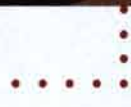


Singer Magazine's

projectstudioproject

part two



SOUND CONTROL

DEALING WITH SOME NASTY SIDE EFFECTS

By R. A. Lindquist

In the first part of our series on how we built a practice/recording studio, we talked about the basics of studio construction when working with an existing structure. Our goal was to "isolate and insulate" so that sounds outside the studio would not interfere with our work. To accomplish this, we staggered the 2x4s on 2x6 headers and footers, made the walls triply thick, and installed a "floating floor" over the concrete pad. We then shot expanding foam into every nook, crack, and crevice we could find.

For the most part, the results have exceeded our expectations. As our studio is located in the back portion of a newly constructed 32' x 40' pole barn (that also serves as an office and garage), it's virtually impossible to totally eliminate every sound coming from the garage area, so we just don't use that area when the red light is on.

One thing we hadn't figured on, however, was the underground well pump. Even though it's sixty-six feet down, and the wellhead is twenty feet away from the outside wall, there's still a faint whirring sound every time the pump comes on. Should we ever get into doing some really serious recording, we may need to shut that down.

Nice Party Room

With all the interior work complete, we now have a really nice 12' x 17.5' room, with a slight peak in the ceiling. We chose a neutral tan for the color on the walls, installed short shag carpet with blue/aqua highlights, and hung track lighting. It would make a great party room, if it wasn't for THE ECHO!

To deal with that, we immediately wafted a quick e-mail to our project consultant, Nick Colleran, at Acoustics First (www.acousticsfirst.com) who reassured us, "Echo is good...we can fix that."

A few days later, an awkwardly large, virtually weightless box showed up. Inside we found two oddly shaped white plastic panels and a variety of foam "tiles" in various thickness, shapes, and sizes. It's what Acoustics First calls the Acoustic kit 1014. Nick explains, "Our acoustical engineer designed our AcoustiKit™ to meet the acoustical needs of someone using a 10' x 14' room and priced under \$400. It seems to cover most project studios and budget requirements." Of course, we HAD to be different. Our room is a bit larger than what the AcoustiKit was designed for.

The 1014 AcoustiKit provides enough acoustical treatment for desktop music production or a small mixing room. It can easily be expanded as the facility and the budget grow. The 1014 AcoustiKit is designed to provide all of the

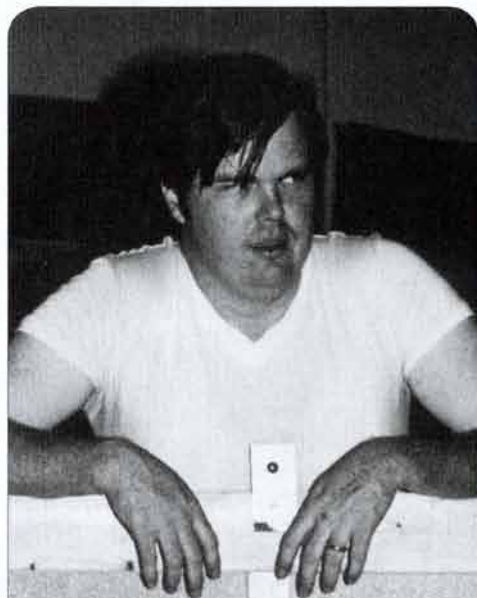
basic elements necessary to treat a room with dimensions up to 10 feet by 14 feet. The single carton contains the original Cutting Wedge® acoustical foam in one-foot square tiles, as well as, two-foot-square panels. The extra surface area, created by the Cutting Wedge pattern, makes it a highly efficient sound absorber. Complementing the wall panels are the Bermuda Triangle Traps® which extend the absorption range, providing bass control in the room corners. Completing the AcoustiKit are the original Art Diffusors®. These are true "Binary Array" diffusors, as used in professional recording facilities. These sound scattering devices make the room seem larger by breaking up reflections. Included with the package are installation instructions and room layouts. The designs, created by a professional acoustician, illustrate placement of materials for different listening positions. (The 1014 AcoustiKit retails for \$398.00 and can be shipped by ground service to any location in the 48 contiguous United States for approximately \$35.)

Stick Up

Nick suggests fastening the foam panels with Liquid Nails™ panel adhesive. Good suggestion, especially for anything going on the ceiling. We tried a lesser-priced generic brand adhesive on the walls, without a problem. However, the cheap stuff failed repeatedly to hold the two larger panels on the ceiling. Only the Liquid Nails brand successfully held the panels in place.

The two diffuser panels also presented a special challenge. It seemed that no matter how we tried, the panels were always laying on the floor the next morning. After several attempts to glue them in place, we finally put a single dry wall screw in the very center. This held the panels in place while the adhesive cured.

With all the acoustic treatments in place, the room had gone from sounding like a bat cave to having a very warm, much-larger-room sound. Throughout most of the frequency range, the sound remained consistent, with very little reverb. In the lower range, however, we discovered a very annoying "flutter echo." To rectify this, we first hung 24 additional 12" by 12" wedgies. While this helped "deaden" the room, it had no effect on the bass flutter. Next, we hung two ceiling clouds—24" x 48" panels. Again, it was a big improvement, but not enough. Apparently, by exceeding the optimum 10' x 14' dimensions, and adding the "peak" to the ceiling, we created some unique acoustic challenges. The good news is, there's a way to fix it. Tune in next time, and we'll see how this all plays out-out-out. ■



what's in your closet?

Nick Colleran, who recorded in many differently sized areas, says that acoustic treatment needs to be approached based upon the individual geometry of the room. "We turned a low basement into a decent mastering facility by adding a 4 X 8 poly (Double Duty Diffuser™/Bass Trap) which has a big wide absorption curve centered on 63 Hz." What about your house? How do you turn something like a 6' x 6' walk-in closet, for example, into a practice/recording area. Nick says "A 6' X 6' closet presents a problem. Six feet is a half wavelength of 94 Hz, so that particular frequency will all but disappear, especially if the ceiling is close to the same dimension. Without much further thought, I'd suggest corner traps and three-inch foam behind the singer and to the sides, with perhaps diffusors in front. You might also create a nice trap in the ceiling if you have sufficient space overhead. The AcoustiKit will do most small rooms and may have enough stuff to make an effective vocal booth that can use more absorption per square foot, especially a converted "closet." The *Singer Magazine* project room is an interesting case study in what additions we can make to the kit where the room is a little larger and the ceiling isn't flat. For one thing, I believe we will make the clouds a standard option to add on."