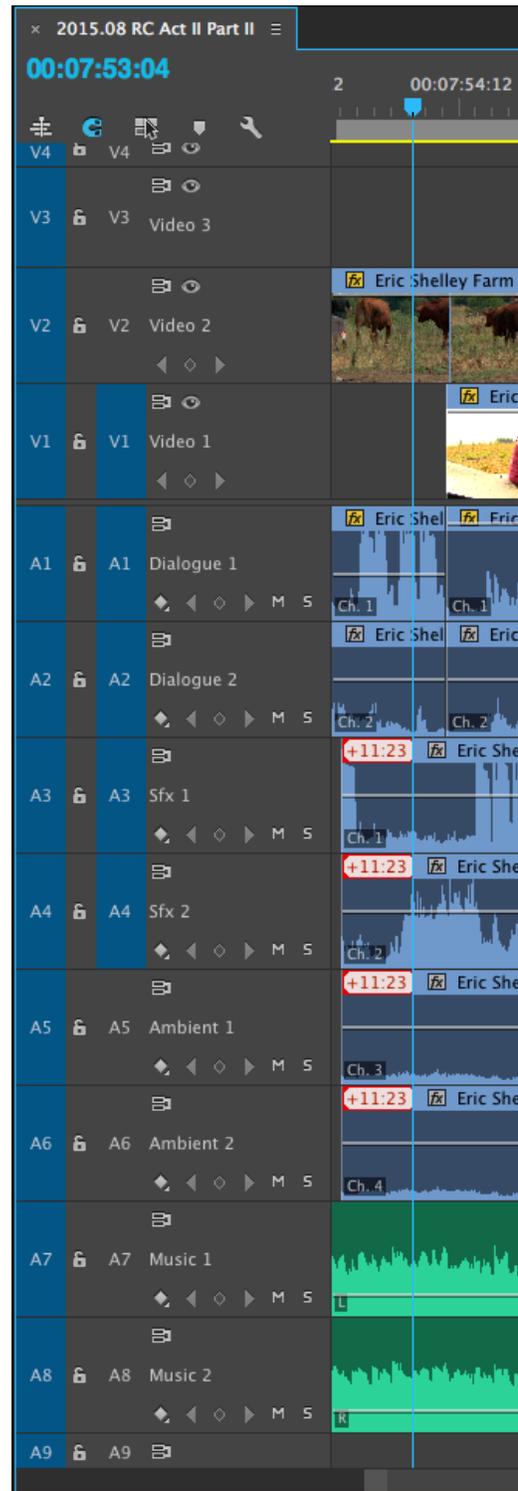
- Tracks 1-2: Dialogue
- Tracks 3-4: Sound effects
- Tracks 5-6: Ambient beds
- Tracks 7-8: Music

With a scheme like this you can work on your mixes for dialogue, sound effects, ambient beds, and music tracks separately. This allows for overlapping and layering of sounds along with keeping things organized. Premiere allows you to rename track names by simply right-clicking on the track name and choosing “Rename.” Add more tracks along the way if you need them for a denser, more layered mix (you can always add more tracks or delete unused tracks in the Sequence Settings).

If you start a project with the tracks organized from the start, it will save you a lot of time when it comes time to do the final mix.

Adding effects at the clip level

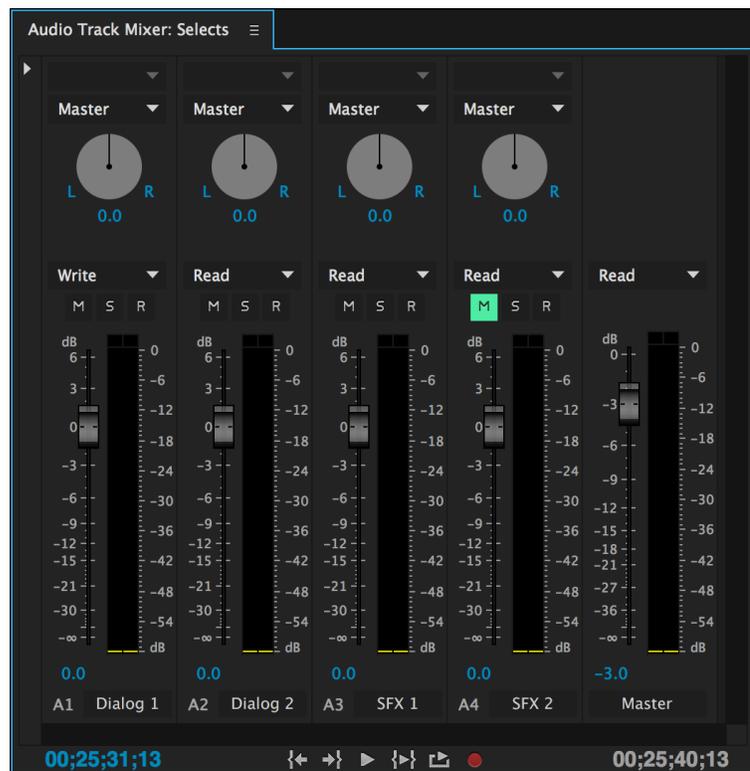
To add an audio effect or filter to an individual clip, drag the desired effect from the Effects pane to the clip in the timeline. Then double-click the clip and you’ll be able to adjust the effect or filter settings in the Effects Settings Pane just like you do for video effects.



Audio mixer panel

Adjusting audio levels on a clip by clip basis and applying effects and filters on a clip by clip can get tedious as your project becomes more complex. Enter the Audio Mixer, which allows you to adjust levels, panning, and add effects to an entire track. The mixer also allows you to route audio to sub-mixes.

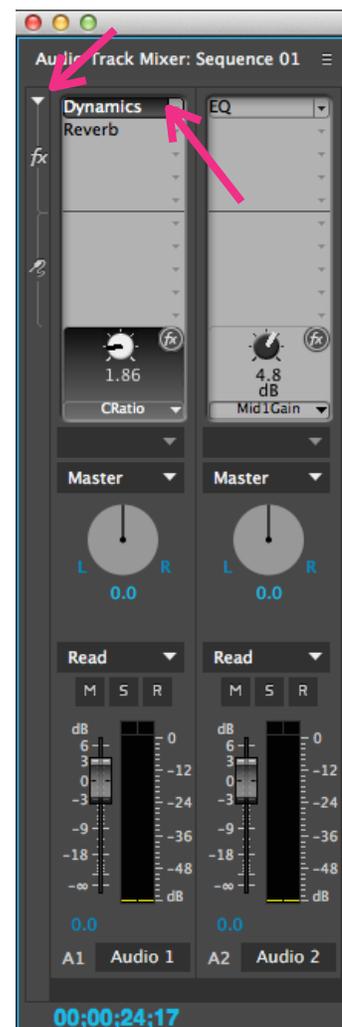
Using the audio mixer panel you can: adjust the level (loudness or volume) over time for each track, adjust pan (for a mono clip determines where in the stereo field the sound is placed) for each track over time, and add effects that apply to a track instead of an individual clip, and you can vary those effects over time as well.



Use of the mixer is covered in detail in the Adobe Premiere Pro help document, “Overview of audio and the Audio Track Mixer” at <https://helpx.adobe.com/premiere-pro/using/overview-audio-audio-mixer.html> and related pages.

To get started, open the Audio mixer by clicking on the Audio Mixer tab (shortcut: Shift + 6). In the mixer, the icons are fairly self-explanatory. One small difference is that if you want to record automatic keyframes and adjustments, Premiere Pro allows you to enable recording on specific tracks in specific ways. These are accessed from the Automation Mode pull-down menus below the track names for each fader. There are several choices:

- **Read** (default): Adjusts a track option (such as volume) affecting the entire track uniformly.
- **Write**: Writes automation as soon as playback starts without waiting for a setting to change.
- **Latch**: Identical to Write, except that automation doesn't start until you begin adjusting a property. The initial property settings are from the previous adjustment.
- **Touch**: Identical to Latch, except that when you stop adjusting a property, its option settings return to their state before the current automated changes were recorded.
- **Off**: Ignores the track's stored settings during playback. This choice allows temporary changes in levels, but each time you replay, the settings are returned to the default levels.



Note that individual clip volume adjustments are not overridden by what you program the mixer to do. There are **clip keyframes** that determine individual clip properties and there are **track keyframes** that determine track properties. For example, if a clip has been set to fade to 0, those changes are reflected in the final mix regardless of the track keyframe settings. I suggest doing your final level adjustments using the mixer, not on an individual clip basis. On the other hand, individual clip adjustments are appropriate, for example, when you want to ease an effect in and out regardless of the final track volumes.

Adding track effects in the Audio Mixer panel. You can add effects to an entire track in the Audio Mixer.

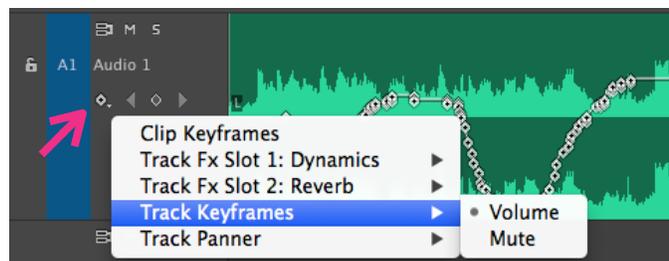
Adjusting the settings of a track effect. In the Effects And Sends panel of the Audio Mixer, double-click the effect and the control panel will appear.

Designate a track effect as pre-fader or post-fader. In the Effects And Sends panel of the Audio Mixer, right-click an effect and choose Pre-Fader or Post-Fader.

Adjusting and viewing audio track effects in the Timeline. You can see the automation of the track keyframes as well as the keyframes of any of the parameters of any of the track effects you've added by clicking on the "Show Keyframes" icon (to which the arrow is pointing on the right) and then selecting which set of keyframes you want to see and/or edit.

Clip and track automation

To see the automation that's been applied to a clip or track, click on the small diamond icon in the audio track's header (track patching info area), and then select one of the following options from the pull-down menu:



Show Clip Keyframes: Animates audio parameters for a clip, including volume level.

Show Clip Volume: Changes only a clip's volume level.

Show Track Keyframes: Animates audio track parameters, including volume, mute, and balance.

Show Track Volume: Changes only a track's volume level, uses Command-click. to adjust the volume, drag up and down. To change the timing of a keyframe, Option-drag left or right.

Essential audio effects

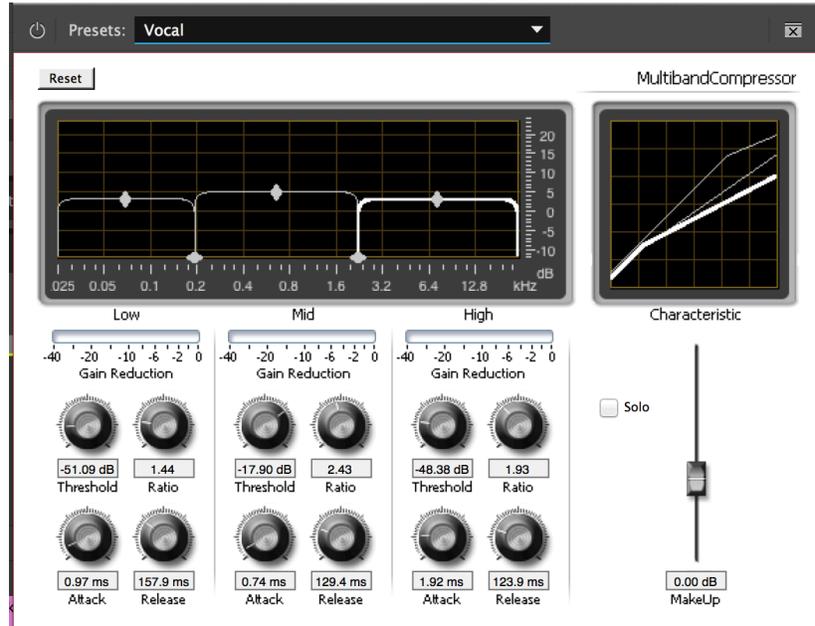
There is no substitute for listening, changing parameters, listening again, and reflecting on the differences that applying an audio effect and making adjustments with the controls has on an audio clip or track. This section will introduce you to some of the most common audio effects and how they are used, and should be used as a springboard for your own critical listening and reflection.

Compression

A compressor is an audio processor that reduces the dynamic range between the loudest and quietest portions of an audio signal. It accomplishes this by amplifying the quieter portions of the signal and attenuating the louder portions of the signal.

We often use a compressor during in the mixing phase to provide a more consistent level throughout the duration of a clip or track, often to bring a vocal track forward in the mix. In many situations, adding compression with a ratio in the range of 1.5:1 to 2:1 will do the trick bringing the tracks forward in the mix without having to raise the gain which will lead to peaks ending up too high.

The **Multiband Compressor (Legacy)** audio effect in Premiere is a compressor that may be added with differential settings for the low, middle, and high frequency bands of the audio signal. If you're using this compressor with dialogue, start by using the "Vocal" preset which may be just what you need, and if not, perhaps it will work for you with a few adjustments.



The following controls are available with this compressor:

- **Threshold** tells the compressor how loud the signal has to be before compression is applied. With this compressor you can set the threshold anywhere between -60 dB and 0 dB as the level the audio signal must exceed in order for the compressor to be invoked. Levels that fall below the threshold will not be compressed.
- **Ratio** determines how much compression is applied, e.g. if the ratio is set at 3:1, the input signal will have to cross the threshold by 3 dB for the output level to increase by 1dB.
- **Attack** specifies how quickly the compressor responds to an audio signal that exceeds the threshold, this compressor lets you set the attack between 0.1 and 100 milliseconds.
- **Release** specifies how soon after the signal dips below the threshold the compressor stops attenuating the signal, this compressor lets you set the release between 10 and 500 milliseconds.
- **Auto** is a mode in which the compressor will calculate the release time based on the incoming signal.
- **MakeUp** adjusts the compressor's output level between -6 and 0 dB to compensate for loss in gain since compression often attenuates the signal significantly.

Since this compressor allows you to treat the high, medium, and low frequency ranges with separate compressor characteristics, you can apply the effect selectively in order to have more control over the tonal characteristics of the compression as well as signal levels. For example, if you have problems with low frequency peaks exceeding your desired levels, you can squash those without affecting the rest of the frequency.

How use the compressor

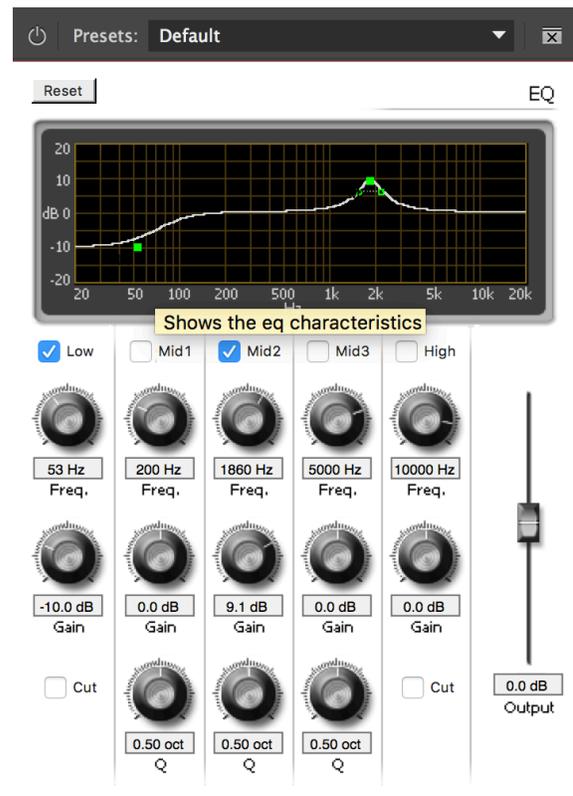
1. Insert the "Multiband Compressor (Legacy)" compressor in the mixing panel on the track you want to compress (or apply it to a single clip by dragging it onto the clip in the timeline)

- Adjust the threshold until the peaks in the signal are pushing over the threshold and triggering the compressor. Unless, of course, you really want to clamp something down, in this case you'll want to make it push over the threshold all the time.
- Set the Ratio to suit the material, e.g. a good starting point for vocals is 2:1, sound effects with deep bass might call for 4:1, while sound effects with wild variations in levels might call for 4:1 or 6:1, but 2:1 is a good place to start.
- The Ratio and Threshold work together. Adjust them together and see how they affect the output signal.
- The attack and release controls shape how the compressor reacts. A fast attack would be useful for anything with sudden peaks early in the signal.
- The release control can really affect the sound of the compressor. Short release times cause the compressor to sound like it's working hard, but a longer release time will sound more natural.
- Use the make-up gain to sit the signal where you want it in the mix, without adding any unnecessary noise (so be careful not to overdo it).

Equalization

The **EQ effect** audio effect in Premiere is a parametric equalizer that controls frequency, bandwidth, and level using multiple bands. The effect includes three fully parametric bands: low, mid, and high. The low and high bands are shelving filters by default. You can adjust the graphical controls in the "Custom Setup" view, or adjust values in the "Individual Parameters" view. In the Custom Setup view you can control the properties of the filter bands in the Frequency window by dragging band handles. Each band includes a control for Frequency and Gain. Mid bands include two additional controls for adjusting the Q-factor. The following adjustments are available:

- Frequency** specifies the actual band you wish to change (between 20 and 20,000 Hz).
- Gain** specifies the amount by which to increase or decrease the band (between -20 and 20 dB). Gain is constant over frequency. The gain is fixed to slope of -12 dB per octave and is deactivated in cutoff mode.
- Cut** changes the functionality of the filter from shelving to cutoff.
- Q** specifies the width of each filter band (between 0.05 and 5.0 octaves).
- Output** specifies the amount of gain to compensate for increases or reductions of frequency bands on the output gain of the EQ.



Other audio effects to experiment with

I recommend experimenting with Reverb and the Audio Limiter as well. For details on other audio effects you might want to experiment with, see the Adobe Pro Help document, “Audio effects and transitions,” http://helpx.adobe.com/premiere-pro/using/audio-effects-transitions.html#audio_effects

Resources

The following tutorials are recommended if you’d like step-by-step guidance through the process of audio editing and mixing with Adobe Premiere Pro:

- “Premiere Pro CC Essential Training,” Lynda.com
- “Learn Essentials > Audio,” *adobe.com*, <https://helpx.adobe.com/premiere-pro/how-to/create-video-story.html>

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