

AES Boston Section Newsletter

AUDIO ENGINEERING SOCIETY

MAY 1999

Digital audio post-production on display during April meeting at Soundmirror

By E. BRAD MEYER

Recording engineer John Newton welcomed the BAES to his Soundmirror facility in Jamaica Plain on April 14, 1999. As he explained, Soundmirror specializes in the location recording and post-production of acoustic music. While classical record companies were his largest clients ten years ago, Soundmirror now tends to contract with orchestras and groups who must promote their own recordings to the public.

As Newton observed, these new clients generally have to be educated about the business. "We can make great recordings, but we certainly can't sell them," he said.

During this evening visit, BAES members rotated among presenta-

tions in three separate studios. To begin, engineer Bill Winn offered an introduction to "mixing for picture" in a room equipped with a Yamaha O2R and a Lexicon Opus.

Studios at Soundmirror are linked with digital audio and time code, while a machine room on the lower level holds all the noisy transports. Winn's demo mix of a live concert video originated on 16-bit multitrack and was mixed and edited in the digital domain at 24-bit resolution.

On one edit, a singer's opening remark (over a keyboard vamp) had to segue to the third verse of the song, which was in a new key. No problem: thanks to the multitrack source, Winn was able to select the keyboard intro to the third verse and placed it under the original speech.

In another tricky fix, a cable failure on a kick-drum mike left only a high-frequency

click on the track. The click was used to trigger a kick-drum sound from a drum machine, and the mix was saved.

Winn also described mixing an abortion debate with one side panned right and the other left (he didn't say which). Complaints of unfairness from regional audiences revealed that many affiliate stations were broadcasting in mono, using just the left or right feed from the network.

Engineer Jeff Baust greeted guests in the editing suite, which was newly equipped with a pair of B&W 801 Nautilus loudspeakers. (He explained that he was still experimenting with placement and amplification for the speakers.)

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**Next Meeting:
Tuesday, May 11**

A psychometric approach to subjective audio evaluation

By DAVID MOULTON

We all use terms like "bright," "fat," "warm," "harsh" and so on to describe the perceived quality of the audio devices we listen to for fun and profit. But are these terms meaningful, or are they simply code-words for "I like it," or "I think it sounds bad"?

If we are going to use such subjective terms in the design process for new equipment, it is important to consider whether these terms have meaning for the general population. Are these qualitative definitions reliable and predictable? Do the connotations change as a function of audio experience, gender, age and economic status?

Obviously, these questions must be answered if we are to seek a correlation between subjective evaluations and the physical and electronic be-

Location: Newman Auditorium
GTE (formerly BBN)
70 Fawcett St.
Cambridge, MA

Off Concord Ave., near the
Fresh Pond Shopping Center and
the Alewife T-Station.

Reception: 6:30 p.m.
Meeting: 7:00 p.m.

havior of audio devices.

Using techniques drawn from the field of intelligence testing, Dr. Mark Moulton has developed novel methods for systematically assessing the gestalt meaning of subjective terms. As part of his research, Mark is actively developing variants of the Rasch Model for a broad array of applications ranging from psychological testing to

the analysis of economic phenomena to the audio industry.

Mark and I will present data at this meeting that is drawn from two related studies (conducted by Eric Reuter and Ben Findley of Worcester Polytechnic Institute) in which eight different microphones were compared using a variety of subjective terms to characterize those microphones.

Among our preliminary findings is the result that some terms do seem to have a gestalt meaning that is consistent across the population. And yes, there may be a correlation with physical parameters as well.

I hope you can join us for this final BAES meeting of the season.

Editor's note: David Moulton is an active recording engineer, teacher and author living in Groton, MA. His son, Mark Moulton, is a psychometrician living in San Jose, CA.

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Mastering: the art is in the details

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Baust's case study was a recent Boston Symphony premiere of a work by Henri Dutilleux that was recorded in concert on a Thursday and Friday. Baust completed 79 edits Friday night, played the tape to conductor Seiji Ozawa the next day and shipped the master to Germany at 5 p.m. that afternoon. The CD was available in Paris stores four days later, just before the work's European debut.

As he explained, a typical full-length classical CD contains between 300 and 1,000 edits, which can be completed in 12 to 15 hours if things go well. Here, too, multitrack editing is useful in the event that projects require mixing or re-mixing after the music is assembled.

Engineer Mark Donahue described the final stages of post-production in the mastering room next door.

"Everything goes through this room on its way out the door. It's not that it sounds the same as other systems, but that the judgments we make in here translate well [to the outside world]," he explained.

Like the other presenters, Donahue

monitors at very modest levels. "We work long hours here," he noted.

A case in point was mastering a troubled orchestral recording made in a hall plagued by HVAC noise. The original (un-named) engineer used the 80-Hz high-pass filters on a Mackie console—an unfortunate choice for a Mahler symphony.

Donahue demonstrated the restorative effects of digital equalization and reverb. The source tape was also plagued by a drifting DC offset, which created big clicks at many edit points. Donahue was able to recreate local crossfades to mitigate the effect.

The mastering presentation concluded with a comparison of several 24-to-16 bit requantizing and noise-shaping processors, including the HDCD system, which Donahue favors for many projects partly because he likes its dither and partly because any unauthorized processing at the pressing plant removes the low-bit coding. "We stick the [finished] CD in the player here, and if the blue HDCD light doesn't go on, we know something's been done to it."



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