

Cleaning Nat Audio... By Dan Bertalan

In the last installment, we discussed the dos and don'ts of capturing "quality" natural audio in the field for outdoor media production. The next challenge in the production process is performed in the studio to enhance the quality of that audio by removing either undesirable or contaminated background sounds. Yes, we know that you went to great lengths to capture uncontaminated audio, but you obviously didn't give enough rat poison in the neighbor's dog or slit the tires of that guy a half-mile down the road who needs a new muffler.

Let's clean it up, Boris

Fortunately for outdoor media producers using nat audio, the CIA has been working their hind ends off for decades trying to clean garbled audio so that hear what Joke and Dagger were whispering in Spy VS Spy down a dark alley. Though the CIA hasn't released their audio forensics software to the general public – yet – there's some easy-to-use stuff out there that can scrub your crappy nat audio into squeaky-clean sounds.

DC 6 or Diamond Cut 6, is one of the higher end programs for cleaning audio. It comes with a great manual but even more importantly has a built-in tutorial where you learn to turn junk audio into gold by removing hiss, crackles, pops, frequency hums and an assortment of unwanted sounds. I produced a documentary on Kodiak Island, Alaska some years back and one of my key interviews with some native Alutiiq people was contaminated with a driving rain hitting the metal roof of the building we were taking shelter in. Though the challenge seemed impossible at first, about an hour on DC 6 finally rendered a remarkably clean voice audio track. A Google search on Diamond Cut DC 6 will offer a ton of options to purchase the software or you can go directly to www.diamondcut.com and actually download a demo version to see what it can do and determine your comfort level.

Though DC 6 will take care of almost any audio scrubbing challenge, over the past year I've switched to using Adobe Audition software for the same purpose plus all my other audio production challenges. The gang at Adobe really came up with a winner with this program as it allows producers to clean and manipulate audio in about any way you can imagine and it comes with a familiar interface similar to Adobe's other products such as Premiere, After Effects and PhotoShop. Because it's so user-friendly and a multi-tasking giant, the following information on cleaning and enhancing nat audio will be directed to the Audition interface – though the steps themselves can be achieved on about any audio forensics software. To avoid writing an entire tutorial, we'll keep steps to the bare bones.

So let's say you have some incredible audio of bull elk bugling that you captured in Yellowstone during September. It's killer stuff and you want to produce a compelling audio segment for the Rocky Mountain Elk Foundation's website so people get goose flesh when they open the homepage. But to your dismay, when you listen to your killer elk audio, you hear **Old Faithful gushing** in the distance, a **tour bus passing** on the highway and some foreign **tourists clicking wildly** away on their cameras while **chattering some language** that you could swear was Lithuanian. Before you impale yourself on your shotgun mic and toss the tape in the trash, take a

deep breath and realize that most nat audio is contaminated with something. But don't fret. We'll scrub this baby until it shines.

First, open the audio file. Adobe Audition (AA) will display the two stereo waveforms with the left audio track above the right audio track. Hey, look, you got lucky right off the bat. The excited Lithuanians were standing on your far left and most of their chattering is restricted to that left channel. Not only that, by the appearance of the peak waveforms of the elk bugle, the elk must have been slightly to your right. So let's make everything easier from the start by replacing the left channel with a copy of the right channel. It's as simple as dragging over the right channel (slide the cursor low in the right waveform) until it's highlighted. Then click the universal "copy" icon. Next drag and highlight the left channel only. Now hit the "paste" icon. Presto, both channels are right. Of course like most Adobe products there are five ways to achieve the same thing. So don't be afraid to mess around and discover what works best for you. It's almost impossible to make a mistake with "undo".

Okay, next let's get rid of that damned tour bus. It makes you wonder why the Park Service lets those noisy things into the park to contaminate our elk audio – plus everyone's "serene" experience with nature. Anyway, listen to the audio while you watch the waveform. You notice the bus is passing mostly right before the elk bugles. So let's sample the frequency of only the bus before we try to filter it out. Drag the cursor to highlight only the bus noise. Now navigate > effects > noise reduction > noise reduction. This opens the noise reduction filter window. AA offers on-screen prompts to help you along the way. Now click "capture profile" to have AA capture the unwanted noise and create a simple profile for removing the noise. You can click "preview" to listen to the filtered results or "bypass" to hear the unfiltered audio. This helps you in messing with the various adjustments until you get rid of most of the unwanted noise. Play around with the lower graphic display by grabbing points on the filter line and moving them up or down. You will hear the noise increase or decrease. By messing with this control, you will discover where in the frequency range the bus was creating the most problem. Keep in mind your goal is to reduce the unwanted noise to a minimum while preserving the sounds you want to keep. It's easy to go overboard and eliminate all the noise only to discover that you also eliminated much of your desired sound as well.

Once you've created your custom profile for removing the bus noise > select entire file > okay. This will apply the noise filter to the entire file. You also have the option to select only part of the audio file where the bus was close and remove the noise from that section of the timeline. If you have a number of similar audio files with the same bus noise (or rain on a tin roof) you can save your custom filter settings for future use and batch process similar files. And don't be afraid to do a similar second pass on the filtered file. Sometimes a second noise reduction on the bus will remove some remaining residual bus noise.

Next, let's get rid of those Lithuanians talking. You removed most of the unwanted chatter early on by duplicating the right channel but there's still some left to clean. Repeat the bus noise filtering process for the talking. Just be careful that you don't filter out any of the elk bugling. However, if you remove some of the elk sounds, that's okay as we can restore that later in the process.

Wow, this is sounding pretty cool now. But we still have those dang camera clicks and the hiss of Old Faithful in the distance. First, only highlight the section of the timeline where all the shutters were clicking after the elk bugled. Next, filter them out by navigating > noise reduction > click-pop eliminator. Though this filter is designed more for removing old audio pops and clicks, it will attack those similar camera noises with a little help. Play with various settings until you remove the camera clicks. If that doesn't work you can always zoom in on the timeline and highlight only those short clicks and either delete them or insert silence over them.

Next, get rid of Old Faithful with the hiss reduction filter and essentially the same process. Hiss and hum reduction is pretty easy stuff with quick presets that work great.

Jeez, this is sounding really good but it still doesn't give me goose bumps. That's because we filtered out some of the vocal depth and timber echo of the bugling. So let's place that bad boy back in the timber and give him some more testosterone.

We give him a shot of testosterone by messing with the > effects > filters > dynamic EQ. Play around with all the presets or find one you like and adjust the frequency sliders until you get the sound you're looking for. The elk sounded great on this one with just the "premaster eq" preset.

Finally, we place him back in the dark timber with some custom reverb by > effects > delay effects > reverb. Like all the filters and effects, mess with the presets and sliders until you get your desired results. In this case, the reverb presets of "medium empty room" and "large occupied hall" both gave it the big timber sound. Again, the bypass check will allow you to compare filtered and unfiltered as you make adjustments.

There you have it. Junk sound turned into the sweet natural sounds of nature. Perhaps it won't give you goose bumps, but if you want to actually hear the before and after sounds of this elk bugle audio exercise, go to www.greatoutdoorsmultimedia.com and you'll be mildly amazed.

Next Installment: Part 3 - Making Nat Audio sing without stealing the show

In the past year alone, Dan Bertalan of greatoutdoorsmultimedia.com has used his nat audio skills to help capture a Silver Telly Award in outdoor production, Honorable Mention at the International Wildlife Film Festival, and Third Place in OWAA's Big Game Hunting TV/Video competition.