

Masters on Mastering

DON'T TRY THIS AT HOME

In addition to their considerable expertise, top mastering engineers also bring to bear an arsenal of specialized audio tools. "We have six different kinds of analog playback electronics," says Ludwig. "It's that important to me. I feel that playing back the tape with

the appropriate electronics does a lot of the mastering sound for you and is a crucial starting point. We have Studer electronics, Ampex electronics, ATR-Services tube electronics, Cello Class A electronics, Tim da Paravicini's Esoteric Audio Research tube amps, and most recently the famous Aria pure discrete Class A electronics that were used in the Rolling Stones hybrid-SACD reissues."

Hall adds, "I use a TC Electronic System 6000 sometimes. I use Weiss EQ1s and Weiss DS1s for digital applications. For workstations, I use Sonic Solutions

HD, which is improving all the time. And then there are other times when we've gone totally analog. We just finished, several months ago, the Beach Boys' *Pet Sounds*. We brought in additional Sontec equalizers and some Esoteric Audio Research big tube compressors, and did the whole thing in an analog pass, which is a totally different ball game from what I normally do for surround. But back when we were doing vinyl, everyone had an equalizer and a console and a compressor, and that was pretty much what we used. Nowadays you need many different tools for

ADVICE FROM THE TRENCHES

Independent musicians who are pressing their first disc or just on a tight budget may not be able to take advantage of the benefits that a major mastering facility can offer. Still, there is a lot you can do to properly prepare your project for its final stage. I asked Paul Elliott, mastering engineer at The Soundlab at Disc Makers (one of the largest American manufacturers of independently released CDs) to describe some common pitfalls to avoid when preparing a project for duplication.

Do you get many projects from artists who have already done their own mastering?

We do get a good number of people who are doing it themselves. They go out and get an all-in-one type of box and feel they can master the music themselves. We're dealing with people that don't really have a large budget, so they are cutting corners in this way. When it gets to us, sometimes the damage is already done, and they're hoping that we can improve it. We sometimes are trying to undo what's been done.

You deal with vinyl in addition to CDs. What are some of the differences from a mastering standpoint?

For vinyl, your phasing is much more important. You can't have stuff out of

phase on a record, because your needle's going to be jumping out of the groove. Out-of-phase bass content—mainly kick and bass—is more problematic in causing cutter-lift, which causes the cutter head to lift off the record.

What about vinyl and the loudness issue?

There's still a push with vinyl to be just as loud as everything else. But depending on how many songs there are on a side, we have to worry about how much bass and how much volume we can give a record. There are a number of different rules to follow.

Do you have any advice for artists submitting their projects (both CD and vinyl) for mastering?

My advice generally is that it's a good thing to have another set of ears listening to the music and giving opinions and making some decisions on it. They can take a step back and look at it from a different perspective. Have a mastering engineer or someone other than yourself or the studio engineer who recorded it listen to your mixes. Occasionally, artists or engineers will do their own thing, and then they'll send



Paul Elliott

COURTESY DISC MAKERS

it in, and they'll want feedback. Usually, what I end up talking to them about is getting the best out of each track.

Can you elaborate on that point?

Take some time to get each individual element to sound as good as possible. Use good musicians, good mics, good snares, and so on, to get good sounds. Then you're building with quality material to start with. There's that old saying about fixing it in the mix. The same thing happens here. People say "fix it in the mastering." It's not going to work out that way; there is a ceiling to what mastering is going to do for your project. Start with high standards for every detail, and the end result after mastering will be something you can be very proud of.

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