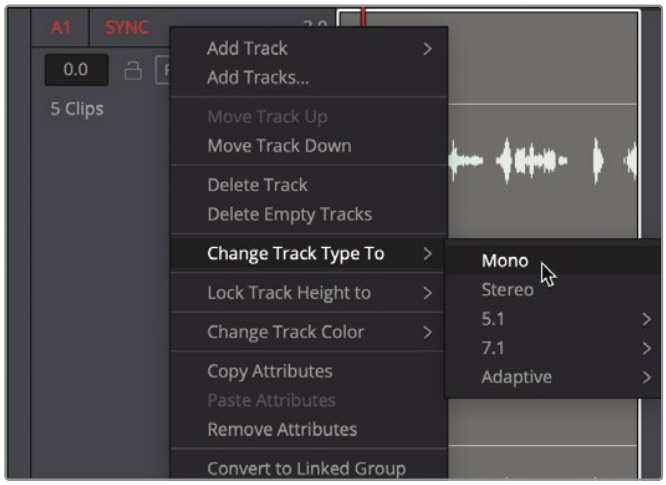
4 Right-click the A1 SYNC track header and choose Change Track Type To > Mono.



After you convert the track type, three key indicators let you know the track was changed. The label to the right of the track name now reads 1.0 to indicate a mono track. The meter to the right of the track header shows a single volume meter instead of two meters. Lastly, the clips on the track show only one waveform.

The clips themselves are not modified, however. If you edit or copy one of these clips onto a stereo track, both channels will reappear. Because a mono timeline track can contain only one channel of audio, the left channel (the upper channel as seen in the timeline) is used by default when stereo clips are edited onto mono tracks. Since both channels on these clips were identical, converting the track was the quickest way to make all the clips on the A1 SYNC track mono.

Trimming Clips in Fairlight

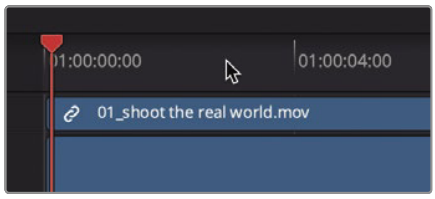
The next step when cleaning up a spoken word track usually is to refine them using a trimming method like one you used in the edit page. However, the trimming behavior in the Fairlight page is more akin to trimming with the Selection tool on the edit page, and not the Trim tool. You can extend or shorten clips without worrying about pushing tracks out of sync because Fairlight never ripple trims clips.

1 In the Index, double-click the thumbnail frame for the second marker.

The playhead jumps to the end of the first timeline clip on the SYNC track. The marker note in the Index describes the last word of the clip is cutting off too early.

Let's first play over the clip to hear the narration.

2 Like the lower timeline in the cut page, to position the playhead at the start of the timeline, drag in the timeruler or hold down the middle mouse button and drag in the timeline window.

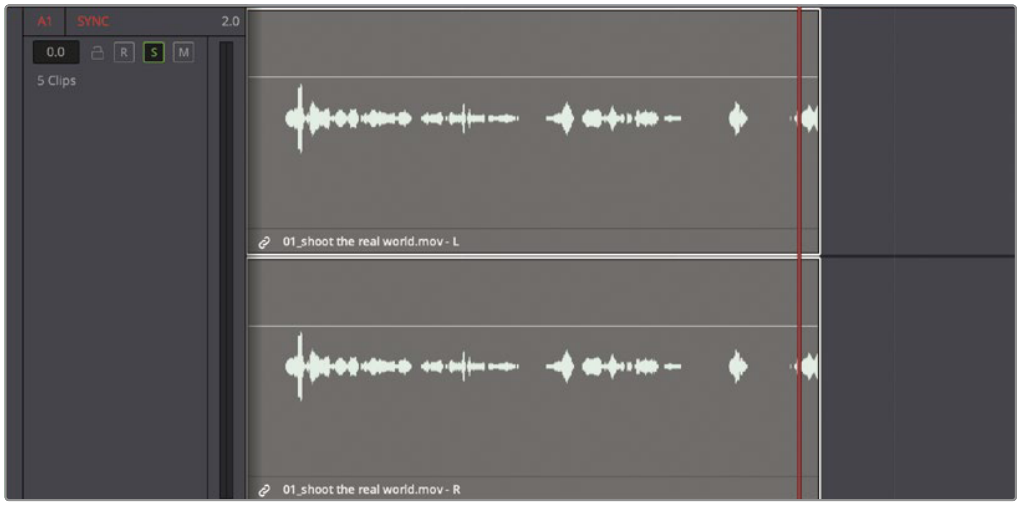


NOTE If your playhead is not fixed in the center like the cut page's lower timeline, open the Timeline View Options and select the Fixed Playhead button from the top Timeline Options row of buttons.

3 Press the Spacebar to play over the first clip.

The last word at the end of this clip ends a bit too soon. You can trim it out to extend the clip and include the last word. You can also zoom in on the waveform to more clearly see the last word.

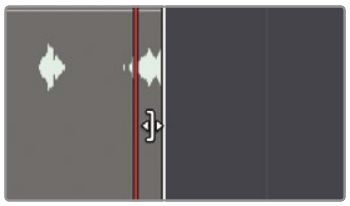
4 Hold down the Option key (macOS) or the Alt key (Windows) and scroll the middle mouse wheel to zoom in horizontally on the waveform or drag the horizontal slider in the toolbar.



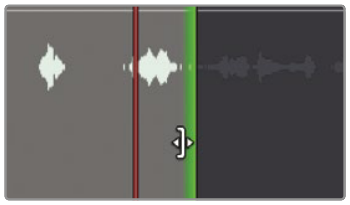
Although Fairlight is designed for audio, the trimming behavior is the same as the edit page, meaning that if you trim an audio track that is linked to video, the video gets trimmed as well unless you unlink the tracks.

5 In the toolbar, click the Link Selection button to unlink video and audio.

6 Place the mouse pointer over the end of the sync narration clip until the mouse pointer changes to a trim cursor.



7 Drag the end of the clip to the right until the last word is fully included in the clip. Use the waveform on the track as a guide to ending the trim.



Let's listen to the end of the clip.

8 Position the playhead a few seconds before the end of the clip.

9 Press Spacebar to play the fixed clip.

10 Unsolo the A1 SYNC track.

11 In the toolbar, click the Link Selection button to enable it again.

Trimming in the Fairlight page is not bound by video frames, so when unlinking audio from video, you can be very precise with subframe audio trimming.

Aligning Sound Effects

Once your narration or spoken word tracks are edited, you can turn your attention to editing sound effects and music. Sometimes you'll use music, which is completely mixed for the entire project, and at other times you'll receive music split into individual music cues. Still other times you'll have mixed music on which you want to add transients or short sound hits that add an audible exclamation point.

1 Press Shift-Z to see the entire timeline.

2 Hold down Shift key and scroll the middle mouse wheel to scale the tracks vertically until you can see all five audio tracks.

3 Double-click the third marker in the index, "03 Missing SFX on A4." The playhead jumps to the start of the sound effect clip on A4.

4 Solo track A4, SFX 03 track.

5 Hold down the Option key (macOS) or Alt key (Windows) and scroll the middle mouse wheel or drag the horizontal slider in the toolbar to zoom in on the sound effects.

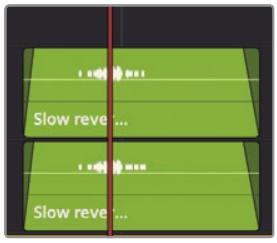
Let's review the sound on this track and the video that goes along with it to understand what you are about to do.

6 Press Spacebar to play the sound effect until the credits appear in the viewer.

This sound is just a single, loud, swoosh that makes a good exclamation point for the nighttime plane flying by. Based on the note in the marker, you need to copy this swoosh sound and line it up with the next planes that fly by.

Keep in mind that copy/paste functions in the Fairlight page are designed to enable precise placement of clips based on the position of the playhead. So, pay close attention to your selection and to your playhead when copying and pasting the sound effect.

7 Drag in the timeruler or middle-mouse drag the timeline to position the playhead directly over the middle of the swoosh sound waveform.



Based on the viewer, the middle of this sound effect is aligned to the frame where the plane is almost out of the frame.

8 Select the Swoosh clip on the A4 and SFX 03 tracks, and press Command-C (macOS) or Ctrl-C (Windows).

9 Drag in the timeruler or middle-mouse drag the timeline to move the timeline forward until the next two planes that come toward the camera are almost out of the frame.

As you drag the timeline position, the copy of the clip is seen as a translucent clip that follows the playhead. Throughout the move, the playhead maintains its position in the middle of the swoosh waveform. This behavior makes it easy to position the sound exactly where you need it.

10 When the playhead is located just as the two planes are about to leave the screen, press Command-V (macOS) or Ctrl-V (Windows) to paste the clip at that location.

Let's review the new swoosh sound effect placement.

11 Drag in the timeruler or middle-mouse drag the timeline to the start of the sound effects on the A4 SFX 03 track.

12 Press Spacebar to play over the effects.

13 Disable the Solo button on the A4 SFX 03 track.

If you find that the alignment is not perfect, you can repeat the process, but this time cutting the copied sound effect clip and moving it using the playhead. The benefit of this method rather than using the , (comma) or . (period) keys as you have done in the edit page is that the playhead can move in subframe increments.

Recording Audio in a Timeline

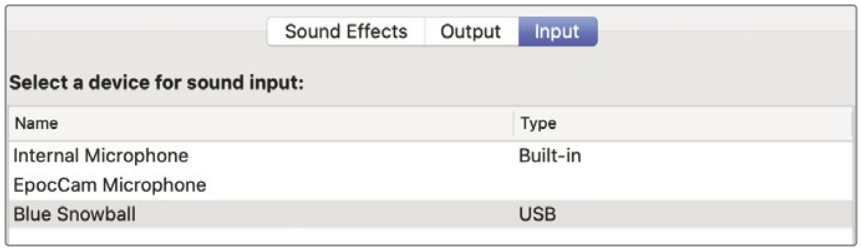
You can record your own voiceover in DaVinci Resolve right in the Fairlight page timeline. All you need to do is set up a microphone, patch the microphone input to a track, arm the track, and start recording.

In this exercise, you'll record a temporary ending voiceover tag for this trailer. Frequently, the voiceover talent can't record his or her lines until after you have started editing the sound. So, you can easily record a temporary VO (voiceover) clip to use as you edit. When the real VO talent arrives, you can use this same recording method to record the final VO directly into the timeline.

NOTE If you don't have a separate microphone, you can use the built-in microphone in your computer for the following exercises. If you lack a microphone entirely, read through the setup and recording sections and follow along when the recording is finished.

1 If you have a stand-alone USB microphone, close DaVinci Resolve and attach the microphone to your computer.

2 In your computer's Sound preferences or settings, set your microphone (or the built-in mic) as the audio input device.

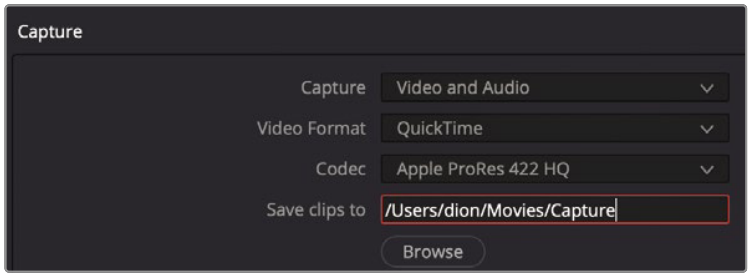


3 In DaVinci Resolve, open the Age of Airplanes project.

4 Choose File > Project Settings.

5 Click the Capture and Playback Settings.

6 In the "Save clips to" field, click the browser button and choose a location to store your newly recorded audio files.



TIP The default capture location is set to the Scratch disk you set up in the Preferences window in Lesson 1. This setting is used only when you want to override that preference.

7 Click Save (or Cancel if you made no changes) to close the Project Settings window.

Now that your mic is attached and the capture path is set, all you need to do is create a track for your recording and set up the timeline.

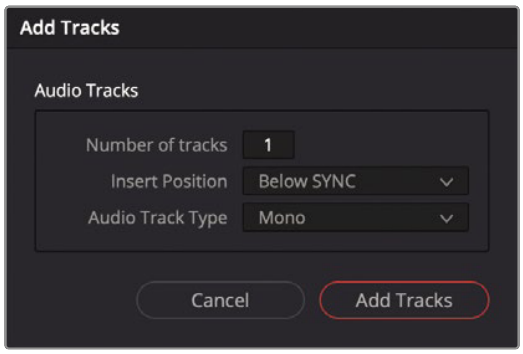
Creating and Patching Tracks for Recording

When recording audio onto a track, the important thing to consider is whether you want to record in stereo or mono. By now, you've probably figured out that mono is the preferred format for dialogue and VO.

For this recording, you'll create a new mono track and use the input settings in the Mixer to patch the microphone to that new track.

1 Right-click any track header and choose Add Tracks.

2 In the Add Tracks dialog that appears, set "Number of tracks" to 1, and set Insert Position to Below SYNC. Change the Audio Track Type to Mono.



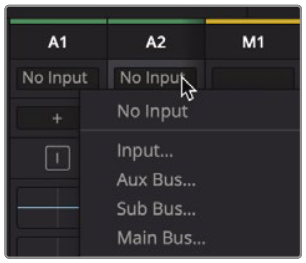
3 Click Add Tracks to close the dialog.

A new mono track appears below A1. Now, you must set the input for this track. To patch a track's input, you can use the input settings in the Mixer.

4 In the track header, double-click the Audio 2 name, and type **VO** because this will be your voiceover track.

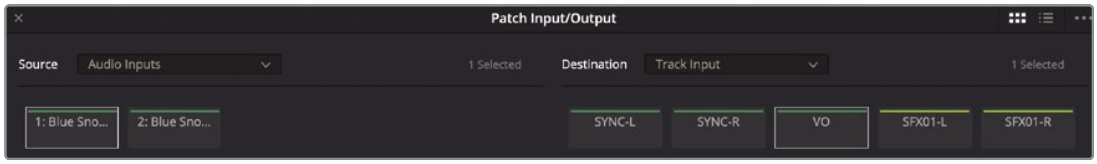
On the Mixer, which is displayed on the right side of the Fairlight window, an Input menu is available at the top of each channel strip just below the track number assignment. You can use this Input menu to assign the connected microphone to record onto the A2 VO track.

5 At the top of the A2 VO channel strip, from the Input drop-down menu, choose Input.



The Patch Input/Output window opens, displaying the Source inputs on the left and the Destination tracks on the right.

6 Select the first channel for your microphone as the source and select the VO track as the destination.



7 At the bottom of the window, click Patch to set your input patch, and then close the window.

Your track is created and patched. Now, you can arm the track to practice your recording.

Arming a Track for Recording

Each track header includes an Arm button to enable the track for recording. To do so, you must first patch the track with an input, as you've done for the Audio 2 track. The Arm for Record button (R button) is available in both the track header and the track's channel strip in the Mixer.

TIP If you are not using headphones, arming the track may cause the audio to feedback if your computer audio is too loud. Before arming the track, either connect headphones or lower the computer speaker volume.

1 In the Index, double-click the last thumbnail frame to move to the marker.

This is where you will record the voiceover.

2 In the A2 track header, click the Arm for Record (R) button.

> **TIP** Make sure no other tracks have solo enabled or you will not hear the A2 VO track.

The track name and Arm button turn red to indicate that the track is armed for recording.

The script for the voiceover you will record says:

"In the age of airplanes, we have become explorers once again."

3 Practice your line once or twice prior to recording.

4 In the transport controls, click the Record button. When the playhead starts moving and drawing a red region within the timeline, you are recording. Read the line with your best movie trailer voice. When you're finished, press the Spacebar to stop recording.

5 To review your voiceover recording, first disarm the VO track by pressing the R button in the timeline header.

6 Move the playhead just before your recorded VO clip and play the timeline.

> **TIP** If you enabled the Solo button on A2 prior to recording, disable it now.

Even though this temp VO is all you need for this project, DaVinci Resolve's Fairlight page includes more advanced recording tools for automatic dialogue replacement (ADR), multitrack music recording, and foley sound effects. If you couldn't record the voiceover, the next exercise will bring you up to date as you work with a professionally pre-recorded voiceover clip.

Modifying Clip Attributes

Although you recorded a fine temporary VO, when the real VO is recorded with professional talent, you'll need to preview it and add it to the timeline. You can access and preview any audio clip in your media pool within the Fairlight page.

1 In the upper-left corner of the DaVinci Resolve window, click the Index button to close the Index, and click the media pool to show the bins and clips in this project.

2 In the bin list, select the Audio bin.

All your audio clips are visible in the bin. You can preview them to find the right clip and edit it into the project.

3 Click the HF VO clip to load it in the media pool preview player at the top of the panel.

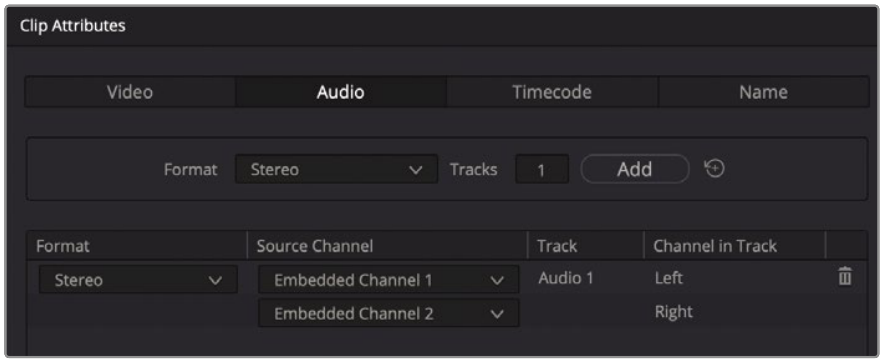
Without playing the clip, the appearance of the two waveforms should tell you that this is a stereo clip. You should also see that the upper channel (channel 1) waveforms peak are lower, which indicates it is a quieter channel. Let's give them a listen to hear the difference.

TIP Listening to the differences in channels is easier when using headphones because each ear hears a separate channel of the stereo clip.

The left channel, channel 1, does not sound as clear as the right channel, channel 2. Often, dialogue or interviews are recorded with two microphones. A boom mic is typically the primary and clearest mic, while a lavalier or lapel mic is useful primarily as a backup. You now need to ensure that channel 2 is used when you edit your professional VO clip onto your mono track.

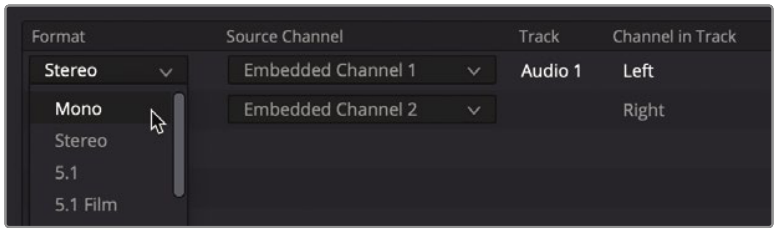
4 In the bin, right-click the HF VO clip, and choose Clip Attributes.

5 At the top of the Clip Attributes window, click the Audio tab.

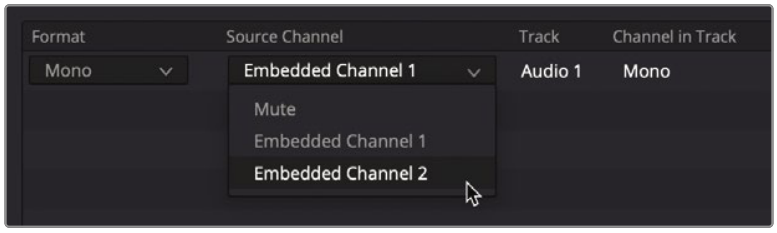


The Clip Attributes Audio tab shows the format of the audio, as well as all the channel mapping. By default, the left channel is always channel 1 and is the channel used when converting a stereo clip into a mono track. You can change that default behavior in the Clip Attributes window.

6 In the Format drop-down menu, choose Mono.



7 Change the Source channel to Embedded Channel 2.



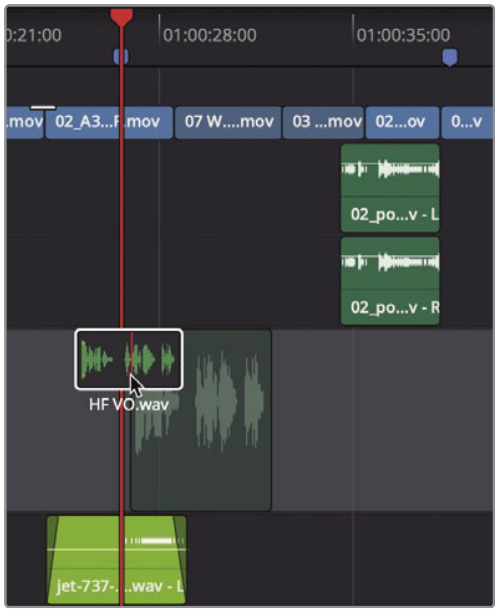
8 Click OK to close the Clip Attributes window.

You now have a mono clip for your VO that uses channel 2 as its audio source. When you edit this clip into the mono track, you'll use the good-sounding boom mic recording.

9 In the timeline, select the temporary VO clip you recorded, and press Delete or Backspace to remove it.

10 Drag in the timeruler or middle-mouse drag in the timeline window to position the playhead over the marker that indicates where the VO should start.

11 Drag the HF VO clip from the media pool and place it so the start of the clip lines up with the playhead position in the timeline.



12 Play the timeline to hear the mix of all the tracks.

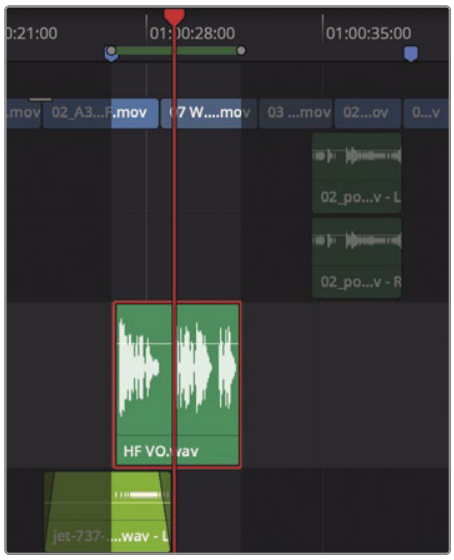
Now that you know how to set up, remap, and edit your dialogue tracks, you're ready to address the sound quality of your project.

Using Fairlight FX

Fairlight includes a wide range of native audio processing plug-ins that work across all three operating systems. When you use a macOS, you also have support for third-party VST and Audio Unit plug-ins. Windows users also have VST plug-in support. You can apply these plug-ins to a single clip or an entire track to fix common problems or to design sounds so that they perfectly match the mood of your project.

1 Drag in the timeruler to position the playhead over the HF VO clip in the timeline.

2 Select the A2 VO track in the timeline header and press X to mark In and Out points around the HF VO clip.



3 Solo the VO track so you can listen to it independent of the other soundtrack elements.

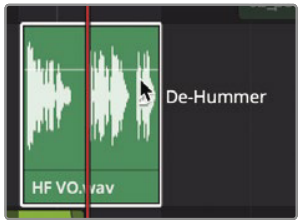
4 Press Option-/ (macOS) or Alt-/ (Windows) to play from the In point to the Out point.

In the VO, you can hear a low-pitched background buzz. This is not an uncommon problem and can happen when an electrical signal seeps into your audio cables. Typically, it is due to poor electrical grounding or poor audio cable shielding.

You have a convenient tool to minimize this common problem: a notch filter that can block a very narrow band of audio frequencies in your recording. The buzzing hum in this audio clip, as often occurs, is at a frequency of 60 Hz or 50 Hz, depending on whether you recorded in North America, Asia, or Europe (due to the AC delivery standards in those continents.) Since this type of buzz is so common and so specific, Fairlight includes a special De-Hummer Fairlight FX plug-in to address the problem.

5 In the upper left of the Resolve window, close the media pool and click the Effects Library button to display the Audio FX plug-ins.

6 In the FairlightFX category, drag the De-Hummer plug-in onto the VO clip in the timeline.



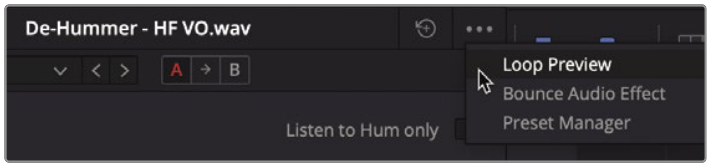
When you apply the plug-in, the De-Hummer dialog opens with controls to specify the type of hum you have.

TIP To remove an audio plug-in, right-click over the clip in the timeline and choose Remove Attributes. In the Attributes dialog that opens, select Plugins and click Apply .

7 In the Frequency section, click the 60 Hz button to set the De-Hummer to notch out the 60 Hz frequency.

The graph in the De-Hummer displays frequencies along the bottom. Low frequencies are to the left and higher frequencies are to the right. The dips in the graph indicate the narrow bands of frequencies that are being cut out or diminished in the clip.

8 In the upper-right corner of the De-Hummer window, click the Options menu and choose Loop Preview.



The clip will play continuously in a loop, allowing you to hear the changes immediately.

9 As the clip plays, drag the Amount dial to adjust the amount of hum that is removed.

As you drag the Amount dial clockwise, you are lowering the volume of the selected frequencies (60 Hz in this case) in the voiceover clip. So, you are also altering the sound quality of the voice recording. It's a delicate balance to decide how much hum to remove before you lose too much vocal quality.

Looking at the graph, you might think that by selecting 60 Hz that the filter will notch out only that frequency, but simply removing one frequency may not fix the problem. You can adjust the Slope control to filter out additional frequencies that may be contributing to the unwanted hum.

10 Drag the Slope control until you hear the least amount of hum in the voiceover.

11 When you are done making adjustments, click the Options menu and choose Loop Preview to stop the loop playback.

12 Close the De-Hummer window and disable the Solo button on A2 VO.

> **TIP** After closing the window of an audio effect, you can access its controls again from the Inspector.

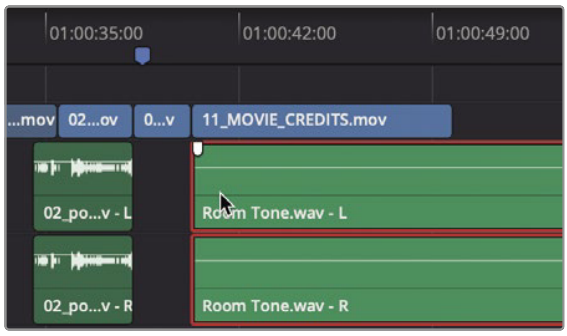
The De-Hummer is one of the most frequently used plug-ins, even for picture editors, because it addresses a very common problem with very little effort.

Applying Noise Reduction to an Entire Track

In the previous exercise, you applied a repair plug-in to an individual clip. You can also apply plug-ins to an entire track, either from the effects inserts at the top of the mixer or by dragging the effect from the Effects Library to the track header in the timeline. In this exercise, you'll apply Resolve's powerful Noise Reduction plug-in to the entire A1 SYNC track and have it sample the noise to automatically remove it.

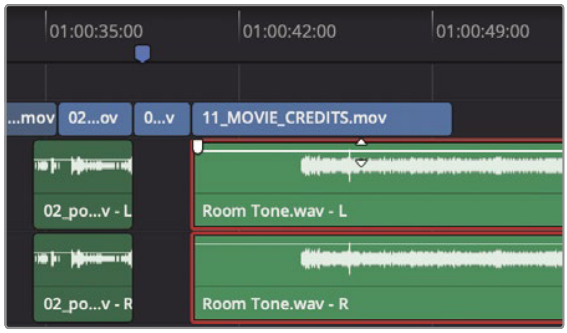
The noise reduction effect works best when you have an area on the track where you hear only the noise. Luckily, in this production they recorded ambient room tone that you can add to the timeline.

1 Open the media pool, and from the Audio bin, drag the Room Tone clip to the end of the timeline on the SYNC track.

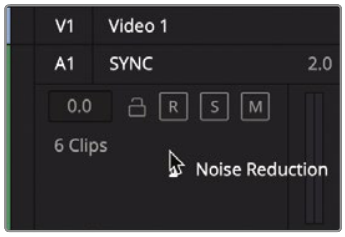


This room tone clip will be used to sample the noise that we want removed from the rest of the clips on this track. However, since the room tone is very quiet, we'll increase the volume to get a better sample.

2 Using the timeline volume line on the room tone clip, increase the volume until a clear waveform is displayed on the clip.



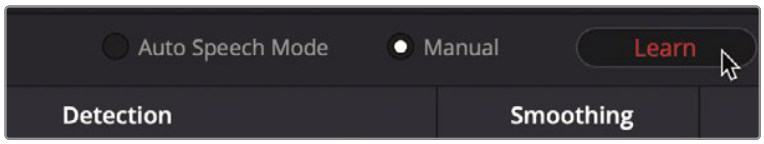
3 In the Effects Library, drag the Noise Reduction plug-in onto the A1 SYNC track header.



Although the noise reduction has many controls, if you have a few seconds of clean room tone, you can have the noise reduction plug-in sample what that sounds like and remove it from the remaining clip on the SYNC track.

4 Solo the Sync track.

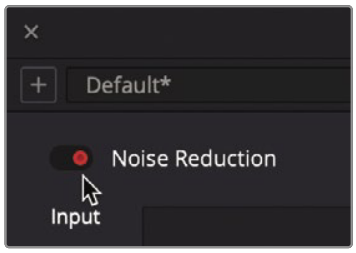
5 Click the Learn button and play over just a few seconds of room tone, and then stop playback.



Clicking the Learn button and playing over the noise you wish to remove, subtracts that same noise from the other clips on the track. That's the benefit of applying the plug-ins to a track and editing all clips from one source onto its own track.

6 Drag in the timeruler to move the playhead over the start of the timeline and play to hear the corrected interview clips.

7 Click the red Bypass switch in the upper-left corner of the dialog to turn off the plug-in.



8 Click the Bypass switch again to hear the plug-in.

Wow! What a difference noise reduction can make.

9 When you are finished, stop playback. Close the Noise Reduction dialog.

10 Delete the room tone clip from the timeline.

Noise Reduction is just one of the exciting Fairlight FX plug-ins that come with DaVinci Resolve. Now that you have seen how easy it is to apply plug-ins and presets, you can start experimenting with them on your own projects.

Setting Track Levels

Audio balance is the key to the entire sound-mixing process. When you achieve balance in your mix, you have successfully done your job. In the previous lesson, you performed volume adjustments at the clip level, but to achieve overall balance you must now adjust entire tracks relative to one another.

1 From the main menu bar, choose Workspace > Reset UI layout to return to the default window layout.

2 Make sure the mixer is still open, and drag its left edge to expand the mixer and view all the channel strips.

The mixer panel includes a channel strip for each timeline track and a master audio strip. Each channel strip is color coded based on the track color that you assigned. Unlike the Inspector, in which you can adjust the volume of a single clip, mixer fader changes are applied to entire tracks.

3 Press Shift-Z to see the entire timeline.

4 Drag in the timeruler to move the playhead over the start of the timeline and press the Spacebar to play the trailer.

Overall, the sync sound interview clips seem too low and the HF VO seems too loud. No problem. You can the adjust the volume level for an entire track using the corresponding SYNC and VO faders in the mixer.

5 Play the timeline again and drag up the SYNC fader until the interview voice plays at a more clearly audible level. Then adjust the VO fader to set an appropriate level for the VO track.

6 Play the timeline again and adjust the other tracks as needed to achieve a proper balance between all the sound elements.

> **TIP** Using automation control, you can record track level adjustments as you play the timeline. You can learn more about the Fairlight page in the DaVinci Resolve User Manual, as well as the Introduction to Fairlight Audio Post with DaVinci Resolve 17 training manual.

As you adjust overall track levels, it is important to keep an eye on your meters levels and to monitor the audio results using quality speakers in a calibrated system. Just as you want to view your video content on a calibrated display, you must hear your soundtrack content in an audio-calibrated environment. So, before you complete audio postproduction, take off those headphones and prepare your final mix using professionally calibrated speakers.

Lesson Review

1 On the Fairlight page, how can you ripple the timeline track as you trim?

2 How do you identify the track you want to record on in the Fairlight page timeline?

3 Within a bin, how do you change a stereo clip to mono?

4 True or false? A De-Hummer can remove only 50 Hz and 60 Hz noises from stereo clips.

5 True or false? You can apply Fairlight FX to a clip or an entire track.

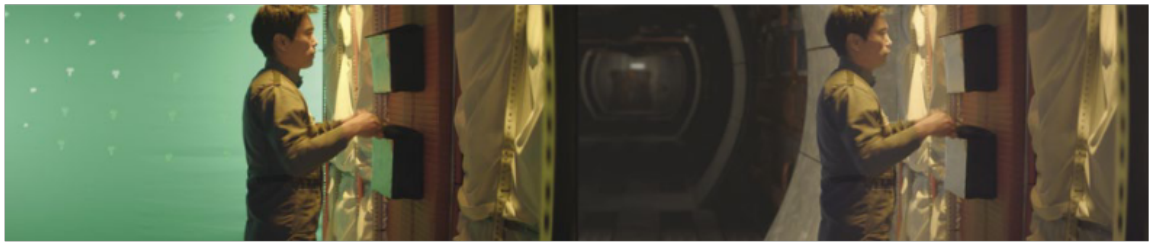
Answers

1. On the Fairlight page, you cannot ripple trim. All trimming in the Fairlight page is an overwrite trim, which prevents you from rippling audio out of sync with the video.
2. In the Fairlight page timeline, you select the track you want to record on by clicking the Arm for Record button (R) in the timeline track header.
3. You can change a stereo clip to mono from a bin by right-clicking the clip and choosing Clip Attributes. Then choose Mono from the Format menu.
4. False. The De-Hummer can remove a wide range of frequencies.
5. True. You can apply Fairlight FX to a single clip or to an entire track.

An Introduction to Visual Effects Compositing

When mutants attack or aliens land spaceships on Earth, filmmakers turn to visual effects artists to make those shots reality. You can use visual effects to create images that cannot be realized with live-action production. Anything that's too difficult, too dangerous, or even too expensive to capture with a camera, you can create with visual effects compositing.

DaVinci Resolve has the full Fusion visual effects and motion graphics toolset built in, which makes it possible for you to create feature film-quality effects without switching between software applications!



While you can create simple visual effects in the edit page, you'll find more advanced tools for building sophisticated, photorealistic effects in the Fusion page. It features a flow graph-style interface, known as a node tree, designed specifically for visual effects and motion graphics work.

As you read through the following lesson, you'll begin to understand the many tasks you might choose to perform using Fusion's complete 3D workspace and over 250 compositing and visual effects tools. Best of all, it's now part of DaVinci Resolve, so you can switch from editing, color grading, and audio postproduction to visual effects and motion graphics with a single click!

What Is Visual Effects Compositing?

Compositing is the process of combining two or more images to make a unique, new image. But it's not just about combining images. You can composite many different elements such as video clips, animations, text, mattes, particles, and graphics. Sometimes these elements are called *layers* because they are layered on top of each other to produce the new image.

Many tasks fall under the umbrella of visual effects. Just as with color and audio postproduction, visual effects are a huge and exciting part of the creative filmmaking process. Depending on the type of work you do, you may need to learn some or all of the skills needed to create a finished visual effects shot. Smaller productions often require you to build shots from start to finish, whereas larger studios may have specialized artists dedicated to tasks such as rotoscoping, 3D, particles, lighting, and so on.

Even when you are hired as an editor or a colorist, you will often be asked to produce smaller effects. Like all aspects of postproduction, learning the tools and techniques requires practice. Understanding the technology behind the tools will improve your problem-solving skills and efficiency.

As industry deadlines tend to grow shorter, editors and colorists who know how to finish shots quickly and efficiently are in the highest demand. Learning the basics of Fusion visual effects in DaVinci Resolve—along with color correction and audio postproduction—will make you a more valuable artist and open up more job opportunities.

Getting Started with Visual Effects

Visual effects were once a luxury reserved only for big-budget feature films. With the power of Fusion built into DaVinci Resolve, you can add feature film-quality visual effects to any program without a massive budget.

If you think visual effects are only about creating aliens, spaceships, and explosions, you are missing out on the many smaller effects that can improve any project. In fact, most visual effects consist of corrective effects, clean-up work, or inserting subtle hidden effects such as sky and window replacements. These effects don't take long to do and can improve everything from poorly framed b-roll to dull gray skies.

Adding Elements

Weather is unpredictable, and when the story calls for snow, you need snow! That's why creating elements such as snow, rain, fog, and even lightning are essential skills of the visual effects artist. You can use the particle system in Fusion to create realistic weather elements that move, fall, and drift naturally.

Sometimes it's just too dangerous to do things on a real set. For example, smoke, flying debris, and fire are always dangerous when actors and an entire crew are involved. In many cases, these elements can be shot separately, and you can composite them in later as a safer yet realistic-looking alternative.

Animals and Kids

The unpredictable nature of working with animals and children can slow each shooting day to a crawl. Being able to divide and conquer a shot by splitting it up and shooting animals separately from main action can ensure that you get the shot completed without schedule overruns. Through seamless compositing, you can combine each section of a frame to create a realistic split-screen composite that looks like one take.

Sky Replacement

A perfect sunset or a bright blue sky with puffy clouds are great backdrops for any scene, but weather is out of your control. When everyone is on set, the equipment is rented, and the clock is ticking, you've got to get the shot even when the weather isn't cooperating. That's where the (extremely common) art of sky replacement comes in. Fusion's keyers, rotoscoping tools, tracking, and 3D compositing can remove ugly gray skies or salvage

overexposed skies. Add in some Fast Noise or volumetric effects and that clear blue sky can include beautiful dramatic clouds that weren't there during the shoot.

With the 3D controls in Fusion, you also can simulate the light direction, atmospheric haze, and realistic parallax camera movement—all elements that can make the difference between a believable sky replacement and a cheap, artificial fake.

Performance/Cosmetic Fixes

Correcting or improving an actor's not-quite-perfect performance can avoid the need for expensive reshoots. This common compositing task is rarely noticed by an audience and can be simple to do, depending on the required fix. For instance, a detail often missed during shooting (but painfully obvious in the screening room) is when an actor portraying a dead body involuntarily moves his eyes. Compositing closed eyes from one frame over an entire shot is a skill that can save the shot and be repurposed for many similar fixes. The removal of scars, tattoos, or uneven tan lines all use similar techniques and can be performed using Fusion's planar tracker, paint tools, and rotoscoping.

Changing Locations

Production budgets always limit where and when you can shoot a scene, but simple environmental enhancements can disguise those limits and change the feel of an entire scene. Such effects can consist of replacing windows in a moving car because you couldn't close Times Square to shoot your scene, or "moving" the ground-floor apartment location you could afford to a penthouse view. These are common tasks for the visual effects artist and can be very quick fixes for editors and colorists to perform.

Wire Removal

Visual effects are also used to add realism to already dangerous stunts. Getting performers to fly across the screen either from explosive force or supernatural powers often requires safety harnesses and wire rigs. You can hide those rigs and wires using Fusion's simple clone tools and tracking, a task that editors and colorists can take on in a pinch when the visual effects artists are busy with larger composites. Plus, the wire removal skills you use in Fusion techniques can also apply to removing lighting stands, telephone wires, and unsightly antennas.

Set Extensions

You can take environment enhancements to the next level to create entire set extensions that visually transport your audience to a specific location (while keeping your production safe at home on a sound stage.) Instead of shipping the whole cast and crew to the Himalayan foothills, you can replace the background of your shots with temples and mountains and snow. For period pieces or science fiction, such effects can save enormous amounts of time and money because you don't have to build massive sets. You just construct set fragments around your actors and place green screens in the surroundings. Using the Fusion page during postproduction, you can track the camera movement and replace the greenscreen with 3D extensions to your set.

Motion Graphics

Motion graphics, or motion design, is all about animating graphic elements. It's the marriage of visual effects, animation, and graphic design with the goal of presenting onscreen information. Because information in some form is the objective, text often plays a primary role in almost every motion design project. The Fusion page includes both 2D and 3D typography tools along with creative paint, Bézier-shape drawing tools, and incredibly deep spline animation controls. They enable you to create engaging animated designs that communicate, educate, and entertain.

Learning to See

If you want to create high-quality visual effects, you need to be very conscious of how the world appears around you. Visual effects must look and feel real, or your audience will stop believing. The skill to observe the surrounding world in painstaking detail is just as important as mastering the technical and artistic side of visual effects.

To become a skillful visual effects artist, you must start noticing how light, perspective, and depth appear in the real world, and then bring those observations into your composites.

If all the elements that make up a composite are meant to be in the same location, then you must make sure that light hits them all from the same direction. Simulating relative sizes, parallax motion, and depth to a real-world level of detail is essential to the realism of an effects shot.

As you begin creating visual effects, start small. The Fusion page is very deep and incredibly powerful. The beauty of having Fusion built into DaVinci Resolve is that you can jump into creating visual effects with one click; try something out to see if it will work, and then, depending on your skill and the time available, either pass it off to your visual effects artists or finish it yourself.

Visual effects compositing is about a combination of tools rather than any single filter effect. It takes time, patience, and experience to do well, but it's an incredibly exciting activity that you can learn through experimentation and practice. Eventually, you'll create the most thrilling cinematic moments imaginable.

As Walt Disney said, "It's kind of fun to do the impossible."