

APRIL 2009 Vol. 7 No. 7

A Man of Many Hats



When everyone in the band is a record producer, you need chops to get their respect and cooperation. Gordon Mack has all that and a bag of chips in his gig with R&B crooner John Legend. Oh, and did we mention he is also the PM? See page 18 for the dirty details.

No Squints Allowed: ProAudioSpace Debuts

LAS VEGAS — Social networking is all the rage as you must know if you have an email account and get the daily FaceBook/LinkedIn/Plaxo connection requests. And those services are great for staying in touch with the suits of the world. But there are times when crew just wants to be crew and the mainstream networks are a little staid for that.

"I had been hipped to CrewSpace a while ago and am a member," said Bill Evans, FOH editor. "On a whim, I did a search of the member profiles for the words 'audio' or

continued on page 6

A Mess of New Audio Tech

By Bill Evans

FRANKFURT, Germany — The Prolight+Sound Expo and Musikmesse opened in Frankfurt on April 1 and there was enough new audio tech being announced that one could have been excused for thinking it was all just an elaborate April Fool's joke. In addition to the expected new mics, consoles and speakers, there were at least four announcements centered on digital audio platforms, at least one of which has the potential for long-term, major impact on the way we do our jobs as live audio providers and system installers.

First up, the marriage of Meyer and LCS a couple of years back is bearing fruit with the announcement of D-Mitri, which combines LCS total audio show control with the Constellation electroacoustic architecture, and jacks it all up a notch or two with Gigabit networking, enhanced configuration flexibility and mixing and routing of matrices up to 576 x 576 channels via proprietary computer software, or custom third-party programs, using standard Open Sound Control (OSC) messages.

Components of the system are slated to begin shipping in fall of 2009.

As long as we are in Germany anyway, let's take a look at the newest from Bosch, which launched version 2.0 of IRIS-Net. It offers control of everything from the mic to the speaker as long as it is Bosch/EV/Midas/KT stuff—much like the system a certain American company has been touting for a couple of years.

Speaking of which, over in Harman Land they demoed end-to-end Ethernet AV over three product lines—BSS, dbx and Crown. Sounds a bit like HiQNet for the install market.

Not to be left out, Aviom showed a self-contained Pro64 Network Control Application that allows for the design of sophisticated networks without PC-based programming.

All that and a bunch of actual physical gear, too. For more on the less ethereal stuff, see our coverage starting on page 16.

Shure Files for Petition for Reconsideration on White Spaces

WASHINGTON DC — It's been how long and we are still talking about this crap?

Bottom line is that while we are all trying to move ahead assuming that pro audio will be blocked out of the 700Mhz band for wireless mics, the FCC has not yet issued a final ruling on the subject.

Among a bunch of others, Shure submitted its final petition to the FCC on this matter last week. The petition is dense with legalize but it comes down to this:

Whether the Commission's new "white spaces" rules successfully protect incumbent operations, including particularly wireless microphone operations, in this challenging spectrum

continued on page 6

One Little Wedge Two Little Wedges Three Little Wedges...



Sometimes when the phone rings you should just ignore it. When a local production company called and said they were in possession of a set of new EAW MicroWedges, a set of new Radian APEX boxes and had a passel of original MicroWedges and that we oughta hook 'em all up and do a head-to-head (or box to box...) comparison, for some stupid reason we found ourselves agreeing — even though the results were bound to piss off everyone to some degree. We should have remembered the mantra we have lived by lo these many years: The only ones who get shot in a shootout are, well, us. But we did the deed anyway. If you want to check out our take on the three sets of stage wedges, see the first and likely only shootout we will ever do on page 22.

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Dean Do

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CONTENTS

APRIL 2009,
Vol. 7.7

Showtime



14

Sound Art Canada helped make the Canadian Aboriginal Achievement Awards in Winnipeg an event to remember.

Regional Slants



30

Audio East Inc. owner/operator Daniel Bouchard branched out from audio — reluctantly — to keep his clients happy.

Features

16 New Gear: Musikmesse Report

The economy takes a dive, and audio innovation soars. Go figure.

18 FOH Interview

Gordon Mack, FOH engineer and production manager for John Legend's tour, steals a few moments from his busy schedule to speak to *FOH*.

20 Buyers Guide

A look at system controllers.

22 Road Test

The new variants on the classic MicroWedge just beg for a shootout, and we just can't resist. Here's the semi-scientific *FOH* report.

24 Road Test

Selling houses of worship on the virtues of lav mics can be a challenge. The Da-Cappo DA04 can help.

26 Vital Stats

Did you know that Chuck Surack, president and founder of Sweetwater, is a helicopter pilot and plays sax in a band on weekends? Find out more on page 26.

28 In the Trenches

David Moncrieffe II, system engineer and crew chief with Clair, and Tony Sandoval, owner/operator of T.S. Productions.

Columns

32 The Biz

Freight forwarding companies are facing complexities that are starting to rival — and even exceed — the challenges they faced in the wake of 9/11.

34 Theory and Practice

We go back to basics — and does it get any more basic than this? — with a look at power distro connectors.

36 FOH at Large

Trust no one — unless they're an audio engineer. Why? Well, for starters, you can't fake good sound.

Departments

4 Editor's Note

5 News

11 International News

14 Showtime

16 New Gear

FROM THE GROUND UP

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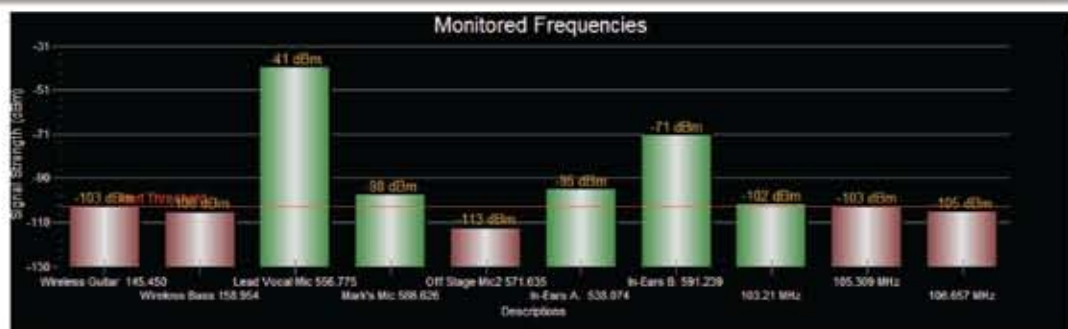
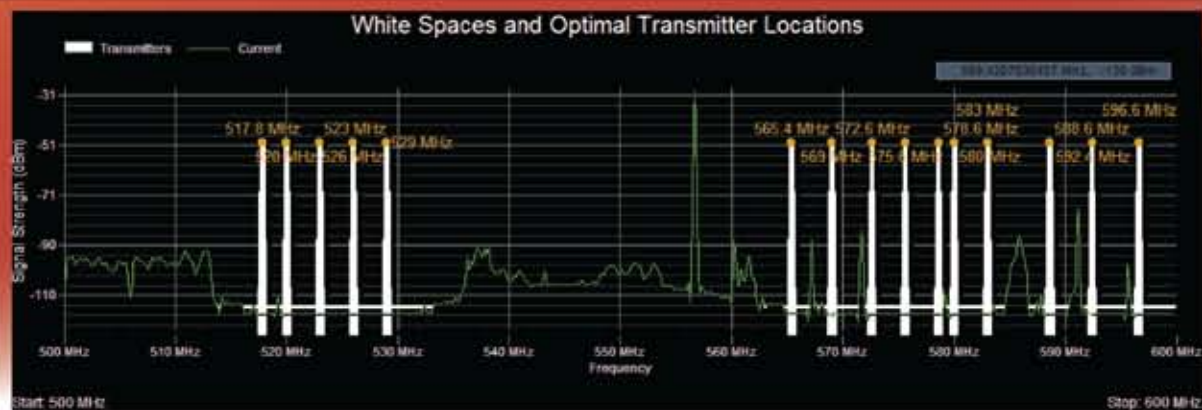
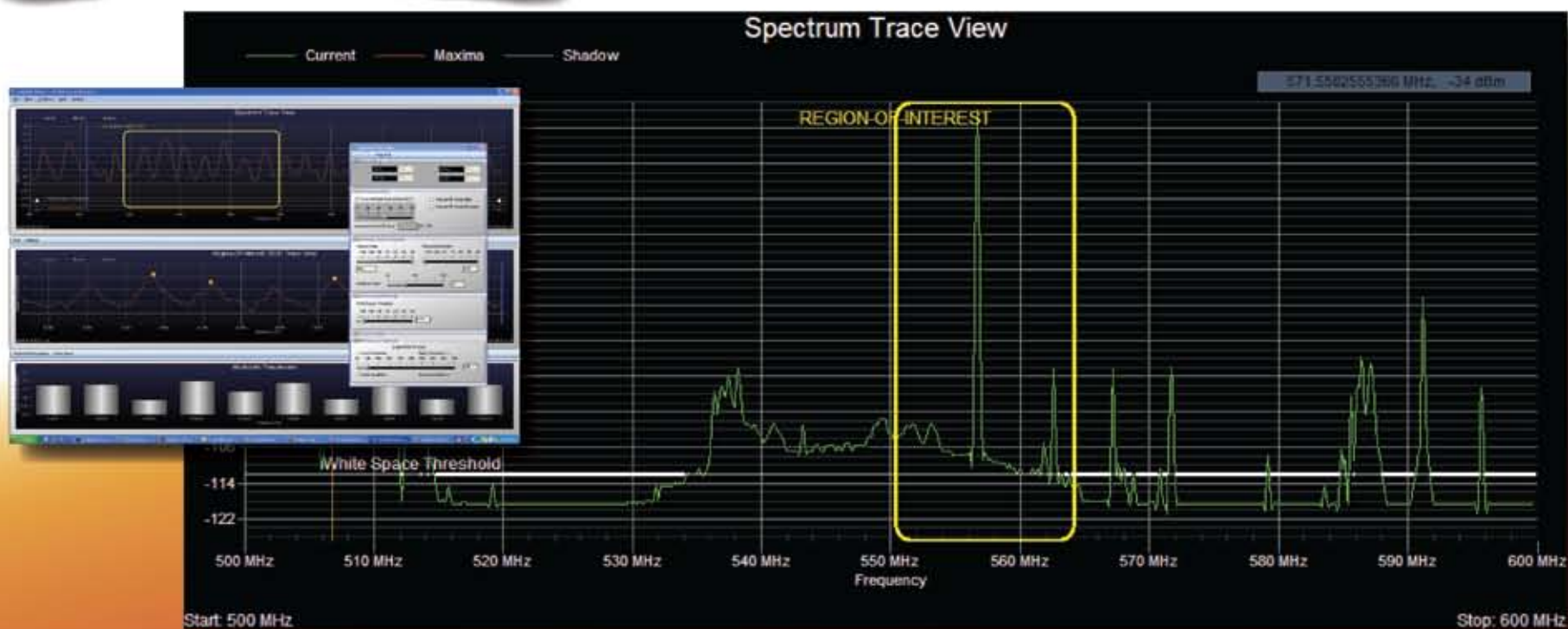
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"This Industry Is Too Small To F#%& Anyone Over"

A good friend of mine said these words to me a couple of weeks ago. The "wazzup with you?" call had turned to some rumors of dirty deeds done dirt cheap in the live audio biz. Not gonna name any names or even give details on any situations. The idea here is not to call anyone out but to remind us all that in audio, as in life, what goes around comes around.

With the economy still sucking and gigs still canceling it is easy to see how

back at me. (When I know I am on the wrong side, I tend to avoid mirrors...) More to the whole biz point, when I have made the wrong decision for short-term gain, it has bitten me in the ass later every single time. And the few times I have given up that short term gain because it was not worth the "soul" cost I have—eventually—ended up with more than I would have had I made the wrong choice when it was offered.

Back when I was living in the L.A.

in the little market they both worked in. Note that this all went down in the midst of one of the cyclical downturns we see in the economy.

But being one of those "do the right thing guys," he didn't take that road. He stopped and remembered the times his competitor had bailed him out of a bad gig or subrented gear at below market rates for a low-budget gig. And when he got the inevitable calls asking for a quote from the competitions' clients, he gave the other guy a head's up phone call and at least gave him a shot at saving the gig. And his competition did not save all of them and, yes, some went to him.

That was a long time ago. In the end, the unfortunate fellow pulled out of his tailspin and is still around. His company is still small and he is still friends with the competition who would not pick him off when he was "low hanging fruit." The other guy's company has about tripled in size. He moved out of the garage years ago and has made a good living for himself and his family. The two guys who urged him to "go in for the kill" have been out of the business for years. I think they both ended up in sales...

But back to the beginning of this whole thing. Ours IS a small industry. Not so small that everyone knows everyone else, but close to it. I say it every time I go out to an event, a show or even an audio convention. I see the same faces, they may wear different hats than the last time I saw them but the faces are the same. Keep that incestuous nature of our business in mind and remember that people who have been given the shaft have very long memories and the clerk at the Bank of Karma keeps really good records. **FOH**

Ours is a small industry... people who have been given the shaft have very long memories, and the clerk at the Bank of Karma keeps really good records.

one might go to "extra lengths" to secure gigs and keep some cash flow happening. And any talk of what is and is not ethical when it comes to securing business is tough. I personally do not subscribe to the school of thought that embraces "situational ethics." It may be hopelessly passé, but I do believe in the concepts of right and wrong and I know that at least for me, I know when my actions fall on one side or the other of that line. I am not stupid enough to think that my actions always fall on the right side of that line but when they don't, I may make excuses and protest but I know in my gut that I am on the wrong side of the line.

When I stay on the right side of the line I get to look at myself in the mirror and not despise the person who looks

area and long before I was at the helm of FOH, I did some work with a couple of smaller sound companies of the "run out of the garage" variety. Both of the guys who ran the show were okay, and I liked them both a lot. And they stayed out of each other's way. This is not to say that they did not compete, but they did not stoop to poaching the other guy's gig, either.

At one point one of the two hit a real rough patch on a personal level—the kind of "rough patch" that would put the hurt to any of us. He started letting business slip and customers started to notice. A couple of guys from the other "shop" started to tell the owner that the time was ripe to swoop in and take all of the other guy's gigs, put him out of business and decrease competition

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2009 Parnellis to Include "IT" Awards

New "Indispensable Touring" Products To Be Honored in Four Categories

LAS VEGAS — Want to know what this year's "IT" is? So do we.

The Parnelli Board of Advisor is announcing an important addition to the popular Parnelli Awards. This year, for the first time ever, four new products will receive a special Parnelli Award, the "IT Award" in recognition of their contribution to the live event industry.

The nomination process is open to all readers of *PLSN* and *FOH* magazines, live event professionals and live event product manufacturers. The **nomination process will start July 15 and end August 31**. The Parnelli Board will tabulate the votes and then offer a

total of 20 of the top nominees, five each in these four categories: IT Audio, IT Lighting, IT Projection and IT Staging/Rigging.

Everyone is encouraged to go to parnelliawards.com/nominate and nominate his or her favorite new "Indispensable Technology" product, starting on July 15.

The ballot of nominees will be featured in our October issues in our many media outlets. The winning product in each category will be chosen just like all other Parnelli winners — through a voting process. Only subscribers of *FOH* and *PLSN* magazines are eligible to vote. They must put in their subscription code to

vote thus ensuring the integrity of the award. Voting for the final winners will end October 31.

"Every year a dizzying array of great products are put on the market, all designed to help live event professionals do their jobs even better," says Terry Lowe, *PLSN/FOH* publisher and Parnelli executive producer. "Our readers hear about these products first and foremost in our publications, so we wanted to give them the opportunity to tell us of all the products that came out in the past year, which are truly 'Indispensable Technology.'"

"We have been talking about a way to honor great technology without diluting the "people" focus of the Parnellis and the creation of the IT Awards as a separate entity with separate voting allows us to do just that," says Bill Evans, *FOH* editor. "Now we will be able to give props to our production brothers and sisters and highlight the technology that allows us to do great shows. Not too shabby."

Winners will be announced and awards presented at the 2009 Parnelli Awards being held November 20, 2009 in Orlando (in conjunction with LDI).

Lab.gruppen Names Larson its Next CEO

KUNGSBACKA, Sweden — Lab.gruppen named Ulf Larson as its next CEO, effective July 1. The time frame allows for a handover period from the company's current CEO, Tomas Lilja, who spent nine years at the company's helm.

"Ulf has many years of experience in senior management at Lab.gruppen," noted Anders Fauerskov, chairman of the board and CEO of Lab.gruppen's parent company, TC Group. "Most importantly, as far as the company's development is concerned, Larson has been heading up the business units developing the PLM Series Powered Loudspeaker Management systems and the new Lake LM 26 digital audio processor."

"After nine years as CEO of Lab.gruppen, I now have decided to take on a new challenge in the software industry," said Lilja. "It hasn't been an easy choice, but leading Lab.gruppen through several growth phases and the fact that many goals and visions have been accomplished and fulfilled have made me to desire to take on the new challenges of developing a smaller but potentially successful company once again. The difficult part of my decision is that I will miss my staff, customers and friends within the industry."

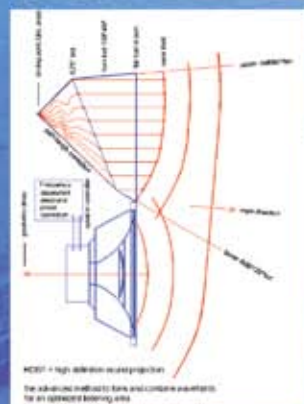
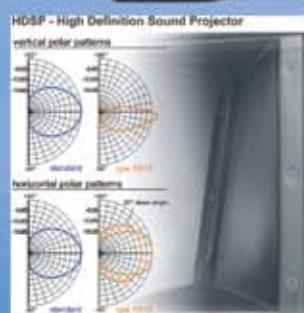
"I am honored by this appointment and am excited by the challenge of taking the company forward as we continue to expand sales in core and newly targeted markets," Larson said.

Rational Acoustics Gets SMAART

WHITINSVILLE, MA — EAW announced that Rational Acoustics has been given worldwide distribution of SMAART sound system measurement, optimization and control software, and will soon own SMAART outright.

Under the two-stage agreement between EAW and Rational Acoustics, all of the mechanics and infrastructure associated with the sales and distribution of SMAART are being modified. Sales of SMAART will now be conducted and supported by Rational Acoustics. Within six months, Rational Acoustics will purchase SMAART and assume responsibility of the management of the products at that time.

Rational Acoustics, founded in early 2008 by Jamie and Karen Anderson, Calvert Dayton and Adam Black, has been working with EAW for the past year, offering SMAART support, development and a training program. "It's a very friendly and synergistic relationship which has benefited both companies as well as the SMAART user community," said Karen Anderson, COO of Rational Acoustics and former director of marketing for EAW.



KS Audio Did it Again- A Brand New Invention

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Invention – HDSP High Definition Sound Projection

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120° nearfield + 60° degree farfield

The energy of the high frequency driver is created in a wave guide to produce a sound field with varying distances to a vertically bent line, meaning that the sound is radiated from the horn at 120° wide by a 20° vertical dispersion in the near field and at only 60° wide and a 15° vertical dispersion in the far field, with an overall 5° down-angle with no acoustical energy radiated above the top of the cabinet. The result is that all sound energy is directed in a bent wave front to point downwards towards the audience and not to the walls or the ceiling the signal is time aligned and phase corrected

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More than Just Car Speakers at 2009 Auto Shows

DETROIT — For this year's NAIAS show, both Audi and Volkswagen turned to the POOL Group of Emsdetten, Germany to coordinate the multimedia presentations for their booths, which included Meyer Sound systems featuring the new UPQ-1P loudspeaker.

The system for the Volkswagen booth included left, right and center pairs of UPQ-1P loudspeakers with four UPJ-1P VariO™ loudspeakers covering nearfill and eight UPA-1P loudspeakers for delay. Six 600-HP subwoofers provided low-frequency coverage.

During the press events preceding the public dates, the system was expanded with additional UPA-1P loudspeakers and 600-HP subwoofers, along with a Galileo™ loudspeaker management system with three Galileo 616 processors to provide system drive and processing.

"The client had specified that no large

speakers should be visible, which precluded our using any sort of line array," said Benjamin Stilleke, POOL Group's technical manager who handled the Volkswagen booth. "The highly focused coverage of the UPQ-1P loudspeakers provided us with the power and the focus necessary, without the need for a line array."

"The press events posed very different demands than the public days, and it was necessary to create two entirely different scenarios," Stilleke added. "The flexibility of the UPJs in particular was really helpful, enabling us to place the horns in vertical or horizontal orientations."

Johannes Roesel, POOL Group's technical manager, oversaw the sound design together with Christian Oeser for the Audi booth, employing a main system comprising three arrays of six M'elodie™ line array loudspeakers each, augmented by 22 UPA-1P loudspeakers placed

to provide even coverage in the booth area. Four 600-HP subwoofers provided bottom end for the main system, with ten UPM-1P loudspeakers covering the second floor catering area and seven UPQ-1P loudspeakers for delays.

The Audi booth also included a special display room, "The Heart of Audi," with a single 600-HP placed face down to simulate a heartbeat. A single UPA-1P loudspeaker provided this effect. A Galileo loudspeaker management system provided processing for the multichannel system during the press events.



The mandate at this year's NAIAS booth for Audi and Volkswagen was to be heard and not seen.

POOL Group and the Volkswagen Group reunited for the International Motor Show in Geneva in March and will do so again for Auto Shanghai in April.

No Squints Allowed: ProAudioSpace Debuts

continued from cover

'sound' and came up with only about 15% of the total membership. So we decided a totally audio-focused network was needed."

ProAudioSpace went live about a month ago and had signed on 1000 members in its first 50 hours.

"We started some groups and forum threads to get things going," said FOH Pub-

lisher Terry Lowe. "But these things do tend to take on a life of their own and both the breadth of the 'conversation' and level of activity have exceeded our most hopeful estimates. ProAudioSpace really does realize the potential of an online destination for audio pros. Instead of being a place where users are simply fed info they can get in many other places, ProAudioSpace members are sharing tips, asking questions and getting answers.

We are proud to be able to bring this kind of community building tool to the live event audio and theatrical install worlds."

If you have not joined, just go to www.ProAudioSpace.com/join and see what's happening. And watch for new stuff including live trade show coverage and some engineers who are brave enough to blog the tours they are on.

Shure Files for Petition for Reconsideration on White Spaces

continued from cover

environment is a matter determined by the specific details of the FCC's rules and whether the rules provide sufficient protection when actually implemented in real world environments. It is critical that the FCC's technical and operational rules — including pre-certification testing rules — "get it right" before mass produced equipment is pushed into the market.

Toward that end, Shure urged the Commission to impose rigorous certification testing, open to the public, on hybrid geolocation/sensing devices. Shure also sought reconsideration of the FCC decision to permit portable devices to operate on first adjacent channels. At a minimum, the FCC should reduce the allowable power of TV band device ("TVBD") operations on adjacent channels.

In order to prevent devastating interference to wireless microphones, Shure urged modification of several technical and behavioral rules:

- TVBDs must demonstrate that they maintain sensitivity to the -114 dBm level in the presence of strong signals on adjacent channels, a common scenario in real world operations
- In-service monitoring requirements should be revised to require rechecks every 10 seconds
- A 60 minute non-occupancy period should be adopted for TVBDs
- High power fixed TVBDs should be required to avoid a 2 kilometer protected zone around wireless microphones
- Geolocation databases should synchronize at least once an hour
- TVBDs should be required to access the database and confirm frequency availability in real-time or near real-time
- The period of time that TVBDs may continue operating after losing contact with the database should be reduced from 24 to 4 hours

Finally, Shure urged the FCC to make clear that TVBD manufacturers, TVBD users and database administrators may not pick and choose which wireless microphone operations to protect from TVBD interference based on microphone application, power level, license status or any other characteristic. Shure said that to do otherwise would abrogate the Commission's commitment in this proceeding to protect incumbents and harm an important and vital technology critical to many sectors contrary to the public interest.

Horizontal Dispersion Key to Upgrade At Ringgold Baptist Church

RINGGOLD, VA —With a history that dates back to 1876, Ringgold Baptist Church has a diverse congregation and a variety of ministries guided by Pastor Dr. Steve Ellis. The church chose Big Sound Productions to overhaul the sound reinforcement system in its sanctuary using a TrueLine X3i-P line array system from WorxAudio Technologies.

"The sanctuary at Ringgold Baptist Church is approximately 80 feet long by 45 feet wide, with a sheet rock ceiling at a height of 21 feet," said Chuck Eskey, owner of Big Sound Productions, who is pictured here with the installed gear. "The space provides fixed pew seating for approximately 300 people and worship services are fairly traditional in nature—with music provided by choral, piano, or organ performances. The stage/altar area faces into the length of the room.

"Speech intelligibility and the ability to accurately reproduce music were key considerations in the selection of the upgraded audio system," Eskey added. "Of equal importance, a clear line of sight to the stage from any seat in the sanctuary—free from visual obstructions caused by loudspeaker enclosures—was deemed essential. For this reason, I determined that a centrally-positioned line array system made the best choice for this space."

The TrueLineX3i-P line array, an "all-in-one" line array system incorporating three modules, each with a medium format, 1-inch exit compression driver that is paired with dual 8-inch cone transducers, is painted white to match the room's décor. The system uses three

high frequency drivers and six bass drivers.

In terms of performance, "the X3i-P turned out to be ideal for this sanctuary. The system has the throw to cover the entire room and its broad 160-degree horizontal dispersion could not be better for this space. No matter where you sit, sound quality is consistent, speech intelligibility is clear and natural, and the music reproduction characteristics of the system are very musical. With the front row of the congregation positioned approximately six feet from the edge of the stage, I was initially concerned about the volume up close. As it turns out, the level is well balanced from front to rear—without blasting those seated in the front rows."



Chuck Eskey, owner of Big Sound Productions, with the installed gear from WorxAudio Technologies.

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Does XLC-DVX with FIR-Drive have inherent problems?

Reply Reply All Forward Junk Print Delete

From: AMBIENT SOUND [mailto:skwilson@insightbb.com]

Date: Thursday, October 16, 2008 12:57 PM

To: DE.Carlson@Electro-Voice.com

Subject: new Electro-Voice line array has some inherent problems

Hi David,
It was great as always to see you guys again.

I think your new EV line array has some inherent problems.

I'll explain below:

- 1) The Inverse Square Law is, as it states, a law. This new system exhibits a total disregard for the very basic principal of the way sound should behave as the distance increases. Some people don't like loud music so they move further away from the sound source. This new system makes the music in back just as loud as it is in front.
- 2) Lobing. For years we have used the lobing from stacked systems as a personal EQ function by telling people who don't care for high-mids to move a foot to the left - or folks who love low-mids to take a few steps the other way. This new system doesn't allow for that feature. It seems all the listeners are forced to hear the same balanced full range frequency response. This could be a real problem down the road.
- 3) Coverage angle. It seems the coverage angle is so wide that you can't bury an off key vocal part or out of tune guitar hard right or hard left and have it "disappear" into the mix. In the old days this would ensure only a small fraction of the listening audience would be subjected to the offensive sounds. With this new 120 deg coverage angle the whole audience is forced to hear both sides of a true stereo mix.
- 4) Headroom. Some FOH mixers like to use amp clipping and mechanical speaker compression as artistic tools in their palette of mixing strategies. The enormous amount of headroom with this new system deprives them of those tools. The power amp power supply rails make a great limiter for live music - and best of all they are built in! No extra rack space is required for additional costly limiters.
- 5) Size. The PA just doesn't look as impressive to the audience with only a few amp racks on stage. We all know bigger is better and more is better. Believe that even before the show starts many in the audience will have pre-formed an opinion that this PA will just not "cut it".
- 6) Frequency response. This new rig just sounds "flat". It doesn't enhance the drum sound with huge midrange peaks like the old rigs did thus forcing us to decide where to boost or cut the channel strip to add warmth or fullness to an instrument, if needed. Do we really need more decisions to make during a live mix? And the house EQ! What should I do with my new expensive 31 band graphic and 6 band parametric? Just take them out of the rack and leave them home?

Take care my friend. Can't wait to see you again

--
Steve Wilson for Ambient Sound



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AES Opens Call For Paper Proposals

NEW YORK — In a continuing effort to extend the scope of AES Convention Technical Papers, Committee Chair Agnieszka Roginska and Papers Sessions Co-Chairs, Veronique Larcher and Steven Garrett have issued an open call to the professional audio community for technical papers proposals. The deadline for abstracts is June 5, 2009.

"The volume of Papers submissions is always high," Larcher said. "However, by casting our net to a wider segment of the industry and educational sector we hope to expand our program by adding worthwhile subjects which may not be on the universal radar."

"Meaningful papers can originate from

sources beyond traditional academia," Steven Garrett said. "Our goal is to cover as many categories and issues as possible and, to develop a singularly comprehensive and authoritative catalog."

"In addition to sharing knowledge and opening constructive dialogues on issues which impact on the professional audio community, presenting authors will have their papers included on the CD-ROM of the full Papers / Posters Program, and student members will be eligible for the Student Paper Award," said Roginska.

Papers are presented in two distinct formats — formal lectures before an audience of

50 to 250 attendees followed by brief Q&As, or as poster sessions, which are detailed presentations designed for greater interaction between the author and groups of 12 to 15 members.

Papers topics are open to the following categories: Applications in Audio; Audio Processing; Recording Production and Reproduction; Audio Equipment; Perception; Emerging Audio Technologies. For details on submission requirements visit www.aes.org/127th_authors.

The 127th Audio Engineering Society Convention will be held Oct. 9 – 12, 2009 at New York's Jacob Javits Convention Center.

Delta Music Institute Opens with Peavey Endowment

CLEVELAND, MS — Peavey Electronics has endowed a major musical-equipment grant totaling \$60,000 to support curricula at the Delta Music Institute, a center for interdisciplinary studies in the music and entertainment industries at Delta State University.

"The music of the Mississippi Delta has influenced countless musicians around the world, and it inspired my lifelong passion for making the tools that allow us to create music," said Hartley Peavey, founder and CEO of Meridian-based Peavey Electronics Corp. "I hope that this endowment will act as a bridge to link the rich musical legacy of the Delta region to the next generations of music professionals."

Music-industry veteran Tricia Walker, director of the Delta Music Institute, said that the Peavey endowment would bolster the program's live audio production

department, providing students with an opportunity to work with the latest sound reinforcement technology. Students in the Delta Music Institute demonstrated the gear during its grand opening celebration, held March 7 and 8 on the campus of Delta State University in Cleveland.

"We are very grateful to receive such generous support from Peavey Electronics," said Walker. "As one of the world's largest makers of musical equipment—not to mention a technology leader with more than 180 patents to its credit—Peavey stepped up with a complete sound-reinforcement package that will be instrumental in our students' success at the Delta Music Institute."

The endowment includes a sound-reinforcement system featuring the Peavey Versarray line-array loudspeaker system, the ribbon-loaded, high-fidelity sound system used on the 2008 and 2009 Rock-

star Energy Drink Mayhem Tours and the 2008 Tim McGraw Live Your Voice tour.

The endowment also includes a Peavey 32FX analog mixer with fully digital processing; Peavey QW and SP Series monitors; Peavey VSX loudspeaker management systems; Feedback Ferret processors with patented feedback elimination technology; assorted cabling; and an array of microphones that will pull double duty in the DMI's studio program.

"Building on the tradition of Mississippi's undeniable musical history, this gift will support the creative dreams of the next generation of young musicians," added Walker. "The Delta Music Institute, with its entrepreneurial and interdisciplinary approach to studying the music and entertainment industries, serves to advance the musical culture that is alive and well in Mississippi."

Christ's Church Crew Uses Digital Mixing System for Multiple Worship Styles



Nate Grella, Technical Director, and Jonathan Mac, Assistant Technical Director at Christ's Church with the iLive-144.

MASON, Ohio — The weekly services at Christ's Church have distinctly different styles — traditional, contemporary and blended. The church's 1,300-seat sanctuary was recently renovated with a new sound system to handle the contemporary and blended services, and a smaller chapel was built to handle the traditional service.

The church's leadership brought integrator Worship Resources in to develop an appropriate audio design, and Allen & Heath's iLive-144 digital mixing system was chosen to handle FOH and monitors for the larger sanctuary.

With a volunteer technical staff and a large musical presentation, it was essential that the new console be easy to learn and

use, according to Worship Resources owner Tom Rutledge.

"Previously, the sanctuary had an analog console," Rutledge said. "But with this change, Sunday mornings would now have two rehearsals back to back, then the services themselves. Going with an iLive digital console

was the best way to handle multiple styles of worship with fast changeovers."

After test-driving all the major models that fit their budget, the church selected the Allen & Heath iLive-144.

"We did demos of a lot of different boards, and the ease of learning on the iLive just jumped out at me," said Nate Grella, technical director at Christ's Church. "More than anything else, that's what sold us. It's so user friendly. You just select the channel you want and everything is right there for you. The touchscreen lets you see what's happening as you change EQ, for instance, which makes it easy to grasp. The iLive made training our volunteers a lot easier."

For the contemporary service, the wor-

ship band includes three electric keyboards, an acoustic piano, two or three acoustic guitars, two electrics and a bass guitar. The drumkit consumes 12 channels, while the 60-voice choir is handled by four overhead mics. The worship leader and a praise team of up to eight vocalists are all on wireless handhelds.

An added input card at the iLive control surface handles the nine wireless receivers located at FOH, plus inputs for audio from computers and iPods. All other inputs go to a patch bay co-located with the iLive rack and amplifiers behind the stage.

"To handle two entirely different bands, we actually have 65 inputs coming off the stage," said Rutledge. "So we added a patch panel, which feeds into the 40 iLive inputs. That gives us the flexibility to reset the entire stage in just 15 minutes between services."

Monitoring is a mixed affair. The praise team vocalists use floor wedges, while the worship leader uses a wireless in-ear system, all mixed at the iLive control surface.

The worship band monitors via an Aviom system, which receives 16 channels from the iLive control surface via DCA groups via the iLive's optional Aviom output card. This allows the musicians to create their individual mixes on stage.

The iLive's comprehensive DSP power makes it easy to handle touring artists and special events as well.

"For one event, we had five different bands on the same night," recalled Nate Grella. "Changes between acts were fast and

Steve Miller Band ME Finds Room to Roam with New Console



SAN FRANCISCO — Ira Malek, monitor engineer for the Steve Miller Band, has been using a Yamaha PM5D on the 2008 tour, and will be doing so again when the band hits the road this May.

The 2008 tour focused on every aspect of Steve Miller's multi-faceted music, from solo acoustic numbers and hard driving Chicago Blues, to R&B and his own classics, always including his top 10 hits, "The Joker," "Rock 'n Me," "Fly Like An Eagle" and "Jet Airliner."

For this year's tour, the Steve Miller Band will be featuring blues singer Sonny Charles, Norton Buffalo (who's been with Steve for over 30 years) on harmonicas, Kenny Lee Lewis on guitars, Billy Peterson on bass, Gordy Knutsen on drums, and Joseph Wooten on keyboards.

With most of his mix years spent at front of house, Malek began using a Yamaha PM5D when it first became available for a Good Charlotte show in New York's MTV's Studio.

"There is always something new to learn on the PM5D, and when I find a new function or technique, I like to teach it to a bunch of guys who are avid 5D users," Malek said. "For example, you can't really store a song per scene on other consoles for a seasoned rock band because the dynamics are making you work the desk, not the scene. With PM5D Version 2 software, I am able to go to the mixer's set up and set it up to whatever I may need, making it that much more musical. The console doesn't limit me."

easy, and we didn't have to go out and rent any outboard gear. Everything we need is already there, inside the iLive, and it sounds incredible. In fact, we don't even have an outboard effects rack anymore. That's when I realized how great this console is."

Backstage, the iLive rack houses five 8-channel input modules, one 8-channel output module, and the 16-output Aviom module. On the output module, three of the eight channels send the left-right-subwoofer information to the main PA, a dual-array QSC WideLine8 system.

The other outputs carry separate monitor mixes to the floor wedges, each fed by a separate Aux output. The Aux system is also used to feed the worship leader's in-ear mix, an assistive listening system, a video record feed.

"Before this, we had a really good-sounding analog console," Nate Grella said. "Once we decided to digital, it was a matter of finding all the features we needed without compromising in sound quality. The Allen & Heath iLive did that for us, and we couldn't be happier."

New System Gives Northeast Church an Audio Edge



The new FBT Modus sound system is for worshippers who prefer a little SPL from above.

HENDERSONVILLE, TN — Northeast Church (www.godwhy.com) has installed a new FBT sound system for their main sanctuary. Located on the northern outskirts of Nashville, the church attracts a diverse group of visitors who like their church services to have some SPL mixed in with the message from above.

A 10- to 12-piece band playing contemporary music with a wide dynamic range augments services. In addition to the regular services, a youth outreach program called "Gas Station" hosts concerts featuring both local talent as well as national touring acts. Christian

artists including Stellar Karts, War of Ages and Brad Stine have performed at Northeast.

The main system is comprised of two Modus 40 (one per side) with Modus Subs flown above. Four PSR 118S sub woofer cabinets lie on the deck for additional low frequency coverage. The rig is configured as a four-way system and uses QSC RMX 5050 power amplifiers and Biamp processing.

The Modus 40 is a curved box that essentially groups separate line array components (8x8" drivers and 8x1.7" compression drivers) into a single enclosure no bigger than one traditional two-way horn enclosure to provide 90-degree horizontal and 40 degree vertical coverage.

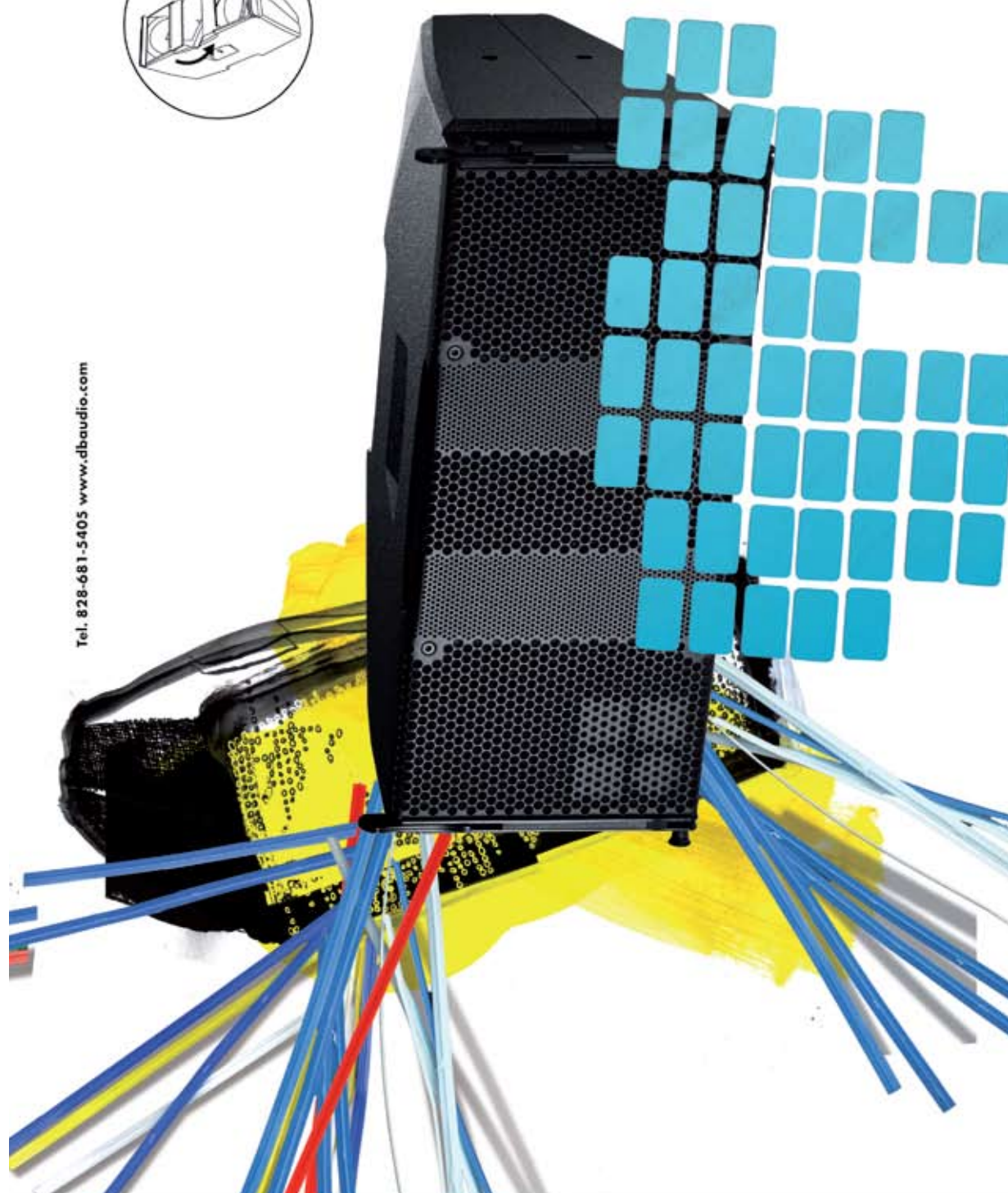
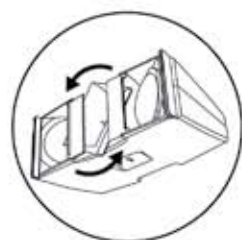
The Modus Sub cabinet houses dual 15"

drivers in a band-pass configuration. The FBT PSR 118's use single 18" speakers. Six FBT Verve 8M loudspeakers serve as front-fill and, due to their small size and pole mount capability, can be used as a separate system when needed. Two additional FBT Verve 8Ms are located in the balcony to give left and right audio to that area.

The decision to install FBT products came after several shoot-outs and product demonstrations from other speaker brands. CYM Productions oversaw the sale to the church. Brian Belcher is the Technical Director at the church and has also worked in the pro audio industry for many years. He has handled installations at many churches throughout his career and, while equipment selection may vary, one benchmark has remained.

Call it a pet peeve but, as Brian says, "I am a stickler for accuracy and truthfulness in a manufacturer's literature and specifications. Embellishment and hype have no place in professional audio specifications. I have seen this become an obstacle for church sound and lighting systems where you have lay people making expensive decisions. The FBT products not only sound great, but performed as their specs stated they would and I really respect that."

Northeast Church prides itself on being a bit on the unconventional side and its congregation supports their message. As Belcher says, "This church is a great place and we are growing like crazy. We are not your normal church; every Sunday is a concert with a message surrounded by technology. A very, very large message!"



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LMG Celebrates 25 Years; Launches New Web Site

ORLANDO — LMG Inc, a national provider of video, audio and lighting support, celebrated 25 years of business and launched a new Web site at www.lmg.net to showcase its legacy businesses — show technology and systems integration — and herald its newest division, concert touring.

Founded in Central Florida by Les Goldberg in 1984, and originally situated in a home office, LMG today employs over 170 personnel, operating in over 200,000 square feet of space across three national locations: Orlando, Phoenix and Las Vegas.

In the first decade, the company focused on video equipment rental services, but, as the industry grew, LMG has expanded its offerings to include full service support — video, audio and lighting — across all the business units.

"With 25 years of experiences on shows and projects of all types, we want to convey to our clients that we go beyond simply delivering boxes of gear," said Goldberg, CEO and president. The company has adopted a new tagline, "beyond technology," to emphasize the importance of service and support.

The redesigned Web site highlights the three branches of the company's business: show technology, systems integration and touring. It "offers visitors a clear path to all of our divisions, and allows the spotlight to shine on our newest offerings, such as touring, as well as the phenomenal growth of systems integration over the last decade," Goldberg said.

Nickelback Returns with New CD, Tour and Console



Monitor Engineer Mike Mule' has been using DiGiCo since 2003, and started with Nickelback in 2005.

NASHVILLE — Nickelback is returning with a tour to support their new album, *Dark Horse*, and a new console, DiGiCo's SD7, specified by monitor engineer Mike Mule', who has used DiGiCo D1s and D5s on previous tours.

Mule'—who has amassed over 25 years of mixing credits with groups ranging from Dashboard Confessional and Rush to Van Halen and Whitesnake—started with Nickelback in 2005 on the band's "All The Right Reasons" tour.

"I first used a DiGiCo console on A Perfect Circle tour in 2003," Mule' recalled. "I thought I was using a Midas until I was told we'd be using a DiGiCo D5... I had a day to learn it before the band walked in. Needless to say, I was very impressed and from there and have used one (whenever possible), on tours with Aerosmith, Evanescence, two Cyndi Lauper tours, Engelbert, and now on two Nickelback tours. The SD7 is a natural progression for me, having worked on a D5. I truly believe this is the best sounding, standalone digital console on the market."

In a training session with Matt Larson, DiGiCo's pro audio national sales manager, and the Clair Global crew in the Nashville office, Larson walked the guys through some of the nuances of the new console.

"Matt gave me some pointers on some of the new features, like being able to structure your mixes and how to assign the MADI racks now that there are no socket files in the software. DiGiCo obviously took recommendations into consideration with the new console, like having graphic EQs pop up when you solo a mix."

On the current tour, Mule' is handling over 50 inputs coming off the stage, including eight vocal channels, two drum kits and various electric and acoustic channels among other things.

"With 8 vocal positions around the stage, it was important to grab the main vocal dynamics, EQ and sends and spread them to the other positions and be able to follow around [lead singer] Chad Kroeger and [lead guitarist] Ryan Peake with their own distinct settings to any mic they walk up to."

"Also, allowing me to configure my console when needed is a big help with opening acts and when the 'oh-by-the-way' changes come," Mule' added. "A case in point was with opening act Saving Abel, who started on wedges and then brought in an in-ear package. We were able to reconfigure the console and add all the new mixes and arrange them to the engineers liking without losing any of

his previous settings. And as stated, this console handles the 'oh-by-the-way' situations with ease."

The SD7's built-in processing enables the work surface to come already loaded with features including 4-band parametric EQ on every input and output and its dynamics allow for every input and output to operate as a full multi-band compressor... none of which was lost on Mule'.

"Let's face it, if you need to augment your console with plug-ins to make it sound good, what's the point?" he said. "I'm old-school in the fact that we try to get everything to sound good from the source and not have to overcompensate with EQ and dynamics. I use them where needed and try not to load every channel up with unnecessary 'signal diminishers.' That makes the amazing dynamics, such as comps and gates on this console, that much more 'un-noticeable.' The EQ section is amazing. There's no plus- or minus-18 going on, if you know what I mean. The changes are small and precise."

Additionally, the big-features-to-small-real-estate ratio is definitely an added bonus. "I get a feed from video world that pops up on my console that enables me to see the stage from my monitor world. It's great in the fact that it eliminates yet another piece of gear such as an external video monitor. "But beyond that, because I'm handling in-ear mixes, there are now no racks of comps and gates and FX. Just my console, the split, the Madi racks and my RF rack. I fit in a small 8x8' world under the stage left wing."

But perhaps the biggest boon to Mule' is the feedback from the band—or rather, the lack of it.

"Daniel Adair, Nickelback's drummer commented to me, 'Not that the monitors ever sounded bad 'cause they have always been good, but... what the hell have you done? It sounds amazing up here!' The other band members haven't said much, which means they are extremely happy. And that that's really what it's all about, giving your band one less thing to think about when they are onstage. That means everyone else down the line is happy."

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Bob Heil Visits Full Sail University

WINTER PARK, FL — Full Sail University's Show Production & Touring and Recording Arts students got a chance to meet Heil Sound's Bob Heil, who visited the campus recently to give students a first-hand account of the evolution of audio technology.

Heil spoke, for example, about the quadraphonic mixer he made for The Who's Quadrophenia tour, the power amplifiers he tweaked while touring with the Grateful Dead, fiberglass speakers, mixers and the Heil Talk Box he originally designed for fellow ham radio enthusiast Joe Walsh of the Eagles.

Heil, who has also worked with Pete Townsend, Jerry Garcia, Stevie Wonder, Joan Baez, Peter Frampton, Jeff Beck, Paul Rodgers and Tool, spoke about the launch of the new Heil microphone and how the technology could impact students.

"You would think that I would go lay down after all these years, but I start it all back up again on the other end of the cable," Heil said, "on the microphone end."



Bob Heil's visit gave students a chance to hear how audio technology evolved.



Mexico's Auditorio Nacional Installs 60 New MILOs

MEXICO CITY — The Auditorio Nacional, which was named in the top slot in Billboard's Touring Awards in 2007, and topped Pollstar's rankings of theatres and auditoriums by posting total ticket sales of over 995,000, isn't resting on its laurels.

The venue recently added 60 Meyer Sound MILO line array loudspeakers, giving it bragging rights as the largest MILO system owned by any theatre or auditorium.

The Auditorio seats an audience of nearly 10,000 and is the largest secular auditorium in the western hemisphere. Size and technical standards have drawn productions to the venue, which more than 260 events booked annually.

According to Mark Giancola, production manager, the Auditorio picked the MILO sys-

tem on the basis of its sound quality, application flexibility and support from the company. "We present everything from pop and rock to jazz and classical, so we needed one system that has been proven over and over to be successful with all types of music," he said. "The MILO has certainly done that."

"The service has been absolutely first-rate," Giancola added, saying that Antonio Zacarias, Meyer Sound's director of Latin American sales and his team of highly-trained technical services staff, has "given us incredible support. They're always right there whenever we need them."

tem on the basis of its sound quality, application flexibility and support from the company. "We present everything from pop and rock to jazz and classical, so we needed one system that has been proven over and over to be successful with all types of music," he said. "The MILO has certainly done that."

The new MILO-based system was configured by Meyer Sound Mexico's design services department headed by Oscar Barrientos, following specifications outlined by the Auditorio's own production staff.

The new system will not be permanently installed, but rather will be available as an in-house rental that can be quickly flown and precisely optimized for any type of production. The base configuration includes 38 standard MILO loudspeakers, 20 MILO 60 narrow coverage loudspeakers, and two MILO 120 wide coverage loudspeakers, as well as 28 700-HP subwoofers and frontfill of eight UPA-1P loudspeakers. A Galileo loudspeaker management system comprised of two Galileo 616 processors provides drive and processing.

"Many shows were bringing in their own line array systems," Giancola said, "but that could be problematic because our busy schedule requires so many back-to-back

changeovers. With our MILO system in-house, we will save time, cut costs to the promoter, and guarantee ample power with superior quality. This system is substantially more powerful than any other outside rentals that have come through."

The new system was first used to rein-

force the live orchestra at Tchaikovsky's Nutcracker ballet. "The sound was just fabulous," said Giancola. "You could go to the very back and still hear a presence that you'd normally get only right up front. It's fantastic. I think everybody will be very, very happy with it."

"When you consider the stature of shows booked in here, we cannot afford to use anything but the best equipment," Giancola added. "That is why we chose Meyer Sound MILO. Our insistence in quality has placed us among the top venues in the world, and this new system allows us to maintain that reputation. It is certainly a strategic investment for the future of Auditorio Nacional."

Designed by architects Teodoro González de León and Abraham Zabludovsky, Audito-

rio Nacional opened in 1952 and originally served as a multi-use facility with open floor space for accommodating conventions and sporting competitions.

In 1991 it was rebuilt to serve as a theatre and auditorium for the performing arts. The varied program schedule includes a wide range of Latin American and international artists representing dance and drama as well as pop, rock, classical, and operatic music.

The Auditorio started using Meyer Sound systems in the early 1990s. Through the years, artists who have performed at the Auditorio include Robert Plant, Sting, Norah Jones, Pet Shop Boys, Rod Stewart, Elton John, Alejandro Sanz, Cranberries, Joe Satriani, and Barry Manilow.



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Adlib Improvises with Flexible Gear for Kaiser Chiefs "Off With Their Heads" Tour



Adlib's custom-designed amp dolly helped with load-ins and a JBL VerTec line array fit well with different-sized venues.

LONDON — Adlib Audio continued their ongoing relationship with UK indie rockers the Kaisers Chiefs, supplying all sound equipment and crew for the band's latest arena leg of their "Off With Their Heads" world tour.

Adlib's systems tech Tony Szabo has worked with the band and FOH engineer Chris Leckie since Adlib first won the sound contract in 2007.

Leckie once again specified a JBL VerTec line array, known for its reliability and light weight, helping it adapt to some of the smaller venues on the tour. "We can get 11 cabinets on a 1 tonne point," Szabo

noted.

The tour includes a total of 60 VT4889 mid hi cabinets for the arena leg, together with 16 of the updated VerTec 4880A subs and 16 of the new L-Acoustics SB28 subs. The L-Acoustics SB28 formed a solid ground stack while the Vertec subs were flown.

A typical configuration was 16 deep VT4889s for the front hangs and 14 for the sides, with eight flown VerTec subs per side.

Both L-Acoustics ARCS and dVDOSC boxes were used for front fill along with Adlib's standard-issue Lake processing via wireless tablet remote, which did all the

EQ and crossovers. The crew used a Meyer SIM 3 machine for additional EQ, time alignment and fine-tuning.

Adlib also had the opportunity to road test the new Lab.gruppen PLM14000 amplifiers, complete with onboard Lake processing, which were used to drive the VerTec subs. As a result, they are buying 12 of the two-channel versions they had on the tour. "Unlike most of the competition, they do exactly what it says on the tin," said Szabo — "deliver 7000 Watts into 2 Ohms per channel and make the subs sound simply amazing."

Leckie's preferred console is currently the Soundcraft Vi6, and he used most of the onboard processing and effects facilities, adding a personal collection of Alesis midi-verbs. He uses these to get the vintage rock sound that characterizes much of the Kaiser's music.

The key sonic aims are to produce a suitably loud and visceral experience for everyone in the room, and also for the quirky and intelligent lyrics to sit clearly and intelligibly on top of the mix.

Adlib supplied a Yamaha M7CL console for the support acts.

"It's all gone extremely smoothly," said Szabo, who worked alongside fellow Adlibbers Richy Nicholson, Declan Fyans and monitor babysitter Marc Peers.

A custom amp rack dolly, which housed eight amp racks, helped speed the load-ins. It was simply forked out of the truck and deposited stage right every day.

Over in Monitor world, Kaisers engineer Ilias Adrianatos used 13 d&b M2 wedges, with keyboardist Nick "Peanut" Baines and drummer Nick Hodgson on a Sennheiser G2 IEM system.

Adrianatos mixed through a DigiDesign Profile — currently also Peers' favorite desk — which worked well for some of the smaller venues in Europe where stage space was tight.

Adrianatos ran 12 mixes, including the band's IEMs, and made use of the Profile's onboard effects and processing. Lead singer Ricky Wilson also had an IEM set-up at FOH for his customary appearance out there towards the end of their sets.

The Kaisers like it loud onstage, and to ensure there were no issues there, the side fills were made up from three flown ARCS boxes per side and two SB28 subs on the deck.

"It's always good working with Chris and Ilias," said Peers. "They are working engineers, they know what they want and get involved in setting up and breaking down each day. They have our absolute respect."



New faces at L-Acoustics. From left, Annette Bilous, Jan Nguyen, Dave Weidenhoffer and Paul Tillman

L-Acoustics named Paul Tillman and Dave Weidenhoffer, both former L-Acoustics reps, regional sales managers. Tillman, a principal with Champion Enterprises, will continue to operate out of Eagan, Minn. and service the company's customers in the Northeast. Weidenhoffer will focus on sales in the Southeastern U.S. L-Acoustics also announced that Jan

Nguyen has been named sales and marketing coordinator, and Annette Bilous has joined the organization as administrative assistant and receptionist.

Sensaphonics founder and president Michael Santucci, Au.D., has been named to the board of trustees of the American Academy of Audiology Foundation (AAAF). The foundation, which supports numerous education, research and public awareness initiatives, raises funds through corporate partnerships, conferences, trade show events and other activities in support of its mission.



Michael Santucci

Shure Inc. named Fred Sicko sales manager of the company's European, Middle East, and Africa (EMEA) business unit. Sicko previously served as sales manager at Shure Distribution GmbH for seven years.



Fred Sicko

erated his own production company, Paradise Production Services, and was responsible for installations including Miami, Florida's Club Space, Club Level, and Prive, as well as the Jet Lounge in New York. Henao also spent 10 years as the production manager / audio engineer for Grace Jones, handling a variety of duties for her performances worldwide. He has also worked as a programmer / audio technician at the Las Vegas Hilton, where he mixed production shows and bands and oversaw the installation, programming, tuning, and maintenance of the facility's audio, lighting, video and automation systems.



Carlos A. Henao

Wireless Solution Sweden AB has named three new people for its R&D team. Mats Jonsson has been appointed the new CTO, and will manage software design projects for the company. The company also added Kjell Johansson, a radio engineer formerly with Ericsson and GSM Networks, and Wilhelm Alhgreen, who will be responsible for hardware design.

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— Gino Vannelli

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ST

VENUE
Santa Ana Star Center
Rio Rancho, N.M.

CREW
FOH Engineer: David Buehler
Monitor Engineer: Simon Welter
Systems Engineer: David Buehler
FOH System Techs: Ryan Youngblood, Steve Poulton, Mark O'Connell, Chris Pacheco

GEAR
FOH
Console: Digidesign Profile
Speakers: 16 JBL Vertec 4889, 4 Meyer MSL-4
Amps: 20 Crown iTech 6000
Processing: dbx 4800
Mics: 8 Shure UHF-R, Shure & Sennheiser wired mics
Power Distro: Nutech 200 amp
Rigging: CM Lodestar
Breakout Assemblies: Whirlwind
Snake: Whirlwind Concert 56

MON
Console: Allen & Heath ML-5000
Speakers: 16 Meyer UM-1P, 4 Meyer MSL-4
Processing: dbx 2231

ST

TNT NBA Party with Maroon 5

VENUE
Corona Ranch
Laveen, Ariz.

CREW
FOH Engineer: Jim Ebdon, Andre St Pierre
Monitor Engineer: Woody and Woody
Systems Engineer: Andre St Pierre
Production Manager: Brad Greenburg, Gary J Brunclik

FOH System Techs: Andre St Pierre, Michael "Woody" Woods

GEAR
FOH
Console: Yamaha PM5D
Speakers: 12 L-Acoustics V-DOSC, 12 L-Acoustics SB-218
Amps: Lab.gruppen, Crown
Processing: XTA DPA 226
Mics: Shure, Sennheiser, AT
Power Distro: Motion Labs
Rigging: CM Lodestar

Breakout Assemblies: Whirlwind
Snake Assemblies: Whirlwind 56x16

MON
Console: Yamaha PM5D
Speakers: 12 Martin Audio LE700, 4 Martin Audio FI, Martin FSX, JBL VRX drum sub
Amps: Crown 2402, M5000
Processing: Ashly
PMs: Shure, Sennheiser, AT
Power Distro: Motion Labs



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Canadian National Aboriginal Achievement Awards

ST



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Sound Art
Canada

VENUE
Winnipeg Centennial Concert Hall
Winnipeg, MB Canada

CREW
FOH Engineer: Ian Dunbar
Monitor Engineer: GERAL Sawchuch
Production Manager: Carl Noordover (technical producer)
FOH System Techs: Iain Graham (system), Ian Skrabek (wireless)

GEAR
FOH
Console: Yamaha M7CL-48, Yamaha LS9-32f
Speakers: 24 Electro-Voice XLD, 4 Electro-Voice X-Array B, 6 Electro-Voice ZX1
Amps: Electro-Voice P3000RL, Electro-Voice TG-5
Processing: Electro-Voice RCM-26

MON
Consoles: Yamaha PM5D
Speakers: 6 Electro-Voice XW12, Sennheiser G2 RF with Shure E4 PMs
Amps: QSC

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ST

Rock Ethos 2009

VENUE

Palace Grounds
Bangalore, India

CREW

FOH Engineer: Vishnu P.
Monitor Engineer: Mallesh T.
Systems Engineer: Ganesh S.
Production Manager: Shivaram Prasad
FOH System Tech: Anand S.

GEAR

FOH
Console: Soundcraft MH3
Speakers: JBL VerTec VT4889, VT4880A & JBL CSR Subs
Amps: Crown iTech 4000, 6000 & 8000
Processing: Dolby Lake Processor
Mics: AKG D5
Power Distro: Custom-made by V&P Sound Pvt. Ltd.
Rigging: Hookcraft Scaffold with Stagemaker Motors
Breakout Assemblies: Klotz
Snake Assemblies: Klotz

MON

Console: Soundcraft MH3
Speakers: JBL VRX 915M, JBL VRX 932LA & VRX918S for side-fills
Amps: Crown iTech 4000
Mics: AKG WMS4000, AKG Drum Set II, AKG D112, C418M, C451B
Power Distro: Custom-made by V&P Sound Pvt. Ltd.



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ST



SOUNOCO
B&L Sound
and Lights

VENUE

Winnipeg Convention Center
Winnipeg, Canada

CREW

FOH Engineer: Daniel Ellis
Monitor Engineer: Cory Fournier
Systems Engineer: Daniel Ellis
Production Manager: Brian Barth
Tour Manager: Mike Work
FOH System Tech: Brian Barth

GEAR

FOH
Console: Midas Verona 560
Speakers: 8 OAP CPX1250, 8 OAP TR-218 subs
Amps: QSC
Processing: Ashly Protea
Mics: Shure 57s and 58s, Audix drum mics, Heil PR22 for lead vocal
Power Distro: B&L Sound custom
Snake Assemblies: Ramlatch

MON

Consoles: Hear Technologies 16 Channel Hear Back
Speakers: OAP Wedges, Westone PMs, Sennheiser Wireless
Amps: QSC

Natalia Lesz Poland Tour 2009

ST



SOUNOCO
Airpol Sound
& Light

CREW

FOH Engineer: Arek Wielgosik
Monitor Engineer: Krzysztof Polesinski
Systems Engineer: Arek Wielgosik
Production Manager: Jarek Urbanski
Tour Manager: Pawel Pyzinski
FOH System Techs: Sebastian Zalewski

MON

Speakers: Sennheiser PMs, d&b Max
Amps: Powersoft Q4004
Processing: XTA DP 448
Mics: Shure, Sennheiser, AKG, Neumann
Power Distro: ABL

GEAR

FOH
Console: Yamaha Pm5d Rh
Speakers: Meyer Sound MSL4
Processing: Galileo
Mics: Shure, Sennheiser, AKG, Neumann
Power Distro: ABL
Snake Assemblies: Klotz

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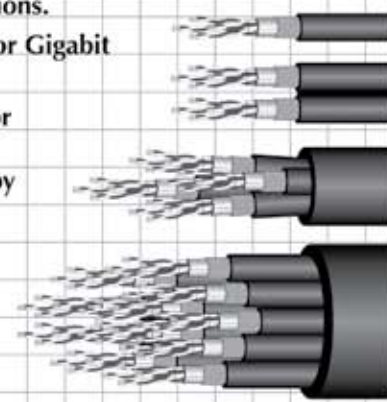
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Musikmesse 2009: A Mess of New Audio Tech



The 2009 event proved that product innovation can weirdly co-exist with a crappy global economy.

» AKG LC Condenser Microphone

Designed for a wide range of applications ranging from vocals and live sound to recording and studio use, AKG LC features an XLR connector module with 24-carat gold plated pins for optimized connectivity, as well as resistance to corrosion and humidity. Additionally, the LC features a spring steel wire-mesh grill for extreme ruggedness offering reliable control of pops and wind noise while an artist is on stage.

Standard accessories are the PB 1000, which adds 3 to 5 dB of high-end enhancement between 5 and 9 kHz for improving clarity of each voice, a protective mic case and the stand adapter SA 61.

www.akg.com

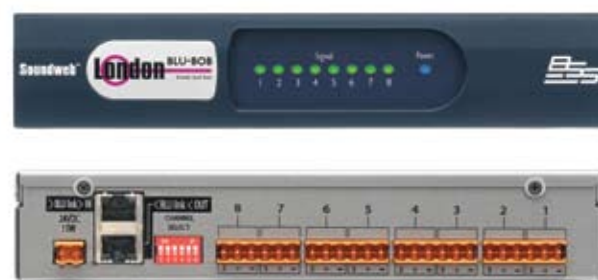


» BSS Break-Out Box

BSS Audio's newest break-out box, the BLU-BOB, has eight analog audio outputs on standard terminal block connectors and a 256-channel digital audio bus. DIP switches on the rear of the BLU-BOB device give users a way to select consecutive channels, in groups of eight, from the digital audio bus.

Multiple BLU-BOB devices can be configured to receive the same or different eight channel ranges. The BLU-BOB devices are powered by an external 24VDC power supply. Two versions are available—the BLU-BOB1, a half rack width, desk- or wall-mounted version, and the BLU-BOB2, a 19" single-rack version with mounting ears for equipment racks.

www.bssaudio.com



» JBL PRX512Mi and PRX718S

The PRX512Mi is a 12-inch, 2-way, truly multipurpose, self-powered sound reinforcement system, with a frequency range of 46 Hz to 20 kHz. The PRX512Mi is comprised of a 12-inch Differential Drive woofer, a neodymium compression driver mounted to a 70 x 70-degree horn, all driven by a multichannel Crown International Class-D digital power amplifier. The PRX512Mi features 400-watt low-frequency and 100-watt high-frequency amp channels, while weighing only 18 kilos (40 pounds).

At the core of the PRX512Mi is a fully integrated DSP input section, providing mic/line level input, selectable system EQ, and a premium A/D converter for a maximum signal-to-noise ratio. A dual socket pole mount, eight standard M10 suspension points and one M10 pull-back point enables multi-functionality.

Also new to the PRX family, the PRX718S is an 18-inch, self-powered subwoofer system, offering a frequency range of 33 Hz to 160 Hz and a power rating of 1,400 watts peak. In addition to the 18-inch Differential Drive woofer, the PRX718S features JBL's proprietary Dual-Bridge Technology (DBT), which directly links discrete amplifier channel outputs with each voice coil in the woofer. The PRX718S also offers a DSP input section, a selectable high-pass filter on the stereo loop-through outputs and polarity reversal, all at a weight of 80 pounds.

www.jblpro.com



» Mackie HD Series

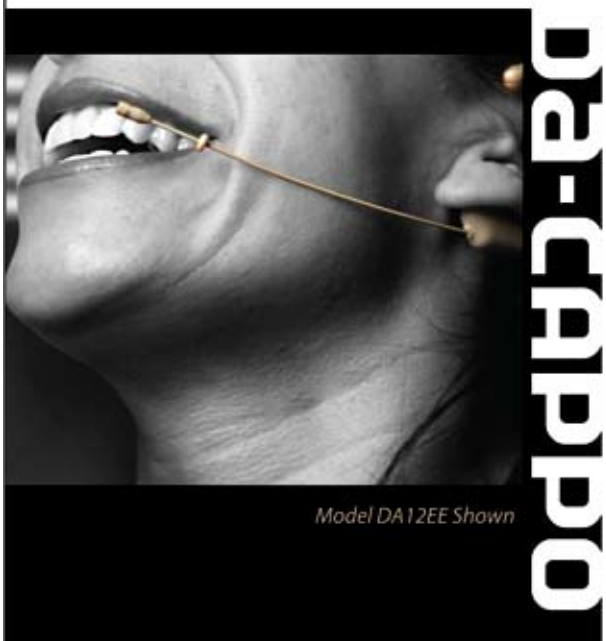
The HD1521 2-way and HD1531 3-way deliver up to 1800W of peak system power. precision crossovers, transducer time alignment and phase correction circuitry right in the box, in addition to patented acoustic correction processing that the manufacturer says counters the inherent physical attributes that can make typical loudspeakers sound honky or washed out.

With custom transducer design and system tuning by EAW, 15" neodymium woofers are matched with the 1.75" heat-treat-





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NAB Booth SL1710

ed titanium compression driver. The HD1531 3-way also features a 6" midrange driver and Mackie's WaveFront mid/high horn system. A user-adjustable 3-band EQ with a sweepable mid lets the user EQ the system for the application at hand. The all-wood cabinets feature 12 integral fly-points for horizontal or vertical rigging and both models are pole-mountable. Integrated protection circuitry and robust build quality ensures years of reliable use.

HD Series High-Definition Powered Loudspeakers are expected to be available in the Americas and Asia in June 2009. The HD1521 will be \$1,249.99 MSRP. The HD1531 will be \$1,499.99 MSRP.

www.mackie.com

» Proel NET Speakers

With four full range models and a stage wedge all available in both active and passive versions with Celestion drivers, the new NET Series, presented in preview at Musikmesse, will be available for purchase in late 2009. The Celestion loudspeakers are driven by new class H and class D amplifying modules.



Proel NET 215



Proel NET 12 MA

The NET Series enclosures are made from 15 or 18mm multilayer wood and 1.5mm-thick metal grilles. The units also feature heat-dissipation and protection systems and separate limiter circuits for each section of the amplifiers.

www.proelgroup.com

» Soundcraft Si2 Digital Console

The Si2 comes in a smaller footprint than its bigger brother, and has 48 mic inputs mapped on 24 faders (the Si3 has 64 inputs), but this is where the differences end.



The Si2, like the Si3, has four dedicated Stereo Line channels, four dedicated FX Returns from the four stereo Lexicon FX processors, 8 balanced insert sends and 8 balanced insert returns. Si2 is complete with 24 Group/Aux busses available at all times, 8 matrix busses and a full complement of monitor talkback and main bus outputs. Like the Si3, the Si2 uses a combination of rotary encoders and OLED screens on every channel. Four assignable on-board Lexicon effect engines supplement 4 stereo inputs. With all input and output connections and power supply on board, the Si2 can simply drop in where an existing analog console sits, utilizing existing copper cable snakes and splitter systems \$26,000.

www.soundcraftdigital.com

» Yamaha M7CLv2 Upgrade

Yamaha Commercial Audio Systems, Inc. has announced a major software upgrade to its successful M7CL-32 and 48-channel digital mixing consoles. The Yamaha M7CLv2 software incorporates features requested by thousands of Yamaha console users worldwide including Global Paste, enabling simultaneous editing of multiple scenes, and Matrix Sends on Fader, providing access to 24 mix busses.

Additional enhancements provided by M7CLv2 software include Post-Fader Inserts on all inputs and outputs, Post-Fader Direct Outs, Monitor/Cue Level on stereo/mono faders, improved Recall Safe mode, and Relative Level Channel Link and User Defined Key Setup on the console's offline editing software.

The M7CLv2 software update will be available by download free of charge during the summer for all existing M7CL users, and new console purchasers will receive the software pre-installed at no additional charge.

www.yamahaca.com



» QSC K Series Loudspeakers

QSC's new K Series line of powered loudspeakers features a molded ABS enclosure, uniformly matched drivers, advanced DSP and QSC's touring spec amplification. The same 1,000-watt Class D amplifier module powers all four models: the K8, K10, K12 and KSub (dual-12" subwoofer). Designed from the ground up, QSC claims the line defies the conventional wisdom that says smaller woofers equal lower performance. Along with the use of the same amp module across the line, the company is using the same woofer motor in all four models and the same 1.75" HF device in the three 2-way enclosures. The main difference is the resulting output dispersion — the K8 being the widest at 105° and the K12 the narrowest at 75°.

www.qscaudio.com



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Sean "Sully" Sullivan
FOH, Sheryl Crow



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Gordon Mack

A Man of Many Hats

By Bill Evans

John Legend: Mack has his back.

It was one of those borderline CF situations. I flew from Vegas to Cali a couple of days before the NAMM show to cover the John Legend tour. The night before I left I found out that the interviews were set up for a day that was hardly “standard” even by touring standards. In addition to a show at the Gibson venue in Universal City, Legend was doing the *Tonight Show* so his sound guys were arriving at the venue and then going back and forth from Universal to the NBC lot to prep both shows, line check, two performances and then back on the bus.

I called a halt to the madness and arranged for another night later in the week, which meant driving to San Diego—an adventure in itself—but at least I was not trying to interview a guy doing two high profile shows in a day. The funny thing is

sia, Madonna, Chaka Khan, Keith Sweat, Brian McKnight, Usher, Q-tip, Emma Bunton of the Spice Girls, Chic...

And on this gig he is also the production manager. We got a few minutes to chat after the show.

FOH: So, you left Chris Brown to join this tour. That's a change. Very different styles...

Gordon Mack: Yeah, but I like a lot of different types of music. I've worked with the Wailers. That was a very good learning experience. Taught me a lot about effects, how to set up quickly as well as how to be versatile in being able to use whatever piece of gear is thrown at you—which keeps you open to just about anything—to working with Prince or Madonna, who are very demanding artists, which keeps

“Being PM means you have a lot of other duties. So for me, once the show starts and I am at the console, everything else ceases. When the show is over, my PM hat is back on.”

—Gordon Mack

that as soon as I met Gordon Mack I knew he was the kind of guy who would have made it happen anyway.

Currently driving a VENUE desk with a Sound Image-supplied Adamson rig, Mack got his start back in 1986 working with Gwen “Ain’t Nothing Happening but the Rent” Guthrie. Since then, his client list has become formidable, including Chris Brown, Ciara, Prince, Erykah Badu, Fanta-

you on your toes. Also, I had done John before and I like John and I like the music.

How do you like the Adamson?

It is very nice. This tour is the first time I have used it and it is very nice. I love the d&b as well. It is nice to have several systems of that quality to choose from.



Gordon Mack, FOH engineer and PM for the John Legend tour.

What is the coolest part of the John Legend gig?

The show. Once the show starts, everything else ceases. Being PM means you have a lot of other duties. So for me, once the show starts and I am at the console, everything else ceases. When the show is over, my PM hat is back on.

At what point of the day do you switch hats?

At the start of the show. When I step up to the console I am no longer the production manager. But I am PM right up until that point. There are a variety of things that happen during the day that call for my attention. It would be very difficult to break down a day's responsibilities but from the time the truck doors open until they close, the show is on my shoulders.

Plus, John is doing a lot of extra stuff like the NFL, we're doing a tailgate party at the Super Bowl, he's doing the presidential inauguration, he's also doing the NBA halftime show. He's got his hands full which keeps me busy.

This interview was originally slated for Tuesday, the day you did the *Tonight Show*...

That was a busy day...

I figured there was too much on your plate...

It's not that difficult. I hear a lot of people say it is but for me it comes kind of natural. I do it for Erykah Badu, I'm her PM and FOH. But that day was a long day. Long drive from Oakland. We had transportation waiting as soon as we got off the bus, they took us to Leno, we

got that set up, stayed there until the first camera blocking then RAN over from there to Universal/Gibson. Did a quick line check/sound check, ran BACK to Leno for the show there at 4 then ran BACK to Universal for a VIP soundcheck at 5:30.

What is the most challenging part of the gig?

Making the show go, because I never know what's gonna happen. Things change sometimes. If he's not feeling well he might sing a little softer and I have to push him harder in the system and certain notes that he likes to hit he'll hit really hard. And I have to compensate.

So you're riding fader a lot?

On him I am.

The piano sounds really good, what are you using?

I have two C414s inside on the strings and a piano module, a Yamaha Motif. It's a MIDI grand. I run high/low on the mics and stereo on the module. Four total channels for the piano. What I do is get the best sound I can from the piano and blend in the module to make it stronger.

I thought the piano sounded really good.

People say that all the time. I get asked all the time how I get the piano to sound so real. I get the "woody" sound from the mics and the module is like that hidden secret. That "ancient Chinese secret."

You are driving a VENUE?

I have been using it but not using a lot of plug-ins. One reverb, one delay and one Smack on John, but without any compression just to get 'that' sound. My favorite console however is an H3000.

I saw you call up one plug-in that blew me away—it was a Line 6 Delay Farm. What are you using that on?

That is the main vocal delay.

You don't see that one a lot. I see a lot of high-end boutique-y stuff but not a Line 6 guitar plug in.

I called it up once a long time ago and it has some nice chorus-y sounds...

And it's simple as hell....

I'm a pretty simple person. I don't like to have too many things going on because then you have too many things that can go wrong. I don't even use a lot of reverb. A little bit on John. A little bit on the background singers, a little bit on the horns and everything else is totally dry.

I was told that everyone in the band is a producer?

That's true.

Man, I would not want your job...

No, it's not like that. Because they totally respect me. They listen to board tapes from the gigs so they know that I know what I am doing. So if I make a suggestion they are more open to it. And all of the band guys look up to all of the artists I have worked with anyway, so it is easier to work with them.

Are you with John for the rest of the tour?

I'm with John from now until the money's gone. **FOH**



John Legend on tour.

"The DELTA is amazing. It really handles anything you throw at it, from quiet, non-distorted guitar to amp-on-11 stuff!"

Justin Smith, Engineer
Queens of the Stone Age, Eagles of Death Metal

DELTA

Phantom powered ribbon microphone



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System Controllers

By **Bill Evans**

Cheap DSP has meant many changes in the pro audio world, and most of them mean we get to sell off or leave boxes at the shop, because what used to take four separate boxes is now done with one. The system controller is maybe the best example. Where your “drive rack” once contained crossovers, EQs, compressor/limiters and time delay, these computerized wonders do all that—usually in a single rack space—without breaking a sweat. As we see more processing migrating to the actual amps themselves, even these boxes are not safe from the march of progress. But here is a look at the current state of affairs. **FOH**



Martin Audio DX1.5

Company	Model	Price	I/O	Processing
Ashly www.ashly.com	ne4800	\$2,695	4x8	A full array of variable Q graphic and parametric equalization, crossover filters to 8th-order Butterworth, Bessel, Linkwitz, and Notched-Linkwitz, an extremely advanced automatic feedback suppressor, autolevelers, compressors, matrix duckers, limiters, frequency-keyed noise gates, time delay up to 1365 ms on every channel, sinewave, pink noise, and white noise generators.
BSS www.bssaudio.com	366T Omnidrive	\$2999 MSRP	3XLR/6XLR	Crossover, Limiter, up to 38 bands of EQ, Delay
dbx Professional www.dbxpro.com	DriveRack 4800	3499.99	4 analog and AES/EBU inputs 8 analog and AES/EBU outputs	48 and 96 kHz operation, Optional CobraNet I/O, Optional Jensen I/O Transformers, Full Bandpass Filter, Crossover and Routing Configurations with Bessel, Butterworth, and Linkwitz-Riley filters, 31-Band Graphic and 9-band Parametric EQ on every input, 6-band Parametric EQ on every output, Loudspeaker Cluster and Driver Alignment Delays, Selectable DSP inserts on all inputs and outputs including Classic dbx Compression, Limiting and Advanced Feedback Suppression
	DriveRack 260	\$999.95 MAP	3XLR/6XLR	Advanced Feedback Suppression, Classic dbx Compression and Limiting, Graphic and Parametric EQ, Auto-EQ Function, Full Bandpass, Crossover, and Routing Configurations, Auto Gain Control, Pink Noise Generator and RTA, Setup Wizard with JBL Speaker and Crown Power Amplifier Tunings
DYNACORD www.dynacord.de	DYNACORD / DSP 260	\$980 List	2 in/6 out	24 Bit Digital Sound System Processor with crossover, EQ, delay, compressor / limiter.
EAW www.eaw.com	UX8800	\$3,617	Input: 4 Analog/2xAES/EBU/32 channels EAW U-Net Output: 8 analog, 32 Channels EAW U-net	10 parametric (inputs and outputs), Delay (inputs and outputs), Crossovers (outputs), Limiter on each output, polarity inversion (input), gain controls (inputs and outputs)
Martin Audio www.martin-audio.com	DX1.5	\$3,899	2 in/6 out	high and low pass filters are available with 1st order, Bessel, Butterworth and Linkwitz Riley from 1st to 8th order (48dB/Octave) slopes, 9 bands of parametric equalisation, a fully configurable look-ahead limiter, up to 650ms of delay adjustable in 0.3CEs steps, gain from +15dB to -40dB in 0.1dB steps, and polarity adjustment.
Peavey www.peavey.com	Peavey VSX 26	\$559.99	2 in/6 out	Per input: 27-band Graphic EQ Autograph algorithm for automatic EQ settings, Compressor/Limiter, Delay (340 ms). Per output: Crossover/Bandpass filter (Butterworth, Bessel, Linkwitz-Riley), Parametric EQ (5-band, HP, LP Notch, Horn EQ, All-Pass), Compressor/Limiter, Delay with polarity inversion. Also Fully adjustable crossover points; Built-in signal generator (white, pink, sine); Phantom power +48 volt; Easy preset and system updates via Internet.
RANE www.rane.com	RPM 26Z	\$1,199	2 analog 2 AES3 in / 6 out	Mono and stereo Side-chain Compressors,Limiter, AGC, Ambient Noise Compesation, Parametric, 30-Band graphic, Feedback Suppressor, 2-way 3-way crossovers, Matix Mixer, Auto Mixer, Mixer, Selector, Delay, Signal generator.
Tannoy www.tannoy.com	Tannoy TDX1	\$1482 MSRP	2 in/4 out	4-band parametric EQ per input; route any input to any output; 2-,3-, and 4-way crossover (Butterworth, Bessel and Linkwitz-Riley type filters) on all outs; independent speaker alignment delay (200 ms) on all outs; independent digital limiter on all outs; S/PDIF digital in and through; factory and user presets.
	Tannoy TDX1	\$1482 MSRP	2 in/4 out	
TC Electronic www.tcelectronic.com	TC Electronic XO-24	\$995 MSRP	2 in/4 out	
XTA www.xta.uk.com	XTA DP448	\$5,795	4 in/8 out	Analog and AES/EBU In/Out, Input Graphic and Parametric EQ, Delay and Metering, Output Crossover, Parametric EQ, Delay, Phase Control, Limiting and Metering, Crossover slopes include: 6,12,18,24 or 48dB/Oct. Filters include shelving, notch, elliptical and bandpass.
	XTA DP446	\$4,895	4 in/6 out	
	XTA DP444	\$3,995	4 in/4 out	
Yamaha Commercial Audio www.yamahaca.com	DME24n	\$3,849	8-IO Analog, 16-IO Digital (optional MY card slot), Total 24 I/O	Delay Long, Short, Dynamics Gate, Ducking, Expander, Compander,, Compressor, De-Esser, Limiter, Filter BPF, HPF, LPF, Notch, EQ PEQ, GEQ, Fader, Pan LR, LCR, 3-1, 5.1, 6.1, Meter, Simple Mixer, Auto Mixer (II), Matrix Mixer, Delay Matrix, Source Oscillator, Wav File Player, Source Selector, Router, Crossover, Crossover processor (II), Speaker Processor, Other functions Room Combiner, Feedback suppressor, Ambient Noise Compensator, Audio Detector, Auto Gain Control, Event Scheduler, SPX
	SP2060	\$1,699	2XLR 1 AES in/ 6 XLR out	Input Select, Input Level, Input PEQ, Input Delay, Crossover, Output Polarity, Output Delay, Output PEQ, Output Level, Output Limiter, Digital/Analog, Stereo/Mono, 8 band, Stereo Link, Bypass, L.SHELF, H.SHELF, 6, 12 dB/Oct, 1300 msec, Stereo Link, Bypass, 6 dB/Oct, AdjustGc: 12, 18, 24, 36 or 48 dB/Oct, Bessel: 12, 18, 24, 36 or 48 dB/Oct, Butwrth: 12, 18, 24, 36 or 48 dB/Oct, Linkwitz: 12, 24 or 48 dB/Oct, Normal/Inverted, 500 msec, Bypass, 6 band, Bypass, APF (All Pass Filter) 1st, 2nd, Horn EQ, Threshold -54 dB to ±0 dB, Bypass



Yamaha DME 24-N



XTA DP448 Audio Management System



EAW UX 8800

Other Features	Computer Interface	Size/Weight
Channel mute	Programming is accomplished using standard 10/100 Ethernet or RS-232 protocol and Ashly's Protea NE Software on a PC platform. Optional CobraNet network audio input and output, EtherSound network audio input and output, AES/EBU digital audio input and AES/EBU digital audio output.	19.0" L x 3.5" H x 8.5" D, 14 lbs.
LCD display, six output mutes, input level meters, output level meters	HiQnet London Architect.	1.75" H x 5.75" D x 19" W, 6.2 lbs
Color QVGA Display; RTA input; EQ, Bandpass, Routing, Delay, Wizard and Utility instant access control; Input Channel Select; Input Threshold meters; Output Headroom meters; Output Mutes; Output channel select.	DriveWare System Architect	3.5" x 19" x 12.15", 11lbs.
LCD Display; Input metering; Threshold metering; Output muting; EQ, Delay, Crossover, Dynamics, AFS, RTA and Utility instant access buttons	DriveWare	1.75" H x 5.75" D x 19" W. 5.5 lbs
Output display with integrated limiter status and function display of output channels.. Direct access to the most important input and output parameters.. Precision display of input level for optimal system leveling.. Push button / LCD display	Easy to operate DSP 260 editing software permits the convenient editing of all parameters from a PC running windows. The computer is connected via the USB port on the front panel.	11 lbs. ship weight
Input and Output mutes, LCD Display, Encoder knob, LCD Function buttons, Ethernet connection	Controlled via EAWPilot	13.295" L x 19" W x 1.720" H, 10 lbs.
2 x 24 character LCD display	9 pin D type RS232	1 u rack mount, 7 lbs.
LCD screen; data wheel; setup; EQ; dynamics; Xover; delay; tools; mute and signal/clip LEDs; input select; output select; USB A&B I/O.	USB A&B	1RU; 9 lbs.
Front panel metering of input and out signals. No front panel control.	Computer via Ethernet, preset recall via contact closure, and Rane Remotes: VR2, MRS 4, LRS 4.	1U, 8 lbs.
Completely front panel controlled; input metering; 2 x 16 character backlit LCD, power on/off	Completely front panel controlled	1RU, 3.3 lbs.
		1RU, 3.3 lbs.
		1RU, 3.3 lbs.
Full Control	RS232 and RS485 control inputs. Wireless control ready.	1U rack size: 19" x 12", 8 lbs.
		1U rack: 19" x 12", 8 lbs.
		1U rack: 19" x 12", 8 lbs.
Scene control, presets, volume, meters, utility functions, user define buttons, headphones	*GPI, Ethernet, RS232, RS422, MIDI (PC, AMX, Crestron)	19" x 4" x 16.2", 17.6 lbs.
All Parameters accessible via Front panel	Ethernet	18.7" x 1.75" x 14.1", 9.7 lbs.

One MicroWedge, Two MicroWedges, Three MicroWedges...

By Larry Hall & Bill Evans

For a long time the Radian MicroWedge (popularly referred to as the "Rat wedge" due to Dave Rat's involvement with its development) was one of the "go-to" stage monitors for the live audio biz—especially for those of us who specialize in concert-type events. We could almost always be sure that the MicroWedge would be one of the rider-acceptable choices. The compact boxes put out plenty of clear SPL, and while everyone has their own personal favorites, few acts would turn down the MicroWedge when advancing the gig.

Now unless you have been sleeping in class, you know that there have been some major changes in the past year-plus in MicroWedge World. Dave Rat and Radian ended their longstanding relationship and Radian announced the APEX as a successor to the MicroWedge while Dave hooked up with EAW to develop a new version of the box. Which basically leaves us with three versions of the MicroWedge: the original, the new EAW MicroWedge and the Radian APEX.

Which leads us to this: Yes, we *are* doing a shootout. *FOH* never does shootouts because the editor is a wuss who says that "the only one who gets shot in a shootout is me." But this is a unique situation and it screamed for a direct comparison.

The Gear

All three boxes have the same basic structure: they are full range or biampable boxes with a coaxial device that includes an LF driver and a high-frequency horn, and are available with 12-inch or 15-inch LF drivers. (For the shootout we used 12-inch versions of all boxes). Both new boxes use a HF driver with a 3-inch voice coil, but the Radian claims a 2-inch exit to the EAW's 1.4-inch exit. Both new boxes contain a passive crossover and both sound good, but the crossover in the EAW is substantially bigger and beefier. The chances that anyone buying wedges at this level is using them passive is not great, so we are not gonna spend a huge amount of time on it, but the old Radian took a lot of power to get cranking when in passive mode and that has not changed much here.

The most immediately noticeable difference is in the shape of the boxes. The new MicroWedge is a bit smaller and lighter—7 lbs—and where APEX has gone to a whole new profile, EAW has retained the shape of the original MicroWedge. The cabling connects on the front of all of the boxes, providing an elegant look, and no cable ends to trip over and break because they "live" inside the box.

The EAW also incorporates a fly-track on the bottom that allows you—in addition to other obvious options—to use a kind of kickstand attachment to change the angle, which is kind of cool. Last physical difference—we did the tests with the grills off, but the New MicroWedge has some foam incorporated into the edge of the grill that makes them a bit more stable at higher volume. In other words, more gain before feedback,

which is always a good thing.

Mics used were a Shure SM 58, an Audix OM5 and then just to see how they handle something very hot and very wide, an Audix VX-10. We set up one of the older Radian MicroWedges as a baseline reference. Crest 8200s provided all power. We used a dbx 480 to set up crossover points for the APEX. For the EAW, we used the recommended UX8800 processor.

The Gig

OK, it was a shootout in the warehouse, not an actual gig, but you get the picture.

We did the deed over two days. First we got all official and scientific and did actual measurements from three feet—actual measured three feet, not "yeah that looks like about three feet." The first thing that was obvious was that both the APEX and the EAW were substantially louder than the old Radian—a good 6 dB louder. We barked into mics until our voices gave out then went to program material and test tones and ran them until there was substantial heat coming off the voice coils and all three held up nicely.

The next day was about the more subjective "how do they sound?" part of the equation. Same setup, same gear, but we brought a singer in to be our test subject. Again we started with the old Radian as a baseline playing prerecorded tracks then moved on with the same tracks and the same setup as the day before to the new boxes. Then had both the singer and an engineer used to doing lots of monitor work hit the mic both with and without tracks running and then sat down to talk it out.

Our initial impression came down to two good boxes that were just different flavors. I like vanilla bean ice cream and you may prefer French vanilla. They're both vanilla but they taste different. Using the "flat" setting on the UX8800 processor, the EAW came across as being smoother across the tonal spectrum while the Radian was very "present" in the vocal range, and the vocals cut better than the EAW. Our singer said that on a loud stage where he really needed to hear his vocal he would opt for the APEX but on a softer gig where he wanted to hear a fuller mix he would prefer the EAW. The engineer, on the other hand, just preferred the EAW. Using their processor and presets, the EAW was a few dB louder than the APEX with the same input.

We bypassed the dbx480 and took the EAW processor out of the chain and ran them passive and noted less of a difference in sound character and about a 2 dB advantage in output for the EAW. At this point we had planned on being done until someone suggested using the EAW with the dbx480 and without the UX8800, at which point it got very interesting.

In this setup, the first thing we noticed was that the EAW advantage in SPL disappeared, as did much of the "hi-fi"



We tested the monitors with a number of different mics, including a Shure SM 58, an Audix OM5 and an Audix VX-10.

feel of the sound. The boxes sounded a lot more similar. So we took it one more step and ran the same process with both boxes using the EAW controller. And...

The APEX got louder and smoother. So we tweaked the 480 settings for a little while and got the Radian to the same output and a sound character that was remarkably similar—in fact, damn near identical.

So, Who Wins?

This is one where you will have to make your own call. But here are some things to think about. If you are all about the processor, then you want to think twice about the APEX. We used the same settings on the 480s that we have used on the old MicroWedges forever. Since the shootout, presets have been written in house for both the dbx 4800 and the Crown iTech. Those were given to Radian, and we offered to write more, but have not received a response.

Ultimately, much of this comes down to the processor. The EAW definitely sounds better and is louder when matched with the UX8800 but we were able to get the same—or very close to the same—results with a non-EAW controller. And both the old and new Radians sounded substantially better and were louder using the UX8800 presets.

Bottom line on both sound and output is that the new MicroWedge mojo appears to be in the controller.

Taking the controller out of the picture the Radian is more attractive on a price level, with a \$700-plus difference in dealer cost per box. So the differences come down to shape, beefiness of the internal crossover, the integrated flytrack with optional kickstand, a couple of dB more output and a substantially higher price tag on the EAW versus the more basic but still loud and nice-sounding APEX, which is easier on the wallet. Neither has been on the market long enough to make a rider-friendliness call, although with the MicroWedge name, we have to assume that EAW will have the upper hand there.

Our recommendation is this: If you're on any type of budget and need a wedge like the original Micro that is simply a loud, clear and durable wedge with minimal to zero DSP, give Radian a call. If you're not on a budget so much, and are already looking at the Clair 12AMs or the Firehouse wedges, or the newer Showco wedges, take a look at this new MicroWedge. Its got killer but pricey DSP and the wedge/DSP combo is pretty insane, and quite a bit cheaper than the 12AM/Clair DSP combo. **FOH**

“I was expecting
it to be great...
but this is a WOW”

Steve Payne, Soundworks, Virginia, USA

flexarray

*“the even, stable, full
sound is unbelievable”*

Dave Dec, Eliminator Audio, Wisconsin

*“the sound was fantastic
and perfectly managed”*

Josh Grossman, Markham Jazz Festival, Ontario

*“the small Flex Array boxes
gave a massive but crisp, sound”*

John Dodkin, FOH engineer, The Ting Tings

*“they have enough headroom
to really scare the *hit out of people”*

Jon Sword, FOH engineer, The Feeling

Main image ©Ryan at GetmoMedia



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Da-Cappo DA04 Lav Microphones

By Jamie Rio

Most of my speaking gigs take place in houses of worship. I have found that a church congregation can be very critical when it comes to their ability to clearly hear the pastor, priest, preacher, rabbi etc. The fact of the matter is that any speaking event is only successful if the speaker can get their message across clearly, and that is why we need good microphones.

Not only do we need good mics, we need the right mic for the job at hand. That is where Da-Cappo comes in. They have developed a lavalier microphone that they hope will serve as the right mic for most of your speaking gigs.

The Gear

RT

The DA04 mics I received for review were very small lavalier microphones. The electret condenser capsule is only 2.5mm in diameter. The microphones come with a wind screen, tie clip and an adapter for your wireless receiver. I was sent two models. The DA04AL has a sensitivity of -35dB and the DA04BL has a sensitivity of -45dB. The latter model has some additional headroom designed for the pro broadcasters. The microphones listen in an omni-directional polar pattern with a published 20Hz to 20kHz frequency response.

The mics I received for review came in a flat black finish but they are also available in beige and white. Before I get into the performance of these lav mics, I think I should mention that many houses of worship have opted to use headset mics rather than lavs. Personally, I like the appearance of a lavalier microphone because it is less "rock star" looking and in my view more professional looking than a headset mic. That said, I should mention that Da-Cappo also manufactures a couple of different headset microphone designs and I may even be reviewing one in the future. OK, let's get to the performance of the DA04 mics.

The Gig

RT

As I mentioned at the beginning of this review, I mix most of my speaking events in houses of worship. My first

outing with the mics was at a mid-sized church in Wilmington, Calif. The pastor of this house preferred to use a handheld wireless mic so it took a little pre-service negotiating to convince the pastor that the lav would work well. He told me he didn't really know what to do with his hands, and I suggested he hold a Bible while he preaches. I am only telling you this in case you face the same or similar resistance. The "Bible in Hand" is a good look for most preachers and gives them something to do with their hands. Anyway, back to the event.

Once I had the pastor on-board with the new lav mic, I still had to place it properly. I tend to place my mics higher on the lapel than other techs. Mainly because I feel (and hear) that I get a little more resonance out of the speaker if the mic is placed closer to the voice box. So, I clipped the DA04AL (-35dB) higher on the lapel than others may. I next married the lavalier microphone to a Shure transmitter (Da-Cappo makes adapters to interface with most types of wireless systems).

Right out of the box, the mic sounded flat and natural. Of course, I did not expect the same amount of gain as a handheld, but the lav had a good amount of headroom. The pastor of this

particular church used floor monitor wedges to hear himself, and due to the omni-directional pattern of the microphone, I had a little feedback. So, I just pulled back the wedges and all was well. (By the way, most preachers or speakers don't ask to hear themselves in monitors. It would be unlikely that you will run into this type of issue during your own personal mixing duties.)

The most important question with this lav mic was whether I could get clear audio to the congregation, and I did. A few minutes into the sermon, the pastor was comfortable with the new mic, and the audience was responding to the message. By the time the service was over, I had sold the pastor on using a lav mic rather than a handheld. That would pretty much be "mission accomplished" in this case.

My next event was more of an uphill battle than the last church, as the preacher at a worship house I mixed in La Crescenta Calif. was very tied to his headset mic. I never considered that field testing the DA04 lav mic would also mean changing the hardened minds of some of the pastors I work with. At any rate I finally convinced my La Crescenta pastor to use the Da-Cappo microphone. The end result was very good. I got the same flat response from the

DA04BL that I had gotten from the DA04AL. However, I preferred the AL for a live speaker. It seemed to be a little more flexible. It all boils down to the mics performing very well in two very different scenarios.

As for any of you sound techs out there who are planning on picking some new lavalier mics Da-Cappo would be a sound (pun intended) investment. It is obviously easier to walk into a speaking gig armed with good mics and not having to negotiate your way through the gig. But should you have to deal with any resistance or having to change minds at least you know you will have to right microphones with you. **FOH**

The DA04 includes the mic, tie clip and wind sock and one of several available adapters.



Da-Cappo DA04AL and DA04BL

What It Is: Lav mics

Who It's For: Anyone doing a lot of spoken word gigs

Pros: Small and unobtrusive, plenty of headroom, flat and natural sound

Cons: Convincing speakers to use a lav...

How Much: DA04AL: \$275.00 MSRP; DA04BL: \$285.00 MSRP; Shure Adaptor, Black (DAADL04) \$24.00 MSRP

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Have questions about your gear after you've received it? Our Tech Support team is here to help. We also offer a wealth of online resources you can access anytime.



Live Sound Mixers

We know your mixer is at the core of your entire operation. That's why we have a huge selection of analog consoles and digital mixing systems, ready to meet the demands of any professional application. Plus, our knowledgeable Sales Engineers are here to help you choose and outfit the right setup. At Sweetwater, you'll find consoles of all sizes, from the best names in the business, including Digidesign, Allen & Heath, Soundcraft, Mackie, and many more.



Digidesign VENUE



dbx DriveRack PA

Signal Processors

Here at Sweetwater, you'll find just what you need to dial in the right sound onstage. We carry a wide range of EQs, compressors, and speaker control systems — not to mention a host of reverbs, delays, and multi-effects units — from such trusted names as dbx, Lexicon, Peavey, TC Electronic, and more.



Aviom A-16U Personal Mixer

Shure PSM 200

Personal Monitoring

We know how important it is to get the right mix to the performers — whether you're piping in a solid stereo feed or a whole board full of channels. That's why we carry the most trusted tools for the task, including professional wired and wireless monitoring systems from Aviom, Shure, Hear Technologies, and Audio-Technica.



JBL VTX282LA

Speakers

When it comes to speakers, Sweetwater's got the selection you need — including all the best from JBL, Peavey, Mackie, and more. So, whether you need an all-out line-array rig or a pole-mounted setup, we'll help you find the speaker system that's perfect for your environment — at a price that's right for you.



Microphones

At Sweetwater, we have the best microphones and wireless systems for the stage. Here, you'll find condensers and dynamics as well as stage-ready ribbon models — plus a range of mic accessories — from manufacturers such as Shure, Neumann, Royer, Sennheiser, Audix, and more.



Shure SM58

Royer R-121 Live

Shure SM57

AKG D112



Apple Mac Pro

Computers and Recording

When you're ready to record performances, there's no better partner than Sweetwater. We offer a stellar selection of Macintosh and PC computers, plus all of the audio hardware and software you'll need. We can even install and test your entire recording system before you put it to work in your rig. And did you know that we build our own Creation Station PCs? Made from the ground up for professional audio recording, these powerful machines are available in rackmountable and tower configurations. They feature audio-optimized drives, "Whisper Quiet" operation, top-quality components, and rock-solid reliability.



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Sweetwater's Chuck Surack

By Kevin M. Mitchell

Who: Chuck Surack, president and founder of Sweetwater

What: Fourth largest retailer of music instruments and pro audio products in the country.

Where: Fort Wayne, Indiana

When founded: 1979

Full time employees: 340

Number of pro-audio products in catalog: 4,000+

Recent company highlights: Sweetwater recently received the Business Committee for the Arts' prestigious Ten Award. Along with others, including H & R Block and Northwestern Mutual, Sweetwater was

I built a company based on three things: Reasonable prices, expertise and great customer service."

The company today: Last year Sweetwater opened its new \$35 million campus. The first LEED-certified "green" building in the region, the new 180,000-square-foot state-of-the-art facility includes a 250 seat Performance Theatre and Sweetwater's new Academy of Music.

People might be surprised to know: "I'm a helicopter pilot, collect and restore cars, and play the saxophone, gigging almost every weekend. Also I'm a gear junkie, and know how to use almost everything we sell."

Home front: Wife Lisa; stepsons Tyler and Cameron; and daughter Adderly (named



Chuck Surack, president and founder of Sweetwater.

"I had the same problems that many musicians had for decades: Where to find the products needed at reasonable prices." —Chuck Surack

recognized for its ongoing support of the arts at a gala ceremony in New York last October.

Humble beginnings: "Sweetwater Sound started as a four-track professional recording studio in my VW microbus. At that time, I was recording albums and composing jingles for area retailers. But I had the same problems that many musicians had for decades: Where to find the products needed at reasonable prices — that, and getting dependable advice from people who actually knew what they were talking about. So

after Cannonball); and dogs Butterscotch and Tootsie Roll.

If I could tell my younger self one thing, it would be... "Balance life, family, work, and friends better."

Best part about my job is... "I get to work with the most amazing people in the world. I am surrounded by some of the best and brightest and I'm inspired everyday."

Biggest drag about my job is... "Those

few customers who don't yet realize that Sweetwater is really different and we really care."

If and when I get on vacation, you'll find me... "With my lovely wife and my head buried in a computer and reading tons of magazines, like *Front of House*, *Mix*, *Remix*, *Recording*, *Car and Driver*, *Autoweek*, *Rotor and Wing*, and many, many more.

The best concert I probably ever saw was... "Too many to name! Some of my favorites were seeing ZZ Top in the mid 1980s. Every concert I've seen with Tower of Power. Ray Charles in California just a

couple of years ago, James Brown two months before he died ..."

If I could have lunch with any person living or dead, it would be... "I have been fortunate to meet so many great people on this earth, but if I had to name one, it would be Jesus. I would have a lot of questions for him."

Words to live by: "Always, always do the right thing. Your integrity and your credibility define your life while you're here and after you're gone." **FoH**



Sweetwater's 180,000-square-foot facility is a LEED-certified "green" building.



The 250-seat Performance Theatre.



The company has come a long way from its origins in the back of a VW microbus.



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FOH Linkin Park

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Clients: Jonas Brothers, Carrie Underwood...

Quote: "If you are waiting on me you're backing up!" and "Changing the laws of physics on a daily basis to accommodate demanding and ever-changing professional needs."

Personal Info: Thirty years of providing quality audio support, nearly 20 of those with Showco and Clair. Gotta run now I can hear a new tour coming up!

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Quote: "Do it right or don't do it at all."

Personal Info: In high school, I was playing guitar in bands and did the club thing, but I knew I needed a backup plan. So I got my degree in audiovisual productions. At 21 I got my first job as a AV rental guy. By 23 I started my own company. By 26 I quit my job and been doing AV ever since, 18 years now. I first thought since I was in bands and knew lots of other bands I figured that's what I would be doing—live sound for bands, but there is no money with bands, so corporate is where I went. I figured if I can mix six bands a night at FOH and five monitor mixes with no sound check, then six talking heads on stage is a walk in the park. My goal is keeping my clients happy and making sure AV is not something to worry about.

Hobbies: Travel, playing guitar now... and looking for more gigs...

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The De-Specialization of Audio East

However reluctantly, the company has expanded its capabilities — and circle of friends — to keep clients happy.

By David John Farinella



Audio East helped get things revved up at the Wild Turkey/Bud Stage during the 85th annual Laconia Motorcycle Week in Laconia, N.H.

In the mid-1990s, Daniel Bouchard was balancing a handful of plates on sticks, doing all he could to keep each in the air. There was a day gig at a music store, a handful of dates with his band and then there was that PA sitting in the van. One day he decided to put two of those sticks down to get the PA stick swinging.

"I decided that I could make more money renting one sound system out than the other two," the Audio East operations manager and owner reports. "The one client I had dropped me, so I went out and got another. Then the first came back and that forced me to buy another system."

Bouchard kept those two clients — regional cover bands that were doing 90

Today, Bouchard thinks of Audio East, first and foremost, as a production house. "I organize everything from audio to lighting, so the client doesn't have to shop 10 different people," he says. With his company, he adds, "they also have a production manager who's going to worry about their schedule, and that's not billed."

Also, he believes the company's size and service reputation gives him an edge over the larger production companies in the area — and, surprisingly enough, an edge on costs.

"They are so much bigger than we are that they can't compete with us price wise," he says. "So, if there is a cli-

going to find us [near the top]. The reason I did that is because I wanted to reach a lot of different places. So, if I could have a small piece of a lot of different pies, [I figured it was] better than just trying to work in my 50 miles radius."

So far, that approach has paid off. "We are really starting to get strong in New York City and Long Island, because they are not so competitive down there as far as production people go," he says. "Everything seems to be a union house and the rates are pretty locked in, so a university in New York can save \$4,000 off production costs and get a better product. The downfall is that when there's an emergency I'm out in New York having to make friends."

A Friendly Network

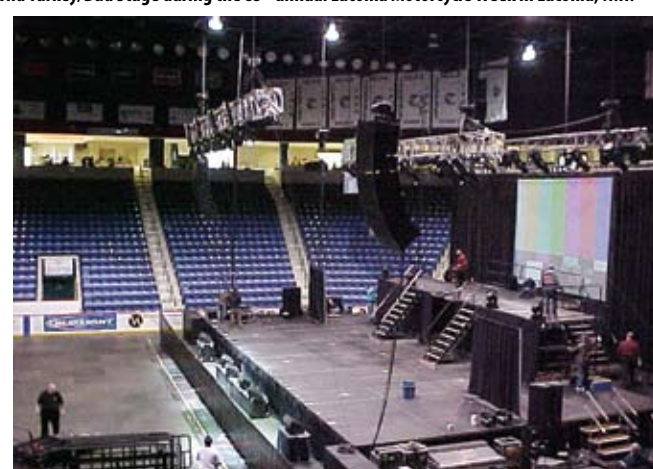
FOH

Making friends, Bouchard adds, has been another important ingredient in his company's success and growth. In fact, before he made his latest line array purchase he made a number of calls. "I made sure that I had a rental partner that I could rent another 30 or 40 boxes from with matching amps and processors to make it so that instead of me being a 16 box house, I'm a 40 box house," he explains. "So, if my client needs way more than I have then I have the access to get it."

The move from pure audio house to production provider was not the only change that Bouchard has made over the past couple of years. "We are now steering away from rock shows," he explains. "There is no money in them, the gear gets treated like crap, it's always in a substandard place and the artist is never happy because the

promoter can't give them what they want. We're steering in a different direction with more concert series and festivals."

The Audio East team is also concentrating on commencement business and corporate gigs for clients like Gold's Gym in New York. "We'll do a two day event for their trainers where we bring in a stellar production that we designed," he says. "We take care of them and they take care



Setting up for the Lowell Summer Concert Series at Boarding House Park in Lowell, Mass.

"I swore I'd never get into lighting, but I ended up getting into it. Swore I'd never get into staging, and now we own staging. Swore we'd never do video, and now we're doing video."

—Daniel Bouchard, owner, Audio East Inc.

dates a year — happy and then started to look for others. His look didn't take long, since a promoter was looking for a full service solution in a room where national acts played. "Then I just started picking up national and international acts," he explains.

Keeping Clients Happy

FOH

But if specialization can be a good strategic move for any business — the typical brain surgeon gets paid more than the average general practitioner — sometimes a company has to de-specialize to keep clients happy.

"I swore I would never get into lighting, but I ended up getting into it," Bouchard says with a laugh. "Swore I'd never get into staging and now we own staging. Swore we'd never do video and now we're doing video. We found that the organic model worked really well, as long as you can grow everything small and sub-rent it until enough clients asked for it. The whole company was built like that, piece by piece every year."

ent that's shopping them and shopping us, we're going to beat them by 40 percent because our overhead is so much less. But if we're going head to head in the sound business, then it's a lot more competitive."

Patient, Steady Growth

FOH

Growing patiently has been one of the factors of success for Audio East, Bouchard says. The other has been the company's Lowell, Mass. location and the willingness to travel as nearby as Boston and as far away as Long Island, N.Y. "I don't think this company would survive in other parts of the country," he says. "We go to all those places a lot, and we are two-and-a-half hours from all the ski resorts, where there is a ton of business."

The company's reach is the basis of Bouchard's marketing campaign. "We advertise the sound company as New England sound and lighting, even though Audio East is the name of the company," he reports. "If you look it up online you're



Audio East Inc. owner Daniel Bouchard works the FOH controls for an event at Tsongas Arena in Lowell, Mass.

of us and at the end everyone is smiling as opposed to crying because we're loading out at 5 a.m."

At the same time, Audio East will continue to expand its sales and install business. "Our long term success really has come because we've had several different kinds of incomes," he says. "That's been the secret of not dying, especially in times like January and February." **FOH**

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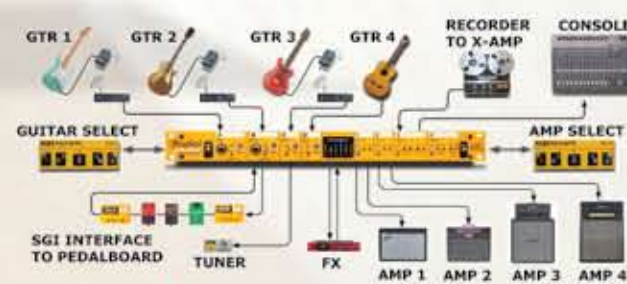
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All the World's a Stage

But Moving It is Getting More Complex



By Dan Daley

Fuel prices are down and everything's looking rosy for getting gear on the road for the upcoming concert-touring season, right? Well, maybe not.

Some of the handful of freight forwarding companies that specialize in packing, shipping and handling musical instruments and pro audio gear are reporting that a combination of more burdensome Federal regulations and a general malaise at still-floundering airlines that have cut routes, changed aircraft and in some cases transferred that chimp from the luggage ads to cargo handling is creating new headaches for getting tours where they need to go.

Larry Bretherton, manager of the Los Angeles office of freight coordinator NewDirex, says that if anything, conditions for concert shippers have become worse more than seven years after the 9/11 attacks in New York. "I don't know if they're keeping America safe but they're keeping us busier than ever," he says, referring to the Transportation Safety Administration (TSA) and its parent entity, the Department of Homeland Security (DSE). "We get two visits a year from TSA and at least one from Customs."

Major problems include the fact that the finalization of TSA's own database of commercial shippers is substantially behind schedule and their Known Shipper program has added additional layers of complexity that are costly in terms of both time and money, often compelling the shipper to physically go to the sites of clients and destination venues to satisfy TSA regulations. All clients and destination venues have to be submitted in dense detail for TSA vetting. "And if they kick one back to us, we literally have to fly there to

"It used to be going mainly to Europe when it went overseas. Now, much of it is headed to Asia, Central America and South America. I'm not sure why, but the trend looks like it's going to extend into 2009." —Keith Mitchell, Shockwave Cargo

confirm all the details," says Bretherton, who says his list of known shipper entities has about 10,000 entries. In particular, it's starting to wreak havoc with newer venues and ones in less-traveled locations.

Fuel prices are under control for the time being, but the airlines are not out of the woods by any means. U.S. carriers cut their domestic schedules by an average of nine percent in 2008, and are also changing out wide-body aircraft for narrow-bodies on some of more marginal remaining ones, thus reducing cargo capacity on those routes. "I have to continuously check on schedules, routes and aircraft type," Bretherton complains. "I might be bidding on a project that starts two months from now, but if two weeks before it starts they switch from a 767 to a 737, everything has to be recalculated. It's important to have a caveat in any bids that makes it clear that they are based on current information."

Keith Mitchell, president of operations for Shockwave Cargo, which operates from Los Angeles and Elizabeth, N.J., agrees that Federal regulations are becoming more onerous, as are the airlines' own cargo requirements, which increasingly reflect the fee-soaked nature of passenger baggage. But he's also noticed another trend when it comes to routing gear for touring artists:

more and more of it is going to places he's never shipped to before. "In the past three or four months, I'm seeing a lot more activity going to places like Bali, Indonesia, Panama, Colombia," he says, citing artists including Hoobastank, Third Eye Blind and Marc Anthony, among others, for whom Shockwave has sent gear overseas. "It used to be going mainly to Europe when it went overseas. Now, much of it is headed to Asia, Central America and South America. I'm not sure why, but the trend looks like it's going to extend into 2009."

Nonetheless, fuel costs will remain volatile in 2009, affecting shippers' cost and their ability to project those costs for future bids. Even the usual harbingers of price increases are no longer reliable; the announcement last December that OPEC was cutting oil production resulted in gasoline prices further declining that same week. But some things still allow some useful crystal ball action: land shipping costs will rise and fall quickly in relation to the price of gasoline; jet fuel tends to lag those changes by as much as a month, and airlines have been good about announcing fuel surcharges in advance.

Production companies have also been changing their strategies in reaction to air freight costs and the increased time that it takes to clear complex productions

through customs and security. One of the more significant of these has been to create multiple versions of assets like stage sets and backlines, then pre-positioning them in advance of a tour moving from one continent to the next. Upstaging did just that with Radiohead's recent tour, creating two productions that would leapfrog each other ahead of the band, which then picked up sound and video from local vendors.

The concert freight sector, relatively cozy as it is, has seen some consolidation, most notably Rock-It Cargo's acquisitions of shippers Rogers Worldwide and Soundmoves. About the same time, a consortium of small and mid-sized shippers that share a specialty, or at least an affinity for, the touring concert business formed Entertainmentcargo.com, through which a half-dozen or so independent freight coordinators offer those and other tour support services in the U.S., Canada, the ANZAC region, Japan/Pacific Rim and Europe. Troupes touring the world can be handed off to member companies in each region, though the originating company controls the budget and invoicing, consigning the work to the other affiliates. NewDirex is the West Coast affiliate for Entertainmentcargo.com, and Larry Bretherton says it's as much a marketing proposition for each of the shippers involved as it is a reaction to consolidation elsewhere in the market. "It's worked well," he says. "We're all neurotic small-shop owners who want everything to go exactly right. That's tough to do in this business."

The thing everyone wishes for this touring season, though, is stuff to ship. Lots of it. **FOH**

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THEORY & PRACTICE

By Mark Amundson

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Collected and expanded from Amundson's monthly column in FRONT of HOUSE magazine, LIVE SOUND, Theory and Practice offers solid technical data to help you understand the theory behind the hows and whys of sound reinforcement with sections that cover speaker and amplifier configuration, power distribution and signal processing, as well as concrete practical advice you can use when the gig gets hot. It's recommended reading for anyone out on a gig who wants to get it right.

www.fohbookshelf.com



By Mark Amundson

Making a Solid Connection

Every once in a while, we need to tell the experienced sound guys to take a break and re-introduce a basic topic that does not get discussed much. Power distribution (distro) connectors are such a topic. It's as good a time as any to now go over the common types and discuss their usage.

NEMA 5-15

The National Electrical Manufacturers Association (NEMA) is a non-government organization that helps set standards for the industry, and has evolved from many separate associations into one.

About a century ago, Thomas Edison invented the light bulb, but before it could light anything, the whole electricity infrastructure — from DC generators to wiring, switches, light sockets and receptacles — also needed to be invented. While not every item Edison's engineers designed survived the conversion to AC power, instigated by the Nikola Tesla/Westinghouse/General Electric lobby, many standard items did. One item was the two-pronged electrical plug and mating receptacle, now called an "Edison" plug and receptacle.

In the 1950s, increased safety concerns brought the third or U-ground prong into usage, which now is described as the 5-15P plug and 5-15R receptacle. Pictured above is a typical example of a heavy duty 5-15P plug and duplex wall-mounted 5-15R receptacle.

NEMA 5-20

Also in the middle of the last century, the need for slightly more ampacity for kitchen electric gadgets and in business locations brought forth the NEMA 5-20 plug and receptacle. While the 5-20P plug is very similar to the 5-15P, the 90-degree rotated neutral prong prevents the 20-amp rated plug from mating with a 15-15R receptacle. Our graphic also includes a typical 5-20P



NEMA 5-15



NEMA L14-30

plug and 5-20R wall receptacle. In sound systems, it fairly common to see 5-20P plugs on 20-Amp rated power conditioners and high power audio amplifiers, especially those used on subwoofers.

NEMA L14-30

The NEMA L14-30 series is a higher power plug and receptacle commonly used in moderate sized power amp racks, and contains four prongs/contacts. The "L" in the L14-30 designation, means it is a twist-loc design with the prongs and receptacle slots curved for the twist feature. The 14 stands for the "14" series of designs, and the 30 is the maximum AC current rating of the prongs. Of the four contacts, the neutral is across from the safety ground (prong with bent tab), with the two 120 volt hot contacts in between. This is described as a 120/240VAC design, as it is has the neutral as a center tap between the 120VAC contacts or 240VAC across the hots when used in single phase power distribution systems.

In many modest sound company B and C rigs, it is common for the portable power distribution unit (PPDU) to have a few



NEMA 5-20



NEMA 14-50

L14-30R receptacles to bring out power to amplifier racks located behind stacks of mains speakers at downstage left and downstage right. This makes sense as locating the amp racks close to the speakers makes the speaker cable losses low, and the audio fidelity from the speakers improved. Obviously, smaller sound systems will use only one mains power amplifier rack, and run longer speaker cables across the stage instead. A good example of NEMA L14-30 usage is on some Motion Labs Rac-Pacs as a means of chaining PPDU power to the Rac-Pacs.

NEMA 14-50

For us club rig sound companies, the 14-50P "range plug" is very much a standard disconnect for small PPDU's. The 14-50P plug and 14-50R receptacle are the current standard interconnect for household electric ranges and contain 4-prongs for neutral, safety ground, and the 120/240VAC hots. While most electric ranges use the 240 VAC across the hots for the oven heat elements and stovetop heat elements, the addition of the neutral allows appliance manufacturers to use

120VAC light bulbs, clocks and control circuitry. Previously the NEMA 10-50 plugs and receptacles were used, but they did not have the neutral contact.

Although informally used a couple decades ago, the NEMA 10-50 interconnect is forbidden to be used as a 120VAC power distribution connection because the safety ground and neutral wires would have to be shared on one contact. Forbidden or not, I still see 10-50R receptacles at older clubs, some shady sound companies with 10-50P distro plugs and even an occasional extra green safety ground spring clip. If that neutral/safety ground contact should ever open circuit, a lot of 120 to 240VAC hot shocking current would be found onstage looking for something or someone to complete the path to ground.

A Reminder

If you have not done it recently, make sure all your AC distribution cabling gets the connector contacts cleaned periodically, or at least during the build of the cables. For me, contact cleaning is a bunch of Q-tips and small bottles of Caig Labs red DeoxIT and blue PreservIT fluids. The process is to use the red bottle brush and liberally apply the fluid on all the metal prong surfaces and in the cable receptacle slots (unpowered of course); and then use the Q-tips to absorb the extra DeoxIT while leaving a uniform coating. The blue PreservIT fluid is applied and removed the same way, with the second Q-tip collecting both red and blue fluids in excess. The red fluid removes the metal oxidation and carbon build-up, while the blue fluid protects against future oxidation. As a handy preventer of warm AC connections by having coated contacts, some of that fluid will even help wipe and clean the venue's receptacles. **F•H**

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Who Can You Trust?

It seems as though the world is collapsing around us as people are losing faith in a system that has let them down. Powerful people who are supposed to be leaders and role models have betrayed our trust, and even the elected officials that ran on a platform of hope and change are viewed with a wary eye. Greed has become such a way of life that it permeates our whole society and affects everyone from lenders to borrowers. Everyone is guilty and responsible for this massive failure because we are all attempting to live up to the same dream and expectations that we have been sold. Movies and television glamorize wealth and prosperity, and we not only idolize the hero, but we also sympathize with the fact that the hero may have to participate in some illegal actions to achieve their righteous end.

When such information is so thoroughly embedded in our collective consciousness it seems only natural that we would look the other way when such activities occur in real life. After all, we have all been told to "Keep our eye on the prize," "Winners write the history" and "To the victor go the spoils." Tough guys prevail because they are willing to do what's needed and they make "Offers you can't refuse." Of course this mentality is nothing new and has been going on since the beginning of time (although one should remember that I am only postulating since, as old as I am, I have not been around since the beginning of time.) I do read history books though,



We can trust in ourselves and what we do because what we do is honest. It's pretty hard to fake good sound...

and I can guarantee that neither greed nor lust for power is a new phenomenon — nor is the appalling behavior that is associated with these deadly sins.

From Ship to Lifeboat

I bring all of this up since every one is in the same boat that started taking on water due to the fact that we were so intent on keeping our collective eye on the prize. By focusing so unremittingly on the prize, we lost sight of the people in charge of steering the ship. Blinded by *the dream*, we allowed our captains to take our hard earned wages and abandon ship, leaving us adrift in a stormy sea without a compass. Or in other words, "Up sh*t's creek without a paddle." So be it! Our captains jumped ship not only with all the money, but with all the supplies as well, and then they had the audacity to ask for a bailout, which they only distributed amongst themselves. In a more honorable time, the skipper would go down with the ship, and his loss would ensure that he would never again be entrusted with the command of another vessel.

Now, due to a loss of faith in the system, we have become cynical and distrusting. Investors are suspicious of the stock market — and rightly so. We the people do not trust our steroid-infused athletic heroes. The car manufacturers are less than trustworthy and the CEOs

that run the companies have certainly lost their credibility. A short list of other things not to trust are insurance companies, mortgage brokers, credit card companies, the government, the bailout, the last eight years, the wars, oil prices, the Palestinians, the Israelis, terrorists, our allies, Hugo Chavez, Ticketmaster and their merger with Live Nation, Merrill Lynch, A-Rod, Chris Brown's character, Michael Jackson's nose, Britney's sanity, pension funds, 401k plans, investments with Bernie Madoff or anyone who promises high returns, that justice will be done, reality shows, retail, religious leaders, politicians, the news, the weather, Al Sharpton's motives, Rush Limbaugh, pet chimps or one's mortgage agreement.

Going Down?

So, while the ship is taking on water and the captains are all awarding themselves bonuses, who is it we can trust? The obvious answer is the audio industry. That's right, we can trust in ourselves and what we do because what we do is honest. It's pretty hard to fake good sound, and I'm not referring to auto-tuning a vocal or singing to a track, because it's not our fault if one cannot trust in the artist's talent. What I'm getting at is that it is our responsibility to go into any given venue and properly install an audio system and make sure that it sounds good. If the sound

is less than adequate, the boxes look beat or the crew is obnoxious, we do not get called back. Very simply, a fee is paid, a service is rendered and if the service is below par then we never hear from that client again. If good service is provided at a reasonable price and, in a timely manner, then we get called back to do the job again.

We live in a world of instant gratification where we do a show, get paid, go home and both parties — employer and employee — are happy and satisfied. Unfortunately, in these dire economic times, there may not be as many shows for us as when the economy is thriving. Since employers and producers are all looking for money-saving deals, things may be tight right now, but that too will change. During the economic lull we just need to be creative. Maybe we, as

an industry, can hire out our services to rebuild the country. After all, who would be better qualified to oversee the rebuilding of America than the very same workers who, day after day, build sets, put on shows, strike the sets and move on to the next event on schedule and in short periods of time? Forget credit. At the end of the day the project manager will go in and do a settlement with the buyer. When settlement is complete he'll pay his crew and vendors a fair wage and then it's on to the next day of rebuilding. If someone's work is unsatisfactory then they will not get rehired for another day of labor and a more capable person will get the job.

It's a familiar concept that will help in doing away with waste, graft and profiteering, and just as soon as we get America rebuilt, we can resume our audio lives. In the meantime, since the captain and crew have taken the life boats and left everyone else to tread water or go down with the ship, my advice would be to keep your eye on the prize, but do not compromise. Be competitive, but not deceitful. Our word is our bond; therefore we should honor our agreements and build trust. Work hard and produce something of quality and value. Choose a catchy slogan that builds confidence in your company and advertise (in magazines such as this one) that you are a business that can be relied upon even in the most difficult of times. Some suggestions I might offer for a trust-worthy and beguiling slogan might be, "Audio you can believe in," or simply put, "Sound you can hear." Lastly, good luck and have faith in your ability to swim. **FOH**

COMING NEXT MONTH...

FOH Interview

Jon Martin writes a blog when he is not mixing the Plain White Ts and watching bar fights.

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