STUDIO SENSE

by **Stephen Murphy**

Lectrosonics and the Lavs of Doom

The nation's capitol, earlier this year.

Since we last left our hero, MurphMan had resumed his guise as hard-working, modest and ruggedly handsome freelance engineer/*PAR* Technical Editor Steve Murphy. Toiling away without complaint in the dank catacombs deep below the National Press Club, Murphy is once again accosted by his Draconian boss, J. Jonah Rothman.

As the boss exits a memo dislodgesfrom the impossibly tall stack just deposited on the desk and drifts to Murphy's feet, where he has just enough time to scan its contents before it is spirited off by an oversized rodent.

"Holy TPS-Report!" Murphy exclaims. "Arch-villain Open Mike and his 15 henchmen — The Lavs of Doom — are planning to attack the club!"

Slumping back onto what passes for his desk chair (an empty spool of multi-core cable and some bubble wrap), mild-mannered Murphy comes to the realization that protecting the viewing public from Open Mike and the Lavs of Doom is too much for his super-powered alter ego MurphMan to handle on his own. The time has come to use the LastResort-O signaling device to call in help — help that can only come from the all-powerful Lectro!

THE BACK STORY

The above is completely true. Well, for the most part. At times…

OK, so I exaggerated a bit: the deep, dank catacomb is really the spiffy NPC Broadcast Operations Center, which is not underground at all, but rather on the fourth floor of the National Press Building. Oh, and my boss is not named J. Jonah Rothman — it's Howard and he's nowhere near as Draconian as depicted.

But Open Mic and the 15 Lavs of Doom did come to the press club, albeit in the form of an hour-long national public television broadcast called *A Public Voice*. The forum-style show, now in its 16th year, is taped in the National Press Club's storied ballroom on the 13th floor — where over 40 years ago Nikita Khrushchev said he would "bury us" and years later Louis Armstrong made his last live recording.

Emmy-winning journalist Frank Sesno hosted this year's *A Public Voice*, which explored the topics of energy sources and consumption. The forum included an 11-member panel made up of nationally known politicians, journalists, policy analysts and policy makers, plus a small live audience. The broadcast taping is the culmination of several public National Issues Forums (see *www.nifi.org*) held across the country. Instead of the usual combative banter, the panel members are instead asked to watch numerous video taped excerpts
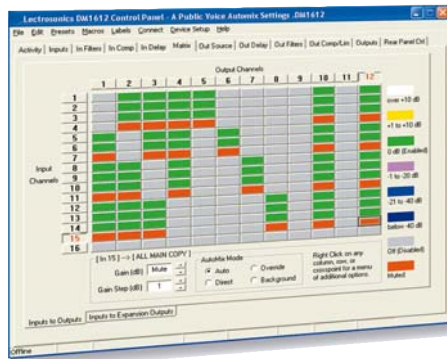
Lectrosonics LecNet2 software

from the earlier public forums and respond to the challenging and often-poignant questions and comments from the local attendees.

THE SET UP

The guest panel was set up in an "in the round" style, with four low risers arranged in a large diamond for the panel members, and a large open space (approximately 35 x 35 feet) in the middle where the host could stalk about. The live audience sat in rows fanning out from the panel's risers. Speaking of cameras, the event was taped from a switched six-camera feed, with a studio camera in each of the four corners of the large diamond, another studio camera for audience shots, and an ENG camera in the east balcony (which was also home to my temporary "control room" setup).

Once I retrieved the production outline from the, uh, large rodent, I went to work assessing the audio requirements of the event. Each of the four risers were set up to accommo-

date three panel members, though one of the expected 12 dropped shortly before the shoot, leaving one of the risers with just two panel members.

I slated a Sony ECM-88 wired lavalier for each of the panel members, plus a backup 88 for each riser. Being mobile, the host would require a top-notch wireless microphone solution: one that can suffer the potential slings and arrows of outrageous interference without a glitch. The DC area is a tri-state confluence of broadcast TV stations, secretive government agencies (and all that that implies), and millions of Blackberry/TDMA devices, most of which seem to find their way to the press club on a regular basis. This was definitely a job for Lectro!

I arranged for a redundant set of two Lectrosonics LM Digital Hybrid Wireless transmitters, two Lectro M152 omni lavs, and my new favorite receiver, the Venue Digital Hybrid modular system.

Next came the issue of sound reinforcement, an aspect of audio production not oft called for in my typical studio and postproduction environs. The live audience, fanning out from the backside of each riser, would need to hear the host, the panel, two handheld wireless Q&A mics and the video playback segments. The panel members on each riser needed to hear the host, the panel minus their own mics, the Q&A and the video playback. The host needed to hear everything and everybody (as did I on my local monitors). The broadcast mix needed all live mics returned to the fourth floor control room, minus the video playback audio they were sending up to me.

THE ENDEAVOR...

Let's review a basic audio formula: $OM(n) + SR(SpE) = UFB(F/B!)$, where $OM(n)$ is a large number of Open Microphones, where $SR(SpE)$ denotes "Sound Reinforcement Speakers Everywhere", and where the sum of the equation is…well, let's just say the part in the parentheses stands for "Feedback".

For the small live audience, I opted for a powered JBL SRX712s placed wedge style on the outside of each riser facing outwards. Monitoring for the members of the panel was provided via a single Galaxy Hot Spot placed on the back of each riser, with its back to the JBL pointing at the back of the chairs. Together with fellow engineer David "One Fader" Sless (who, during the show, potted up the tape roll feed to my mixer from the comfort of the fourth floor control room), I experimented

with front firing placement of the Hot Spots, but found the plush chairs and warm bodies between the mics and the Hot Spot provided good monitoring with better iso.

The tape playback, Q&A mics and redundant host lavs would pose no above-the-ordinary trouble. The challenge I was facing was the 11 active and four backup wired lavs. Unlike other high lav count broadcasts on which I work — such as the *Kalb Report*, where the host addresses each guest by name, giving me time to pot up — each member of this panel was free to chime in at any time, and in any combination. In other words, there was no predicting and no way I could get away with 11 mics worth of room noise, handling noise and other noises emanating from the panel.

...AND THE RESOLUTION

Coming to my rescue, with superhuman aplomb, was Lectrosonics and its DM1612 digital audio processor. Some may be tempted to call the DM an automixer, but it is more than that — much more. But let me take a step back.

I'll be honest. Never in my long(ish) career have I had occasion to use an automixer. It's not that I have it in for them; they've just never

part of the world in which I've operated (studio music production and video post production). It was a review of a Lectro DM processor in this very magazine a few years back that led me to revisit the device for this application.

Much to my delight, the DM1612 was ideally suited for the job. Without getting bogged down in review-like detail (there is a perfectly functional review available in *PAR* December 2006) it turned out that this was exactly the type of use for which the 16-input, 12-output device was produced. The principal reason the DM processors work so well is that, in each mix, the output is never greater than the equivalent of one mic's signal or noise floor. Though impossibly complex in its internal processing, for the end user the result is simple, smart and incredibly effective.

Through the miracle of the 1612, a laptop, a USB cable and LecNet2 software I was able to design a system that took in all 11 active and four spare lavs — level-adjusted and lightly compressed for each talent — and produce numerous discrete automixed outputs that formed the basis of riser monitor mixes (columns 1-4 in the LecNet2 matrix graphic), four iso mixes for my main mix per-riser con-

trol (columns 5-8) and two full-lav mixes (main and safety, columns 10 and 12).

All of the DM1612 outputs in use were routed to the line inputs of an Allen & Heath GL-2400 console, where I folded in tape roll audio, Q&A mics and the host's Lectro lavs to create all of the respective mixes required of the broadcast taping and the house monitoring.

Though I created the four per-riser iso mixes for fall-back control at the analog mixer, I am happy to report that those mixes went unused, and with the exception of the mix-minus subs sent to the respective Hot Spots, all other mixes (house, monitor, mults, broadcast) used the main "all lavs" single-fader mix. Additional credit needs go to Lectro for the DM's per-input feedback suppression super powers, where anti-feedback adjustments affect only the problem channel's signal, not the overall mix EQ!

So thank you Lectro, from this mild-mannered but very picky engineer. Open Mic and the 15 Lavs of Doom were relegated to Singlefader Land, where they could do no more harm than a single mic. And the public was once again safe in The Nation's Capitol, and beyonnnnddddd…!!!