



Sound Editing in Final Cut Studio

Creating a Sound Mix

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- ▶ Part 2: Setting Audio Levels ◀
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- Part 5: Finishing Your Mix

Part 2

Setting Audio Levels

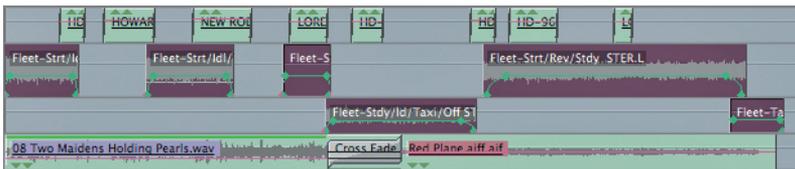
NOTE ▶ This is the second part in a series of tutorials that build upon each other. Before beginning this part, make sure you've completed the exercises in Part 1.

Momentarily, you'll dive into the Audio Mixer window, where you can animate all of your audio levels on the fly, dynamically adding fades and keyframes. But before you do, remember that there are several other ways to adjust audio levels that are sometimes more efficient than using the Mixer.

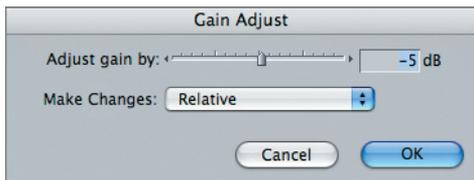
- 1 Play the *2. Ready For Mix* sequence.

It's probably apparent to you that the plane sound effect is a little too loud, and it competes with the dialogue tracks. You could individually adjust each of those sound effects clips, but because they're so similar to one another, you can adjust all of their levels simultaneously.

- 2 Select all of the clips on tracks A5 and A6.



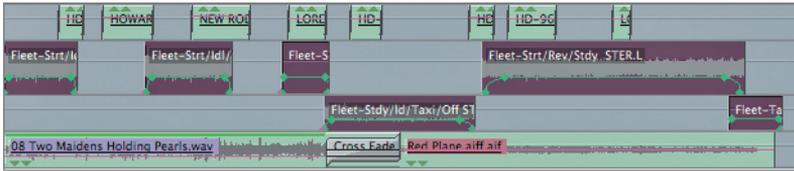
- 3 Choose Modify > Levels, or press Command-Option-L.



The Gain Adjust dialog appears.

In this dialog, you can modify the audio level of all the selected clips in one operation. You can choose to set an absolute level for all the clips, or to make a relative adjustment so that each clip's level is boosted or attenuated from its current setting.

- 4 Set the “Adjust gain by” slider to -5 , leave Make Changes set to Relative, and click OK.



Each clip is attenuated by 5 dB. Notice that the fade-ins and fade-outs are not affected. If you set Make Changes to Absolute, any keyframes would be eliminated.

NOTE ▶ Although this dialog uses the term gain, it's the clip level that is modified, not the gain filter as described in the “Normalizing Audio” section in Lesson 4.

- 5 Play the sequence.

If you're still not happy with the level of the sound effects, you can also make 1 dB or 3 dB adjustments using the keyboard.

- 6 While the sequence is playing, press Control+ (plus) to boost the clip level by 1 dB. Press Control-- (minus) to lower it by 1.

Or, you can press Control-] (right bracket) or Control-[(left bracket) to boost or attenuate the level by 3 dB.

These commands will affect all selected clips, or if no clips are selected, they'll apply to the clip currently under the playhead.

► **What's a Good Level?**

Proper audio levels vary dramatically depending on your intended output format and exhibition location. A good sound mix for an iPhone video is very different from one intended for a movie theater. However, there are a few essential things to keep in mind:

Understand dynamic range: Dynamic range is the difference between the minimum level and the peak level. If you want your music or sound effects to feel louder, rather than turning them up, turn down your dialogue track. The dialogue tracks should be set to your target “average level,” which typically is -12 dB for television viewing, or -20 dB for theatrical exhibition. If your average level is too high, there's no room to get louder. On the other hand, if your dialogue is too quiet, a home viewer will turn up the volume to hear it, and when intense music or an explosion occurs at peak level it will wake the whole neighborhood, which makes for an unpleasant viewing experience.

Adjust for screening venue: Certain exhibition environments have specific capabilities for handling dynamic range, so it may be necessary for you to engineer your product according to where your audience will eventually view it. For example, an airplane safety video will be watched in a noisy environment through cheap speakers, so don't mix a wide dynamic range program for that setting.

Know your exhibition environment: Before locking your sound mix, it's critical that you hear it in the same environment as your audience. If you create your entire mix in your bedroom using headphones and then show it to an audience at a film festival theater, you're going to be in for some big surprises, and so is your audience. If you mix your show on a professional soundstage and most viewers are going to watch it on their iPods, you'll run into similar problems. Different speakers are capable of playing back different frequency ranges. You may be monitoring on a system that can play those crystal high or room-shaking low tones, but if your exhibition equipment doesn't have the same capability, your audience won't hear all that you intended.

Never exceed 0 dB: Digital audio has no headroom. If an audio signal exceeds 0 dB, it will distort on playback. Because sound has such variance in loudness, it's always better to play it safe and set your absolute maximum ceiling for peaks (not average) of around -3 dB to -6 dB. That leaves a little headroom for unexpected spikes or for unforeseen peaks created by later transcoding or translations that may modify your program without your control (such as uploading a file to YouTube).

Trust your ears (usually): Apparent volume can vary significantly from actual volume. Human ears are specially attuned to certain frequencies. In general, a higher-pitched sound “feels” louder than a lower-pitched one at the same measurable volume level. It's important to acknowledge this in your mix; don't turn up the siren sound effect so loud that it hurts just because you want to see it reach -12 on the audio meter. On the other hand, don't ever turn up a sound so that it risks peaking, even if it sounds relatively quiet to your ears. If any sound hits that 0 dB mark, you're likely to hear a click or buzz rather than the sound that you intended.