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**SPECIAL**  
**AES**  
**SHOW EDITION**

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### INDUSTRY NEWS AND DEVELOPMENTS

#### By Vance Dickason AES News

The 108<sup>th</sup> AES Convention will be held at the Palais de Congress, February 19–22, 2000, Paris, France. Paper abstracts were due September 1, 1999.

The 107<sup>th</sup> convention, being held at the Jacob Javits Convention Center in NYC on September 24–27, will have a number of interesting papers presented. The following papers should be of interest to those in this industry:

- The Complex Loudspeaker-Room Interface—Mapp, Azima, and Gontcharov

**This 12" subwoofer, the HT300Z manufactured by Audax, is evaluated on Vance Dickason's test bench this month (p. 10).**

- A New Approach to Waveguides—Di Cola, Doldi, and Furlan
- Measurement of Large-Signal Parameters of Electrodynamic Transducers—Wolfgang Klippel
- Loudspeakers on Damped Pipes, Part 1: Modeling and Testing; Part 2: Behavior—George Augspurger
- Symmetrical Loudspeaker Band-Pass Systems of Eighth Order with Active Filter—Dobrucki and Marusiak
- The Scalability of the Distributed Mode Loudspeaker as Causes of Nonlinearity—Graham Bank
- Closed and Vented Loudspeaker Enclosures as Causes of



## SPOTLIGHT

### NSCA '99

By Rob Baum

While the NSCA show was not quite as exciting as the lightning storms I passed over on the way home, I saw a lot of hot stuff. Nashville is a decent place for the show: good weather (mostly), reasonable unions, and inexpensive hotel rooms (especially outside of the Opryland Show Hotel). The Opryland Hotel gives you the feeling you are in the Twilight Zone, or the Truman Show, never to find your way out. But still quite a contrast from NAMM's choice of downtown LA. Infocomm and the NSCA don't seem to be at each other's throats anymore, fighting for the same exhibitors. NSCA is still an audio-first show.

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#### Trendy

The trend of lighter weight, more compact, cooler operation, and higher power in amplifiers continues. The guts of the common power amp has really changed over the last few years with switching power supplies and high-efficiency class G, H, D, and now T operation. Class T? This is a “smart” switching amp technology that adaptively shifts its clock to minimize some of the anomalies of “digital” amplifiers. Developed by Tripath, many of the amplifier guys I talked to mentioned this new power module as something they were thinking about using soon.

QSC introduced a touring sound amplifier technology to its CX contractor series amplifiers at the show. This is a combination of Powerwave power supply and a multi-voltage rail class G/H output stage, not to mention a dataport connector for its QSCControl.

Computer control is moving along; for instance, Crown's IQ systems still have a strong group of adherents, but new systems such as Corbanet (QSCControl II, Peavey, and many others) have established themselves. Peavey's successful MediaMatrix product line, interoperable with Corbanet, has expanded with their demo room showing a half dozen application-specific stations (with delimited control functions). This is not due to the limitations of the system, but the intellect (or lack of) of the operator—very smart. Also very smart is the consensus on the partnership between Crest and Peavey. IED, who has kept a low profile for a while, introduced its 3200 series. Internet-based control systems are

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emerging with schemes announced by Creston "e-control" and Bogen.

A few years ago, while MediaLink was taking most of the industry for a ride, I suggested LonWorks. At the time, Echeleon, the developer of LonWorks, had gone out of its way to help the audio industry, but I found it hard to dispute the company's conclusion that it was against the interest of a number of strong forces in our business to have an industry (about 1500 companies offer LonWorks products for climate control, security, elevator controls, and so on); therefore, only recently making inroads in audio. The AMX Phast uses LonWorks chips, and Meyer, Apogee Sound, and Renkus-Heinz have standardized on interoperable LonWorks control systems. TOA now offers a LonWorks product in Japan, and a number of other commercial sound and sound reinforcement brands will be announcing LonWorks products this year.

Yet what about the forward-looking sound contractors that took the bait in years gone by and now have orphan computer control installations? At the show, Alex Rossner mentioned a landmark facility in which he was seduced into using a computer control system. Developed by one firm and marketed by an industry giant, the system is now about six years old and tech support and spare parts are nonexistent. Both the developer and the big-time brand were at the show with their latest brainstorm, but basically told Alex to get lost when it came to their last disaster. Neither firm bothered to squirrel away critical non-standard components (like

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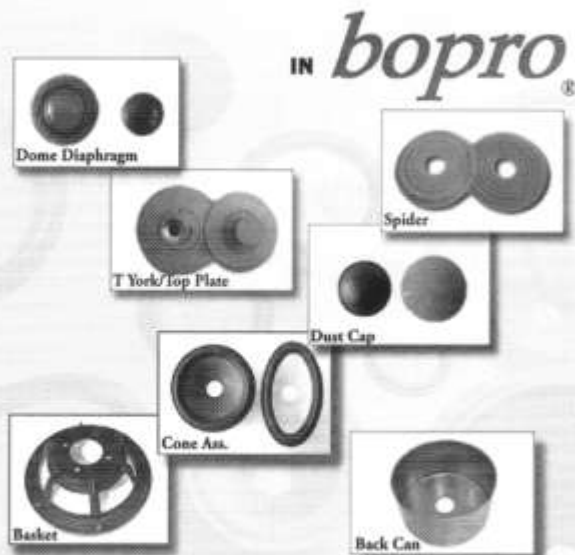
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keypads and other gizmos that wear out), but instead ran production until inventory was gone. So why should anyone trust what they say and do on their current products?

### Speakers Displayed

Speaking of notoriety, flat diaphragm speakers are getting a lot of attention at engineering design labs these days. Stage Accompany scaled up a Philip's studio monitor ribbon tweeter a few years back and has been using this impressive neodymium magnet transducer/waveguide for front-of-house sound reinforcement speaker systems. At the show they also displayed stage monitors, fill speakers, and cinema speakers using variants of their ribbon. One version I looked at recently had a forced cooling system!

Another ribbon diaphragm speaker system was shown by Radia Pro Systems. These are narrow assemblies (less than 5" wide) and are available in various lengths (2' up to 6' long!). You can select the length for both power handling and pattern control criteria.

For commercial ceiling speaker applications, such as background/foreground, emergency, paging, talk back, and masking, there was a lot of trick stuff. On the flat speaker front, the Wharfedale LoudPanel, using NXT Technology, was at the show. A thin panel which just drops into the ceiling grid is used with a tiny neodymium speaker motor coupled to this panel. Great idea, but better efficiency and power handling is still needed.

Sound Advance, the old BES/BEST guys, displayed their ceiling panels at the show, and while the construction is more complex than NXT, these products are more mature and have been used successfully for decades. Quam has taken the straightforward approach of integrating a conventional speaker onto a square frame that drops directly into the ceiling grid. The facing is a perf metal grille rather than a fake ceiling tile look.

Years ago, Harris worked with Motorola to develop a surface-mount plastic ceiling speaker that did not require holes cut in the tile, and no transformer. Installation was instantaneous—the speaker terminals pierced the ceiling tile and there you were. Well, it seemed like a great idea, but the Motorola piezo speaker could not make it below 500Hz and sounded tinny. Motorola eventually gave up that target. Harris reworked the design and used a conventional

### Dual Meetings

ALMA (Loudspeaker Manufacturers Association) also held its meeting during the NSCA. The organization is now open to people in the speaker industry regardless of geographical considerations. A combination of tabletop exhibits and technical talks all focused on, of course, loudspeakers. Discussions included new materials, design innovations, industry standards, and job hunting. In particular, presentations were given on a half dozen different speaker test systems. For further info, check out their website, [www.alma.org](http://www.alma.org).

speaker, but that did not stick either, at least outside of telephone paging.

I must have suggested revising this flawed stroke of genius to half-a-dozen commercial sound companies with no takers, but at the NSCA Bogen introduced the Easy Install Speaker. Less than 10" in diameter and protruding from the ceiling 3", it goes down to 125Hz, good enough for essentially all ceiling speaker applications. Installation is claimed at one minute, but I would accept even double that amount!

While on the topic of neat weird science, Neil Shaw and I stumbled into Inphoson's demo room where a Walsh driver was displayed. What's that? Back in the early 1970s I had an audio factory in Brooklyn, and just down the block was Ohm Acoustics. Ohm's main thing was home theater speakers that featured a unique transducer based on the work of the mathematician Lincoln Walsh. Instead of the speaker facing "forward," the magnetic structure faced upward, and a long, narrow, angled cone faced downward into the enclosure. The sound passed from the voice coil and then the apex of the cone and outward off the back of the cone into the room for omni sound radiation.

Now German Physiks DDD, in Germany, is producing a modern-day version for audiophiles, and Inphoson is distributing a special speaker system based on this device for teleconferencing. The pattern is 360° in the horizontal plane, and more directional in the vertical plane. One unit only would provide good coverage for most spaces. A combination of smooth response and the atypical radiation pattern resulted in excellent feedback immunity, and at \$3000 for the unit, most clients would be immune to this technology. Nice sound, though.

#### Sound-Reinforcement Boxes

No shortage of sound-reinforcement speaker boxes at the show. NEXO of France is back in the US with a number of sales offices. I took a listen and this is a nice, but pricey product. There obviously is a trend of competent European and South American speaker manufacturers who have gotten a big share of their own domestic market and now have come to the US to play in the big league. Good luck—we play rough here!

Although Klipsch began speaker production in the late 1940s, its first serious effort at professional speakers came decades later when Don Keele (of EV fame) spent a stint there. A few years back Klipsch licensed their name for sound-reinforcement speakers, but now this effort is back under the same roof. So far, they have earned a big chunk of the movie theater business.

#### Last but Not Least

Moving out of the audio bandwidth, Samson showed its UHF Synth 32, a high-end wireless mike system at a mid-range price. In talking to these fellows, I learned that they are expanding beyond the MI product line into professional-grade products, yet offering the value of the cut-throat MI market.

*Rob Baum is an independent consultant working with Menlo Scientific, Ltd.*

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