Anyway, once the tapes have been secured in good condition you then have to make sure that the room in which you'll be working is set up for 5.1. Otherwise, if it's not, you have to make sure that you have enough buses and whatever box they want to use to monitor 5.1, along with enough automation faders and the whole nine yards. After that, it comes down to what medium you store it on—originally it was D-88s with 20-bit convertors, whereas during the past two and a half years everything with DTS has been done 24-bit —and then there's the outboard gear.

I mean, the good news is that we're not using half as much compression now—we're only using it on a kick drum or a bass or a vocal if necessary, and we're doing so as an effect of that instrument, not for popping things into perspective through stereo imaging. So, it depends on the project in terms of how big it is and how many tracks are available, but it's good to have at least a 48-input board, because you're going to want effects returns and have extra faders to do sweeping if your board is not set up for it. On the other hand, there are going to be a lot of small places popping up that advertise surround, but you've got to make sure that they really have the right outboard gear and are prep'd correctly.

How do engineers generally arrive at their choices of monitoring system and configuration? what are the common mistakes and misconceptions?

Well, it's really interesting. For instance, Don Smith engineers for Tom Petty and The Rolling Stones, and I went with him and Mike Campbell to do a 5.1 mix of Mike's own material at Cherokee Studios. They have these sort of mid-range monitors—not soffited big speakers but free-standing Klipsch floor speakers —and the room is kind of narrow, and I couldn't tell what the heck was going on in there. I encoded the stuff, we played it back, and the level was down on one side and a number of things were wrong. The encoding was an input-throughput process and we hadn't level-changed anything, so for Mike that room clearly represented a false perception in terms of the speakers. They therefore went to another room in North Hollywood which had near-field monitors and all of a sudden it made sense to him.

So, every engineer has his own particular monitor. For instance, I've noticed that the Genelec 1031s or 1032s are beautiful-sounding speakers for playback, yet when people mix on them it sounds so glorified

that they miss some of the details because they didn't work that area. Some guys are still using NS10s because they like the subwoofer crossing over 85 or 100 cycles down, and then there are other guys who are using these KRK Exposé 8s, Al Schmitt is using his Master Lab Tannoys. So, what I've found is that the speakers that these engineers are used to using in stereo suit them best in 5.1 with a decent subwoofer. That's really the trick. I still think there's no substitute for near-field monitoring in this format. You can't use the big soffited speakers. If you want to A-B to them to get a feel for them, that's one thing, but to me it's really a danger to try to mix everything on big speakers. You lose all of the perception of depth.

Is it best to have a preconceived idea of sound placement and soundfield, or does experimentation yield the best results?

The straightest answer is that every song dictates what's going to happen. Like when I listened to Sheryl Crow's album [*The Globe Sessions*], at the beginning of the song 'Something More Than Nothing' there are these great ambient tracks going on, and then a little drum rhythm comes in, the piano sort of trickles a bit and her voice is real light. Well, in my head I can hear all of the ambient stuff floating around the back sidefields in the mix. Most of these songs I can hear where they're going.

Producer-engineer Chuck Ainley (left) relates his adventures in surround mixing, as Rory Kaplan listens intently at the Pro Sound News US conference