Joe Weed
PO Box 554
Los Gatos, CA 95031-0554
joeweed.com   joe@joeweed.com

Studio Insider #212
Cleaning Up and Looking Back
March 2016

Many in today's music business can remember the time before file sharing, copying, download-ing, and streaming changed everything. People's livelihoods have certainly been demolished as walls have fallen, taking with them professions and their ethics.

But it's been OK to see some walls go away…

When we designed and built Highland Studios 25 years ago, it was important to me to have a dedicated machine room for all that big, noisy and heat-producing recording gear. Tape ma-chines, power amps, computers and hard drives all made a racket, and if I was going to be able to monitor silence, I couldn't work in a room with all that gear grinding and fanning and blowing in the background.

So we designed a dedicated room with space around the perimeter for the large analog tape ma-chines, and included space for equipment racks and storage of tape and equipment. The room served very well for many years. But now the analog tape machines are long gone. The monitors I use in the control room have their own built-in power amps, designed into the speaker enclo-sures. They don't have any fans, so when there's no audio playing, they're totally silent. The computer that runs the studio has only one small fan, and during a typical audio recording ses-sion, it only needs to run internal drives. I'll soon be switching those to solid state drives, which have no moving parts, so computer noise is diminishing to almost nothing.

I've been eyeing that machine room jealously for a couple of years. It looks into the adjacent control room, with soundproof double-paned windows and a double-wall system keeping it acoustically isolated. I've already installed mic lines and a headphone circuit, so it has been functioning as an iso room for scratch tracks, as long as the musician working in it doesn't mind feeling cramped.

Jealousy finally won out. While my daughter and her fiancé were here over the holiday, Wes and I carted out the remaining seldom-used gear, the racks and cabinets, almost doubling the open

Joe Weed
PO Box 554
Los Gatos, CA 95031-0554
joeweed.com   joe@joeweed.com

floor space. We got rid of lots of wiring and hardware, as most modern gear uses dedicated audio snakes with 25-pin connectors. The result is a new iso room, with a large window that communicates with the control room. There's comfortable space to track an acoustic guitar or for two to sing a duet. And there's a nice view of the Pacific Ocean, which never seemed to impress the machinery that used to live there.

As Wes and I labored together to make the new iso room, I thought about additional changes in recording technology that are reflected in physical ways in my studio.

I used to use midi gear to automate much of my mixing work. Midi (an old music computer language) automated my analog audio consoles; now I use a digital desk that was designed to work with Pro Tools. At first glance, it looks like an older desk, but the controls actually give the computer instructions on what to do within Pro Tools, and reflect what the software is doing: the faders move up and down, tracking each channel's volume moves in real time. Meters glow as their green and yellow LEDs jump up and down, showing me the levels on each track. However, the moving faders don't actually lie in the audio path; they tell the computer to lower the volume of a particular channel, communicating instantly and reliably without putting any noisy resistors into my audio flow. The channel strips have LCD displays that tell me the names of the various tracks in a recording session; gone are the long strips of white adhesive tape that we used to place below the faders to tell us where each instrument was in a 24-track session. The console measures only about four feet wide, and produces far less heat than the old behemoth analog consoles we used to use. The console alone has a bigger brain than the entire computer that used to run my studio.

Typical signal processing, such as compression, equalization, reverberation, echo or chorus effects, used to be handled by dedicated and expensive units that we mounted in 19-inch equipment racks. I remember when people coming to the studio would bend down and study the gear in the producer's desk and the console, looking for familiar and/or impressive equipment to form a basis for judgment of the studio. All that gear had to be plugged in to AC power, and then connected to the patch bays with carefully built custom cabling. Getting every manufacturer's scheme of chassis grounding to work with everybody else's mounted in the same rack could be a real fight.

Joe Weed
PO Box 554
Los Gatos, CA 95031-0554
joeweed.com   joe@joeweed.com

But not anymore. The world has moved inexorably towards "virtual" systems, in which the processing of audio happens exclusively inside the computer. Specialized companies have invented high-quality signal processors that take the place of all the ones I mentioned above, but with several significant advantages: Each signal processor is a software unit, which doesn't require a metal box, or a power cord, or cabling to a patch bay and connection to the signal chain with patch cables. All the parameters of a signal processor are now automatable, and the automation works within the host digital audio workstation. In my studio, I use Pro Tools. Automated parameters mean that the signal processor, whatever its type, can be made to vary its response over the course of a tune or a verse, and repeat those moves every time. Perfectly. For example, a reverb unit can start out with a very short, almost undetectable decay length, during the sparse beginning of a piece. Later, if the arrangement so dictates, it can change its decay to several seconds long and change the quality of the reverb from a medium sized room to a concert hall. All that can be done automatically and with absolute repeatability.

So we've been able to get rid of large numbers of metal boxes and the associated cabling.

When digital microphones are perfected and economies of scale make them available to professionals at affordable prices, then we can get rid of one of the last analog holdouts: mic preamps.

For now, I'm happy and excited with the way these changes have affected my professional life. They've made it better. I'm just hoping that there won't be a digital replacement for me — at least during my lifetime!

See you next month, unless the column comes from a robot…

Copyright © 2016 by Joe Weed

Joe Weed records acoustic music at his Highland Studios near Los Gatos, California. He has released six albums of his own, produced many projects for independent artists and labels, and does scores for film, TV and museums. Joe's composition "Hymn to the Big Sky" was heard in "The Dust Bowl," a film by Ken Burns, which premiered nationally on PBS. Joe recently produced "Pa's Fiddle," a collection of 19th-century American music played by "Pa" Charles In-

Joe Weed
PO Box 554
Los Gatos, CA 95031-0554
joeweed.com   joe@joeweed.com

galls, father of Laura Ingalls Wilder, the author of the "Little House on the Prairie" book series. Reach Joe at joe@ joeweed.com.