

pro sound

NOW IN
PSN
ProAudio
Review

Volume 39 No. 12

www.prosoundnetwork.com

December 2017



IMAGE GROUP LA / GETTY IMAGES

RHETT WHERE HE BELONGS—The annual Country Music Association (CMA) Awards is always a stellar event and this year's edition, presented Wednesday, November 8, 2017, at Bridgestone Arena in Nashville, was no exception. One of the highlights was Thomas Rhett, backed by a five-piece band, bringing down the house with "Unforgettable," the second single from his current *Life Changes* album, sung through his Audio-Technica Artist Elite 5000 Series UHF wireless system with AEW-T6100a handheld microphone/transmitter.

Networking Rules AES

BY STROTHER BULLINS

The 143rd Audio Engineering Society International Convention and Exposition revealed more synergies of people, ideas and technologies than any AES event in history. That's important to consider, as the modern Audio Engineer will touch down in fields of broadcast and content streaming, networked audio, live sound, recording and music production, audio

for games, films and multimedia content—and who knows what else—just within the next year.

As AES attendees found the most carefully curated new technologies on the exposition floor, a broader sense of purpose was emphasized throughout the Javits Convention Center. Co-located with the NAB Show New York event, this year's AES Convention allowed members and attendees to observe the full scope of what it

(continued on page 48)

Sir Paul Circles NYC

Go inside Paul McCartney's recent mini-tour of New York City, where Macca and crew tackled eight sold-out shows, playing two nights a piece at Madison Square Garden; Brooklyn's Barclays Center; across the Hudson River at Newark, NJ; and out on Long Island.



Weathering The 600 MHz Transition

BY STEVE HARVEY

The successful completion of the FCC's Incentive Auction ear-

lier this year set the countdown clock ticking for wireless mic operators, who must vacate the 600 MHz band by July 2020, per the FCC's

timetable. But as a panel of RF experts on opening day of the recent New York AES Convention stressed, some wireless equipment users will be losing access in their regions much earlier.

T-Mobile, which acquired the largest chunk of the 600 MHz band—35 MHz of spectrum—in the FCC's auction, has been aggressively rolling out its new services and intends to have more than one million square miles covered in the U.S. by year's end. During an inves-

tor conference in Barcelona, Spain, in mid-November, CTO Neville Ray said that the carrier is committed to deploying its 5G service in the 600 MHz band—known in the telecom industry as Band 71—nationwide by 2020.

T-Mobile began firing up its new 5G services beginning in Wyoming in August, followed by Maine. The carrier subsequently issued a nationwide list of counties scheduled for deployment of

(continued on page 48)

Focusrite Eyes Support with New Division

Focusrite announced the creation of a new division, Focusrite Pro, at AES. Now CEO Tim Carroll and VP Global Sales Rich Nevens weigh in on why it had to happen and what's ahead for the new brand.



000006372 063-15D1
20008 8006-28029 IL 62082-3008
1169 GOURLEY RD
NO HANS LAND STUDIO
OWNER
BRUCE BUCHANAN
#BXRSRES *****AULTO**3-DIGIT 620
#0393017 9# PSMA 0393017 B 1709



FULL COMPASS
PRO AUDIO VIDEO LIGHTING
MUSICAL INSTRUMENTS



REDEFINE FIDELITY, SUPERCHARGE YOUR STUDIO

FOCAL SHAPE 50 5" POWERED STUDIO MONITOR

ITEM #: SHAPE-50

OUR PRICE \$749

NEUMANN TLM 103 MT LARGE DIAPHRAGM CARDIOID MICROPHONE

Matte Black Finish with SG1 Swivel Mount
ITEM #: TLM103-BLACK

OUR PRICE \$1,099.95

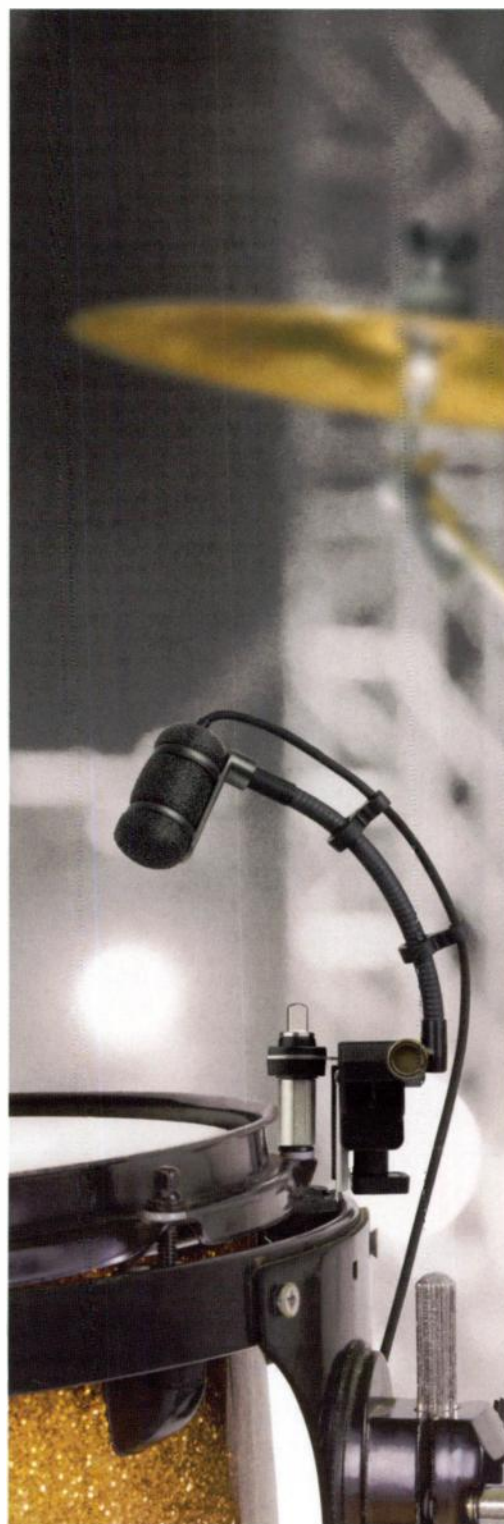
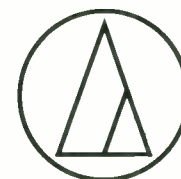
SPL CHANNEL ONE Recording Channel Strip, Model 2950

ITEM #: CHANNELONE

was \$1,799

NOW \$1,599

Upgrade your studio with the latest professional recording technology. Shop fullcompass.com/recording or call **800-356-5844** to speak with a Sales Pro today.



Covered

ATM350a Instrument Microphone Systems

Whatever your instrument, Audio-Technica has an ATM350a microphone system to ensure it sounds great. Not only does this cardioid condenser come with an array of mounts – many with a re-engineered, robust gooseneck built to stay where you set it – but it also provides clear, well-balanced response (even at high SPLs). So no matter what, where or how you play, the ATM350a has you covered. audio-technica.com



woodwinds



piano



universal

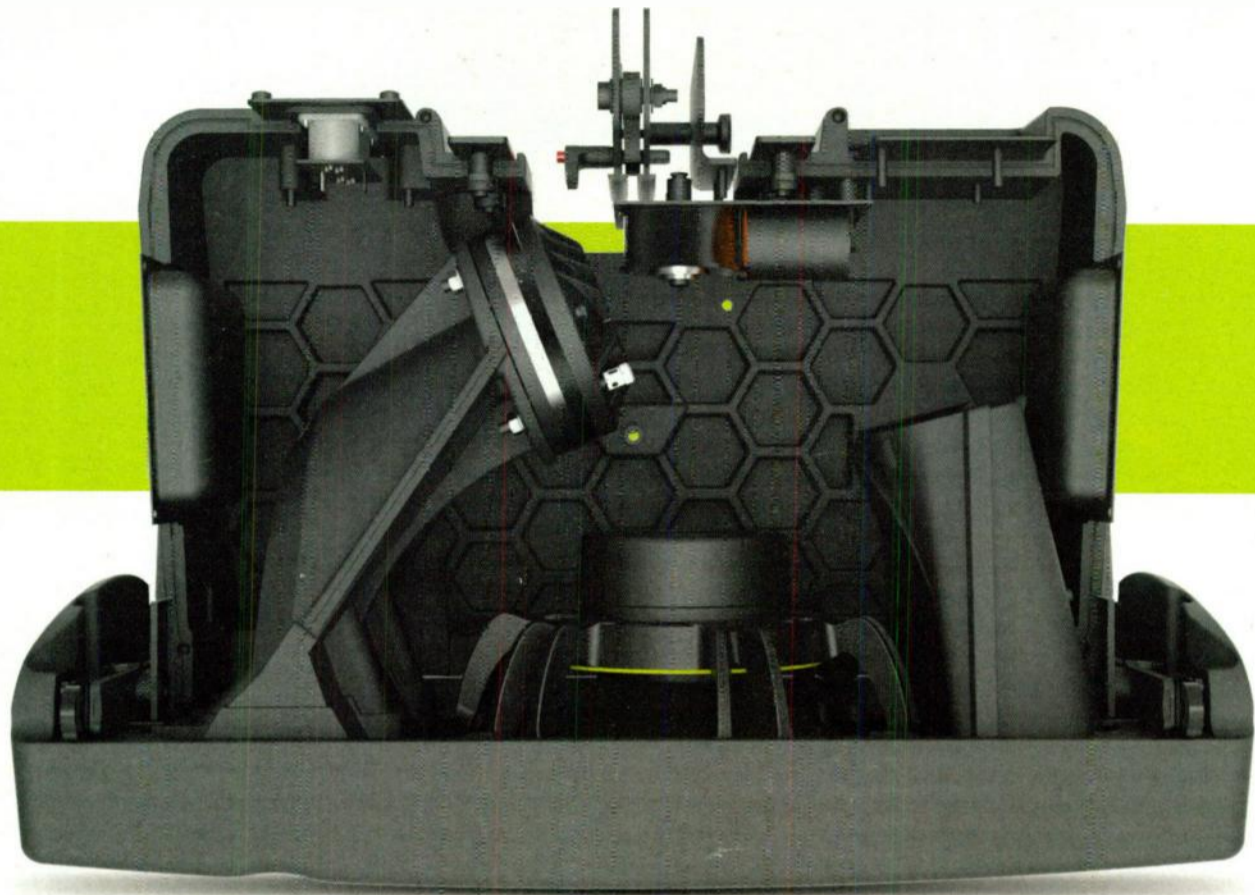


drums



strings

audio-technica



THE WORLD'S MOST **ADVANCED** COMPACT LINE ARRAY

Versatile for a wide range of events, the lightweight GEO M10 delivers an unprecedented listening experience in a compact line array system. GEO M10 boasts 136dB and low frequency response down to 59Hz all from a single 10" driver cabinet. And with the innovative AutoRig™ technology stacking or flying has never been easier or safer.



Take your production capability to the next level with a financing program worthy of the Yamaha name.

Yamaha Commercial Audio Finance

www.ycafinance.com



NEXO

www.yamahaca.com

Yamaha Corporation of America • P. O. Box 6600, Buena Park, CA 90620-6600

WRH

ULTIMATE POINT SOURCE

THE ONES



Hello. We are the world's most compact three-way studio monitors, and the first coaxials without sonic compromise. With uncolored, detailed imaging and incredible on and off axis responses, we allow you to monitor with total confidence, hour after hour. And thanks to the ever evolving Genelec Loudspeaker Manager (GLM™) application, we can adapt to even the most challenging environments.

We're simply Ultimate Point Source monitors, so please excuse us from not keeping a low Finnish profile. We are THE ONES. genelec.com/theones

GENELEC®

Genelec Inc. 7 Tech Circle Natick, MA 01760 (tel) 508-652-0900 genelec.usa@genelec.com

Mackie, EAW, Martin Audio Acquired

BY CLIVE YOUNG

WOODINVILLE, WA—Los Angeles-based private equity firm Transom Capital Group has acquired all audio brands owned by Loud Technologies, Inc.—Mackie, EAW, Martin Audio, Black-

heart, Crate, Ampeg and Tapco—in order to create a new company, Loud Audio, LLC.

The deal was made primarily with an eye toward funding product development and expansion into “adjacent markets,” according to Transom. In a statement, Loud CEO Mark Graham noted, “This transaction is the first step in a broader strategic plan to enable and grow each of our iconic brands. Our brand and product strategies are greatly enhanced going forward as each will be working from a vastly improved financial structure and with access to growth capital.”

With that in mind, the executive team of Loud Technologies will remain at Loud Audio, with an aim of providing continuity. Ty Schultz, managing partner of Transom Capital, remarked, “We have been working closely with Loud’s leadership to ensure continuity of the supply chain, channel relationships and Loud’s employee base. We look forward to realizing the compelling growth opportunities for these brands both in the retail and professional audio spaces.”

It’s not Transom’s first time investing in the pro audio realm—the company previously bought Blue

Microphones in April, 2008; Blue, in turn, purchased Summit Audio in April, 2011, and the pair were sold by Transom to global private equity firm The Riverside Company in July, 2013.

That previous involvement with Blue and Summit is key, according to Graham: “Transom is an exciting partner as they have experience in our industry and a great track record of building brands. Further, they share a commitment to our core values of customer focus and product innovation, and we are looking forward to working together to make our brands even more valuable to our partners and customers.”

Loud Audio, LLC.
loudtechinc.com

briefs

AM&S Takes CAD Worldwide

OLON, OH—Microphone, headphone and pro-audio manufacturer CAD Audio (cadaudio.com) has entered into a worldwide distribution agreement with American Music & Sound (americanmusicandsound.com). “This new relationship with CAD Audio is an exciting time for AM&S,” says Lynn Martin, president of American Music & Sound. “We look forward to maximizing CAD’s penetration in the US and world markets, and are genuinely excited about offering such an innovative line of live, recording and commercial sound solutions.”

ACT Lighting Nets RapcoHorizon

LAS VEGAS, NV—ACT Lighting, Inc., an importer and distributor of entertainment technology, has acquired RHC Holdings Corp., better known as RapcoHorizon, a vertically-integrated manufacturer of interconnect assemblies, audio, data and interface products, and specialty industrial wire. RapcoHorizon brands include ProCo, RAT, RoadHog and StageMASTER.

Spotify Buys Soundtrap

STOCKHOLM, SWEDEN—Spotify has acquired fellow Stockholm-based company, Soundtrap, a web-based collaborative recording and production studio. Acquisition terms were not disclosed. Initially aimed at amateur recordists and musicians, recent years have seen the platform gain traction in the music education sector, ultimately leading to a separate version that was released for educators. According to tech site DI Digital, schools are the company’s largest customer base, fueling the majority of its \$120,000 turnover last year. The acquisition is Spotify’s fourth this year, coming in the wake of purchases of MightyTV, Mediachain and Niland. The streaming service is widely expected to float an IPO sometime in the first half of 2018.

AES Takes Manhattan

BY CLIVE YOUNG

NEW YORK, NY—The 143rd International Convention was greeted with excitement when it opened its doors in mid-October at Manhattan’s Jacob Javits Convention Center. It had been two years since the annual convocation was held in New York City, so audio pros had been waiting patiently to spend four days immersing themselves in everything pro audio. This year’s theme, “Maximum Audio,” was apt, then, as the event found the Javits Center packed to the max with gear, workshops, panels, papers, lectures, tech tours and far more.

Some of that ‘more’ could include attendees themselves, as total registration eclipsed that of last year’s Los Angeles Convention by 24 percent, with 15,590 registrants versus LA’s 12,540 registrations. The technical program in New York also drew more than 40 percent more All Access attendees than 2016, setting a new milestone.

Speaking onsite during the convention, Bob Moses, AES executive director, had an inkling of the final tallies to come: “Our registration team says it’s the largest first day of activity they’ve seen in a decade. The technical sessions are packed with enthusiastic attendees, and our volunteer convention committees continue to raise the bar, year after year, with the quality and range of content in the technical program. We have convention co-chairs Agnieszka Roginska and Paul Gallo to thank for their amazing leadership. They, and the talented full convention committee they assembled, supported by the hard-working, AES headquarters team, have produced an energetic and bus-



The annual Audio Engineering Society Convention is the kind of place where you might meet a legendary performer like Stevie Wonder or an equally legendary engineer like Geoff Emerick—or run into the two of them meeting each other, as happened at this year’s edition.

ting exhibition floor and a full four days of fascinating sessions covering every aspect of professional audio.”

The upswing reflected the re-energized AES, which has aggressively reinvented its outreach and vision in recent years. At the Opening Ceremonies, outgoing president Alex Case recounted new innovations, including bringing increasing amounts of the Society’s vast wealth of audio papers, videos and resources online for members to access. Later, keynote speaker Prof. Edgar Choueiri of Princeton University took the stage to discuss a variety of emerging technologies expected to bolster immersive audio within the next few years, including isolated sweet spots, accurate 3D imaging, navigable soundfields, audio teleportation, 3D Telecon through Headphones, visual source sonification and more.

Elsewhere, convention featured workshops and panels explored everything from constructing podcasts to enacting theatrical vocal miking, to product development seminars and more, while Technical Tours took attendees away from the Javits Center to places like the legendary Power

Station at Berklee NYC (formerly Avatar and Powerstation). Elsewhere, the long-running Project Studio Expo and Live Sound Expo were joined by new additions—the Broadway Sound Expo, Broadcast Audio Expo and Software@AES, all providing real-world audio education for all attendees, right on the exhibit floor. And of course, that exhibit floor sported the latest and greatest offerings from top manufacturers, on-hand to present their gear, answer questions and more.

Instead of a two-year wait for the next AES Convention in New York, the grand event will return to the Javits Center next October 17-20, 2018, co-locating once again with NAB Show New York. For those nearer to the West Coast, you can get your fill of AES next month at the debut AES@NAMM Pro Sound Symposium, Live and Studio, to be held in NAMM’s education campus, adjacent to the Anaheim Convention Center, during The 2018 NAMM Show, which runs January 25-28, 2018.

Audio Engineering Society
aes.org



[22]



[27]



[42]

SOUNDRECORDING

Sound On Sound Sets Up in New Jersey 20
After 30 years of owning studios in Manhattan, resilient recorder Dave Amlen had to close MSR (formerly Right Track) in Times Square. Now he's back with a new multi-room facility, Sound On Sound, nearby in New Jersey.

Studio Showcase: Neato Mastering . . . 22
Piper Payne didn't plan to become a sought-after mastering engineer, but a journey from Michigan to a Norwegian tape transfer facility to San Francisco's Coast Mastering paved the way. Now she's hung out her own shingle in Oakland with Neato Mastering.

SOUNDPOST/BROADCAST

Decibel Dives into Divergent Deliverables 27
Creative collective Lively Group has founded a new sound division, Decibel, dedicated to providing post for every audio deliverable an ad campaign needs, from Snapchat and Instagram teasers to traditional 60-second TV spots.

What's The Angle on ATSC 3.0? 27
Dr. Richard Chernock, chair of ATSC Tech Group 3, reveals details of the next-gen broadcast TV standard at a joint SMPTE/AES/SBE presentation in Hollywood.

SOUNDTECHNOLOGY

Sound Innovations: CORE by DPA . . . 29
DPA Microphones has developed a new 'CORE by DPA' amplifier technology that is now embedded in its various lines. Explaining the changes, product manager René Mørch says CORE will minimize distortion and provide cleaner, more open and natural sound reproduction.

Pro Audio Review in PSN 30, 31, 32, 33, 34
Reftone 2LD Monitors; IK Multimedia iLoud Micro Monitors; Eve Audio SC203 Monitors; Gig Gloves; Ultimate Ears Sound Tap; IK Multimedia iRig Pre HD; Blue Raspberry Studio; Cloud Cloudlifter Zi; OWC Thunderbolt 3 Dock; Nyrius Aries Pro Wireless HDMI Transmitter and Receiver; AmpliVox SW925 Travel Partner Plus Battery-Powered PA System; Yamaha TF-Rack Digital Mixer; Stocking-Stuffer Books

SOUNDPRODUCTS

Studio Products 36
SR Products 37

SOUNDREINFORCEMENT

Live Sound Showcase: Paul McCartney 40
Go inside Paul McCartney's recent mini-tour of New York City, where Macca and crew tackled eight sold-out shows, playing two nights a piece at Madison Square Garden; Brooklyn's Barclays Center; across the Hudson River at Newark, NJ; and out on Long Island.

DEPARTMENTS

Sound Business	5
Classifieds	48
Sound People	46
Advertiser Index	49

CHARTS

Tracks	24
Centerstage	44



SPECIAL REPORT

AES Convention Wrap-Up . . . 1, 5, 12, 14, 18, 19, 25
This year's Audio Engineering Society Convention, held in New York City, drew record crowds and greeted them with everything they could ask for, from cutting-edge technology to enlightening education to thoughtful social change.

COLUMNS

softwaretech	25
Duck and cover! It's the return of the annual Anderton Awards.	
viewfromthetop	47
Gilad Keren, CEO of Waves Audio, LTD., looks back at how a chance encounter while in the Israeli military led to co-founding one of the most prominent plug-in manufacturers in the industry.	
music,etc.	50
Jaques Sonyieux talks with Portugal. The Man ("Feel It Still") about studio life, staying relevant and becoming overnight sensations after playing the better part of 4,000 shows over the last 13 years	



follow us ONLINE

subscriptions:
www.mypsnmag.com
facebook:
www.facebook.com/
pages/pro-sound-news-
magazine/71616690976



online:
www.prosoundnews.com
twitter:
www.twitter.com/
ProSoundNews

480MHz

490MHz

500MHz

510MHz

520MHz

530MHz

540MHz

550MHz

INTRODUCING AXIENT® DIGITAL

SOLVE THE SPECTRUM SQUEEZE.

Don't let the limits of the spectrum define the size of the sound. Axient Digital delivers 184MHz of tuning bandwidth, Quadversity™ antenna diversity, and up to 47 active channels per 6-MHz TV band, for impeccable audio every time.

Learn more at shure.com/axientdigital

SHURE
LEGENDARY
PERFORMANCE™

CLIVE YOUNG
cyoung@nbmedia.com

editorial

CLIVE YOUNG, editor-in-chief
212-378-0424, cyoung@nbmedia.com

TOM KENNY, editorial director
650-238-0345, tkenny@nbmedia.com

STROTHER BULLINS, technology editor
336-703-9932, sbullins@nbmedia.com

STEVE HARVEY, editor-at-large
818-909-9790, sharvey.prosound@gmail.com

CRAIG ANDERTON, JAQUES SONYIEUX, ROB TAVAGLIONE, RICH TOZZOLI, contributors

RUSS LONG, senior contributor

advertising

JANIS CROWLEY, jcrowley@nbmedia.com
publisher

SUE HORWITZ, sue@audientmarketing.com
GENE KINSELLA, g.kinsella@comcast.net
JOANNE MELTON, jmelton@nbmedia.com
DEBBIE ROSENTHAL, drosenthal@nbmedia.com
advertising sales

ZAHRA MAJMA, specialty sales,
zmajma@nbmedia.com

art & production

NICOLE COBBAN, senior art director

WALTER MAKARUCHA, JR.,
associate art director

FRED VEGA, production manager
212-378-0445, fvega@nbmedia.com

audience development

MICHELE FONVILLE, circulation coordinator

SUBSCRIPTIONS: PRO SOUND NEWS,
www.MyPSNmag.com
P.O. Box 234, Lowell, MA 01853

TEL: 888-266-5828
(U.S.A. ONLY, 8:30 A.M. - 5 P.M. EST)
978-667-0352 (OUTSIDE THE U.S.)

FAX: 978-671-0460
E-MAIL: newbay@computerfulfillment.com

NEWBAY AUDIO GROUP

ADAM GOLDSTEIN, executive vice president/
group publishing director

RAGAN WHITESIDE, web director

ROBERT GRANGER,
online production manager

NEWBAY CORPORATE

STEVE PALM, president & ceo

PAUL MASTRONARDI, chief financial officer

TOM ROUSSEAU, chief revenue officer

JOE TERRITO, chief content officer

CARMEL KING, executive vice president,
content and business operations

ANTHONY SAVONA,
vice president, content creation

MEG ESTEVEZ, vice president/corporate director,
audience development

ROBERT AMES,
vice president of digital strategy & operations

ANTHONY VERBANAC, vice president,
information technology

RICK NG, controller

LIST RENTAL: 914-368-1024,
jganis@meritdirect.com

REPRINTS and PERMISSIONS:
For article reprints, please contact our Reprint
Coordinator at Wright's Media: 877-652-5295

FOUNDED IN 1978
BY PAUL G. GALLO

PRINTED IN THE U.S.A.
INTERNATIONAL EDITION
Administrative, Advertising,
& Editorial Offices
28 E 28th Street, 12th floor
New York, NY 10016
TEL: (212) 378-0400
FAX: (212) 378-0435
E-MAIL: pro@nbmedia.com


Some Holiday Spirit for Pro Audio

As I write this, the holiday shopping season is about to go supernova as Black Friday is only days away. It's a crucial time of year for all retailers, regardless of whether they're online or traditional brick-and-mortar outlets. According to the National Retail Federation, 2017 will see U.S. holiday retail sales bump up between 3.6 and 4 percent this year, reaching \$682 billion as consumers spend an average of \$967.13 each.

In step with that, Adobe predicts holiday e-commerce spending will hit \$107.4 billion for a 13.8 percent year-over-year growth—a finding that lines up with NFR's prediction that 59 percent of all buyers will be making purchases online. As a result, cyberspace has now become the most popular shopping destination, beating department stores (57 percent) for the first time. Brick-and-mortar retailers will see a 10 percent rise in sales this holiday season, too, but the 24-hour news networks have dubbed this development the 'Retail Apocalypse.'

Disaster or not, a growing shift towards the online world could have serious economic consequences down the line. Shopping in real-world spaces not only puts money in the coffers of big-box stores and your local mall, but also boosts employment figures with seasonal help (Target alone plans to hire 100,000 temporary workers this year), plus there's additional ancillary costs like gas, parking, food and, once you add up your

receipts, Advil.

If holiday shopping is going to become a turf war between e-commerce and physical retailers, many predict that the latter will start aggressively reinventing shopping spaces in an effort to lure shoppers away from their screens and back into the malls.

As it happens, those views dovetail with the findings of a new market report from UK analysts Futuresource Consulting, which predicts the global pro loudspeaker market will hit \$3.6 billion by 2021, fueled in part by investments from the commercial retail world to create more enticing shopping environments.

The report places the loudspeaker market currently at a \$2.6 billion value worldwide, examining seven product segments (point source cabinets, line arrays, column arrays, compact systems, studio monitors, flush mount and cinema sound) across five broad segments (rental, portable sound, installed leisure, cinema sound and installed commercial).

All regions of the global market are expected to grow, with the Americas remaining the top market, but the report predicts that Asia will soon become the second largest market as it grows to an expected \$1.3 billion by 2021. EMEA would accordingly slip to third place, but it should still see growth during that time regardless.

There's numerous parts of the pro-loudspeaker industry that will be powering that hardy growth, but

none more so than installed leisure and installed commercial verticals; they are expected to be the busiest sectors, with more higher-value projects in the former, but far more work in the latter.

With the retail world combatting e-commerce, the report expects some retailers to draw on audio to help create more exciting shopping venues, which in turn would mean more work and product volume going into that sector. It appears, however, that loudspeaker manufacturers that are tied into larger technological ecosystems—whether popular networking protocols or parent companies with wide-ranging holdings—will have an edge on the competition.

"Moving forward, the brands that will succeed will be those who reinvent themselves as end-to-end solution providers," said Chris McIntyre-Brown, associate director at Futuresource Consulting, in a statement. "When it comes to installation, being able to offer a complete system which includes amplifiers, microphones, networking, zoning systems and security systems could be the difference between winning and losing. Bosch is already successfully doing this and Harman is well placed to do the same."

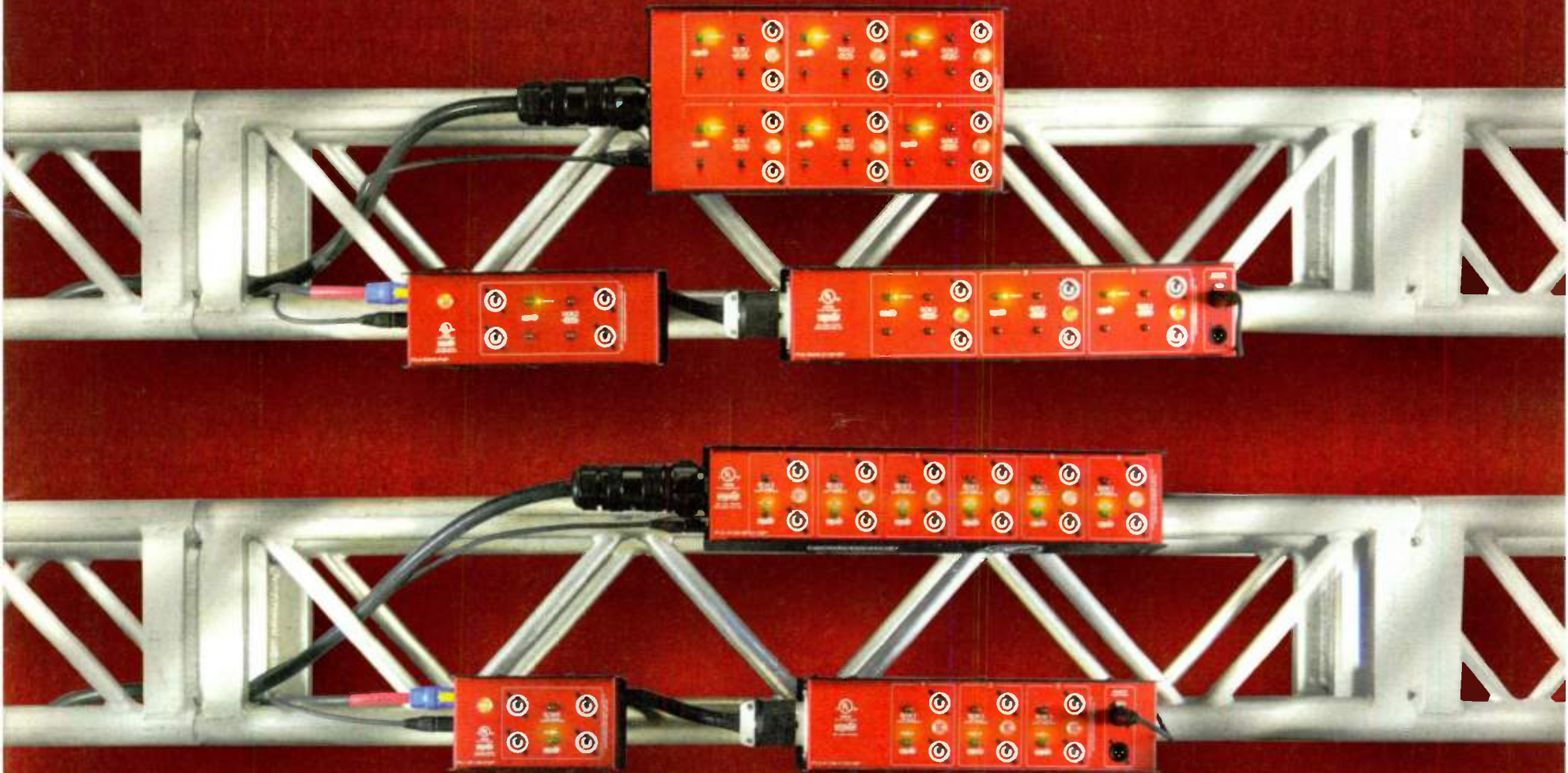
Will these predictions come to pass? It's hard to say, but one suspects that if they do, loudspeaker manufacturers and systems integrators will have plenty of holiday spirit in the coming years.

Acoustic treatments as unique as you.

AcousticsFirst.com
Materials to Control Sound & Eliminate Noise.™

Toll-Free Number: **888-765-2900**

whirlwind



POWER DOWN REMOTELY AND GIVE YOUR GEAR A REST

Power Link® PL2 stringers with power management.

Our hugely popular Power Link® PL2 stringers are now available with integrated UL® listed ROK™ modules, providing a convenient way to power-cycle equipment consuming electricity even while not in use. Our innovative design allows multiple circuits to be energized/de-energized with simple contact closures, via 3-pin XLR. PL2 ROK™ stringers are the perfect solution for power-cycling lighting fixtures, projectors, video displays and powered speaker arrays. PL2-R120 units are for use

in 120 VAC circuits and PL2-R240 stringers are for use in 240 VAC single phase or 208 VAC 3-phase circuits. All PL2 ROK stringers include a PL2-FB bracket for truss-mounting (clamp not included), XLR 3-pin male and female loop-through control connections, and neon circuit indicators. Any type of single-pole maintained switching, mechanical or programmable GPIO, with a compatible current rating can be used to operate PL2 ROK™ stringers. To keep things simple, you can use a standard mic cable to easily daisy chain units.

whirlwind
Power Link®



The ROK REMOTE PLR-RR6 -- our 1-RU, easy to use controller.

1-800-733-9473  whirlwindusa.com



Made in USA



We've Got Your Back—

Shop Online
or Call Today!
Sweetwater.com
(800) 222-4700



MIDAS
PRO2 - Tour Pack



MIDAS
VENUE S6L

We Carry Gear from These Respected Manufacturers and Many More!

- | | | | | | | | |
|----------------|-----------------------|------------------|-------------------|--------------------|----------------|---------------------|-----------------|
| A Designs | Ashly | Aviom | Cakewalk | Daking | Earthworks | Galaxy | IsoAcoustics |
| AEA | Aspen Pittman Designs | BBE | Celestion | Dangerous Music | Electrodyne | Gator Custom Shop | iZotope |
| Ableton | Aston | Benchmark | Chameleon Labs | Dave Hill Designs | Electro Voice | Gator Frameworks | JBL |
| AKG | ATC | Bettermaker | Chandler Limited | dbx | elysia | Genelec | JDK Audio |
| Allen & Heath | Atlas Sound | Beyerdynamic | Chauvet Pro | Decksaver | Eminence | GML | JHS |
| Antelope Audio | Audient | Blue Microphones | ClearSonic | Denon | Empirical Labs | Golden Age | JK Audio |
| Aphex | Audio-Technica | Blue Sky | Cloud Microphones | DiGiGrid | Eventide | GoPro | JoeCo |
| API | Audix | Bock Audio | Coleman Audio | Digital Audio Labs | FabFilter | Grace Design | Joemeek |
| Apogee | Auratone | Bose | Countryman | Direct Sound | Focal | Granelli Audio Labs | K & M |
| Apple | Avalon | BOSS | Crane Song | DPA | Focusrite | Great River | KRK |
| Argosy | Avantone Audio | Bricasti Design | Crown | Drawmer | Fostex | Heritage Audio | Kush Audio |
| ART | Avid | Burl Audio | Cymatic Audio | Dynaudio | Furman | Hosa | LaChapell Audio |

Pro Audio ■ Recording ■ Mixers ■ Monitors ■ Microphones ■ Guitars ■

2-YEAR WARRANTY

TOTAL CONFIDENCE
COVERAGE™ WARRANTY

FREE TECH SUPPORT

GET PROFESSIONAL
SWEETCARE SUPPORT, 24/7

LOWEST POSSIBLE PRICES

GET THE GEAR YOU WANT,
AT THE RIGHT PRICE

FLEXIBLE FINANCING AND LEASING

WE'LL HELP YOU FIND A WAY
TO GET IT TODAY!

FAST, FREE SHIPPING

ON MOST ORDERS, WITH
NO MINIMUM PURCHASE!

and Your Front of House

Live or in the studio, your reputation as a sound pro depends on doing consistently great work. So you need products and support you can depend on — year in and year out — for any gig. For over 35 years, Sweetwater has been there for pros like you, with service and attention to detail unparalleled in the industry. Call us today.



YAMAHA
CL5



CABLE FINDER Find any cable in 3 easy steps! Sweetwater.com/cables



CASE FINDER – The easiest way to find exactly the right case for your gear! Sweetwater.com/casefinder

Latch Lake	Marantz	Neumann	RAB Audio	sE Electronics	Sound Construction	TC Helicon	Universal Audio
Lauten Audio	McDSP	Nuage	Radial	Shadow Hills Industries	Soundcraft	Teac	Valley People
Lexicon	MicW	pArtScience	Rane	Shure	Sound Devices	Telefunken	Vienna Instruments
Lindell Audio	Midas	Peavey	RapcoHorizon	SKB	Soundtoys	TK Audio	Vintech
Line 6	Middle Atlantic Products	Pete's Place	Raxxess	Slate Digital	SPL	Toft Audio	Warm Audio
LittLite	Mighty Bright	Primacoustic	Retro Instruments	Slate Media Technology	Stedman Corporation	Tonelux	Waves
LM Cases	Miktek	Pro Co	RME	Slate Pro Audio	Steinberg	Triad-Orbit	Westone
Lynx	Millennia	Propellerhead	Rob Papen	Solid State Logic	Studio Projects	Trident Audio Developments	Whirlwind
Maag Audio	Mogami	Pultec	Roland	Sonnox	Summit Audio	True Systems	WindTech
Mackie	Mojave Audio	Purple Audio	Royer	Sonodyne	Switchcraft	Tube-Tech	Zoom
Malone Design Works	Moog	QSC	Rupert Neve Designs	Sony	TASCAM	Ultimate Acoustics	
Manley	MOTU	Qae Audio	Schaepts	Soundelux	TC Electronic	Ultimate Support	

Keyboards

Drums

Live Sound

Sweetwater Has All the Gear You Need!

"Never has there been a better buying experience. Sweetwater is always my number one choice for all my needs."

Johlene from Richmond, KY

Sweetwater[®]

Music Instruments & Pro Audio

(800) 222-4700
Sweetwater.com

AES Formalizes Focus on Diversity, Inclusion

BY STROTHER BULLINS

NEW YORK, NY—Anyone who has been paying attention to the news at all in recent years has heard the phrase “diversity and inclusion” again and again as being one of the aims of a society attempting to live up to the words and ideals of the country’s founding fathers. Another type of society—the Audio Engineering Society—did its own part at its convention in October to become a reflection of an evolving demographic by introducing its first Diversity and Inclusion (D&I) Committee via town hall forum. Moderated by AES vice president (Western Region) Leslie Gaston-Bird, the event was an effort to define the new committee’s purpose to 143rd Convention attendees and the public in general.

Notably the first African-American to serve on the AES Board of Governors, Gaston-Bird precluded the open panel discussion by first framing the Society’s diversity in terms of both demographic differences amongst its members as well as variances in disciplines, genres and styles within audio engineering. “It’s so important to get different viewpoints on what diversity actually means,” she offered. “So what is diversity? We think of diversity, of course, in social contexts. A lot of people think about race—having diversity with maybe a token person representing some-

thing—but it doesn’t have to be just race, or ethnicity, [or] age—whether you’re on the older or younger end of the spectrum—[or] nationality, or even physical ability. But as the members of the committee began to talk about what diversity meant, it is also [about] diversity [within] what we do and how well the Society represents all of these different disciplines...so I think it’s important for us to constantly engage with our membership and let them know that we are listening, and we want to appeal to everyone we can.”

Gaston-Bird went on to explain how diversity stats are not clear, as reported by an article in *The Atlantic*, reportedly due to members leaving out details on membership forms. “That article quoted a paper saying, ‘well, we don’t really know what the gender breakdown [of the AES] is because not everybody fills that information out.’ So we want to encourage people to complete that [section] and maybe even get into some more demographic data. How are we going to do that? It’s going to take planning and input from the community.”

Creating more diversity amongst audio engineers in the future is indeed happening, explained Terri Winston, founder and executive director of the Women’s Audio Mission, and it all starts with education. “We’re heading into our 15th year, and we’ve trained



Members of the first AES Diversity and Inclusion Committee members are (l-r): Leslie Gaston-Bird, AES vice president (Western Region); Terri Winston, founder and executive director, Women’s Audio Mission; Piper Payne, owner, Neato Mastering and president of San Francisco’s Chapter of the Recording Academy; Karrie Keyes, executive director of SoundGirls.org; Leslie Ann Jones, recording engineer and producer, director of Music Recording and Scoring at Skywalker Sound, 2017 AES Heyser Lecturer; AES executive director Bob Moses; and AES president Alex Case.

over 10,000 women and girls in audio,” she notes. “We’re up to training 1,500 women and girls every year, and are about to push that to 3,000 women and girls every year. So we’re not focusing on the data; we know that the data is bad. We’re focusing on the solution. We’re very focused on education, [teaching] underserved girls. 90 percent are girls of color; 96 percent are low income. We are embedded in both the San Francisco and Oakland unified school districts, so we are looking at systemic change here. Our curriculum has been included in the Common Core for both of those districts. It’s great to see how great middle school girls take to this. The barrier is more around socialization and less around their capabilities or interests.”

“As an organization, our mission is to lift our industry,” noted Bob Moses, executive director, Audio Engineering Society. “We do that through education, innovation and building community through events like this one. It breaks my heart when there are people who feel that they are not invited, that we’re not open. It’s the furthest thing from the truth. And if there’s something that this group can achieve, it’s to let everyone know that they are welcome. I don’t think we have a higher calling than what the essence of this group is.”

“Yes, the AES reflects the industry and whatever imbalances there are, but it’s not enough to wait for the industry to gradually change,” offered

(continued on page 18)

AES President Scheirman Outlines Tripartite Agenda

BY STEVE HARVEY

NEW YORK, NY—In his recent role as chair of the AES President’s strategic planning team, David Scheirman helped promote outreach and alliances leading to this 143rd convention’s co-location with the NAB Show New York and the inaugural AES@NAMM in January 2018. Now, as he steps into the position of AES president, Scheirman has his eye on three core areas offering further expansion possibilities.

The first, he says, is finding ways to better connect with colleagues overseas. “We are a U.S.-based organization, but we are truly international in scope. Three of the major areas where we’ve seen strong membership growth are Latin America, Eastern Europe and Asia.”

There has been a tremendous increase in the number of electrical and acoustical engineering graduates in China, India and Pakistan, he says—countries where interest in

audio technology is a cornerstone of their education and research institutions. AES membership has doubled over recent years in China, and Scheirman has been invited to address the 2018 International Symposium of Electro-Acoustic Technology at Nanjing University on the benefits of AES membership.

Secondly, “I’m pleased to be coming into the presidency at a time when we are getting a new AES Diversity and Inclusion Committee on our Board of Governors, working with my colleague Leslie Gaston-Bird, AES Western Regional VP for the U.S. and Canada, and co-chaired by Piper Payne,” he says. “We’re seeing a welcome increase in focused activities—social and educational panels and workshops—and we’re glad to see an increasing number of professionals in organizations like SoundGirls.com.”



David Scheirman

Thirdly, says Scheirman, the student population has long been a focus of the AES. “We support them as we can, with the student delegate assembly, which has global participation. We fund travel for regional officers of that committee to our international conventions.”

In celebration of UNESCO’s World Day for Audiovisual Heritage (October 27), he also notes, AES conference chair and past president John Krivit announced a new scholarship for student archivists from emerging nations to travel to and participate in the 2018 AES Conference on Audio Archiving, Preservation and Restoration at the US Library of Congress’ National Audio-Visual Conservation Center in Culpeper, VA.

“We are increasingly finding ways to connect young men and women graduates entering the field of audio

engineering around the world with career opportunities, to network with and be mentored by working career professionals,” says Scheirman. The society is also working to raise awareness among student engineers of the diversity of pro audio job opportunities. “There are many, many career opportunities available outside of the traditional studio recording or sound reinforcement communities—audio for games and virtual reality, forensic audio, automotive audio,” he says.

Scheirman, an AES member since 1975, has been involved with PA rental companies, an installed system integrator, an electro-acoustical measurement laboratory, a computer-control system developer, a networking technology R&D firm and leading loudspeaker manufacturers. He has served in a variety of roles with the AES, including three terms on the Board of Governors.

AES
aes.org

"Once you hear the difference ... you'll never go back."

~ Terry Lawless - U2

"The Radial J48 is one piece of kit that can be relied upon in my worldwide touring. It is not only reliable but delivers what it needs to do... and that is good audio."

~ Paul 'Pab' Boothroyd
Paul McCartney, AC/DC,
Paul Simon, Faith Hill, Pink

"The BT-Pro is remarkably great sounding and reliable, wirelessly interfacing my iPad virtual synths etc. Radial, you've done it again!"

~ Bob Rice
Engineer/Programmer:
Neil Young, Roger Waters,
Chick Corea

"Radial direct boxes make everything I put through them warm, punchy and clear. They are great DI's"

~ Chick Corea
Elektric Band, Miles
Davis, Return to Forever

"The JDX gave me all the character and distortion without the worries of bleed and feedback. I was so surprised how close it sounded to the SM57, I had to double check the patch."

~ Jim Warren
Radiohead, Arcade Fire,
Nine Inch Nails

"Our Radial JDI's are rugged, reliable, and sound great - so much better than the competition - in fact there is no competition!"

~ Alan Parsons
The Beatles, Pink Floyd,
Alan Parsons Project,
Al Stewart

"The USB-Pro is the most useful device to come along for a while. With all the video and computer backing tracks these days I could not live without it."

~ Dave Natale
FOH: The Rolling Stones,
Fleetwood Mac, Tina Turner

"Once you hear the difference between a Radial DI and the others, you'll never go back... and after hundreds of U2 shows around the world, they have worked flawlessly."

~ Terry Lawless
Keyboards and
programmer - U2

"Consistent, coherent tone night after night. No mic stands getting kicked around ruining that precious sweet spot you spent all of that time obsessing over, the JDX simply rocks!"

~ Eddie Mapp
Evanescence, Stone Temple
Pilots, Papa Roach

JDX 48™ amp DI

The phantom powered JDX 48 captures the signal from the head and the back impulse from the cabinet for consistent guitar tone night after night. The perfect solution for amazing in-ear monitor sound!



USB PRO™ stereo USB to audio DI

High performance 24 bit/96kHz stereo DAC, easily connects any computer or compatible USB audio device to your mixer. Transformer isolation and ground lift to eliminate hum and buzz, powerful headphone out for monitoring, plus mono sum switch



J48 Stereo™ phantom powered DI

The J48 Stereo 2-channel active DI retains the true character of the instrument without introducing distortion or artifact. The world's finest active DI times two!

BT-Pro™ Bluetooth® DI

The BT-Pro is a compact stereo Bluetooth receiver with a large reception range that makes it easy to play walk-in/walk-out music without being tethered to the console.



JDI Stereo™ passive DI

Equipped with two Jensen™ audio transformers, the JDI Stereo handles huge transients without distortion and warms up the tone of acoustics, active basses and digital pianos.



Radial direct boxes have become the trusted 'go-to' choice for the most demanding artists and renowned audio engineers. Why? Unmatched sound quality, intelligent design and proven reliability. Radial DI's... true to the music.

Radial
engineering
...power tools for power players™

1588 Keblet Way, Port Coquitlam BC V3C 5M5 tel: 604-942-1001
visit: radialeng.com



Copyright ©2017 Radial Engineering Ltd. Appearance and specifications subject to change.

Adamson Fills Czech Stadium with Krystof

PRAGUE, CZECH REPUBLIC—Prague's Evzena Rosického Stadium recently sold out two shows by one of the country's most popular acts, Krystof, as it celebrated its 25th anniversary. For the occasion, SR provider ZL Production fielded a sizable PA based around Adamson E-Series and S-Series loudspeakers.

The main stage was adorned with left and right hangs of 15 E15 cabinets per side, with a half-dozen S10 compact boxes underneath each. More hangs of 15 E15s each were used as side arrays, supplemented with three S10s underneath each one. For fans in the back, a delay tower had left and right arrays with a dozen E15s and three S10s per side, plus side delay hangs with a dozen E12s per side. Conversely, for those up at the front, six SpekTrix boxes handled front fills from the stage lip. And giving some thump to it all were 32 Adamson E219 subwoofers flown per side, with six T21 subs per side stacked beneath the stage.

Krystof's FOH engineer, Jiri



Adamson E-Series & S-Series were used for Krystof's recent shows in Prague.

"Topol" Novotny, was enamored with the experience of the two shows, noting, "Strahov was a beautiful and powerful moment of my life, thanks in large part to a great-sounding audio system. I'm a long-standing fan of Adamson, but I've never heard a stadium application with such powerful and punchy low-end before this show.

"[ZL Production's Ondrej Turecek]'s subwoofer set-up was amazing, especially considering the size of the stadium, and we had truly great audio covering the entire site. I'm very grateful for the experience."

Adamson Systems Engineering
adamsonsystems.com

Community System Covers IKEA Goyang

GOYANG, KOREA—IKEA recently opened a new seven-floor, 164,000-square-meter building in Goyang, Korea; throughout the facility, Community pendant loudspeakers are used for the background music and announcement system.

When IKEA commissioned the building, it turned to Inter-M Corp. to create the background music and announcement system.

In turn, Byoung Dock Choi of Inter-M's SI Team chose Community pendant loudspeakers, demoing them in the space for IKEA officials.

Ultimately, the system designed by Inter-M uses 105 Community DP6s and 62 DP8 loudspeakers, all driven

by Inter-M DPA Series amplifiers. The multi-zone system uses Inter-M 7000 Series electronics throughout, providing input, control, monitoring and zoning.

Inter-M's design reportedly achieved an even coverage of 80~85dB, exceeding the required specification and meeting IKEA's requirements for the system.

Community Pro Loudspeakers
communitypro.com



A new IKEA store in Goyang, Korea sports a sizable Community pendant loudspeaker system.

EXCEED EXPECTATIONS!



"60 Years of innovation"

visit hafler.com

Hafler

Hafler CI Series multi-channel amplifiers are designed to sound good, save money, last a long time and be simple to use. These are the cornerstones of what make Hafler such a compelling choice for today's most demanding system integrator. Available in 6, 8 and 12 channels with 55 to 120 watts per channel, these true class-AB amps sound great! They are feature-packed to handle just about any situation and can be customized with plug-in modules like Dante™ audio networking over Ethernet (shown), balanced inputs for long runs or Jensen™ transformers to add isolation and eliminate noise. **ecosystem™** adds another dimension with an energy saving 'sleep mode' and the fastest turn-on time in the business. Hafler... amplifiers made to exceed your customer's expectations.

Copyright ©2017 Radial Engineering Ltd., all rights reserved. Specifications and appearance subject to change without notice.

Dynaco

Hafler and Dynaco are trademarks of Radial Engineering Ltd. 1588 Keblet Way, Port Coquitlam BC V3C 5M5

Mixing 4,000 Voices on Tour

BERLIN, GERMANY—Marking the 500th anniversary of the Reformation, *Luther*, a massive pop oratorio about the event, toured Germany, with the last of 12 performances taking place October 31 at Berlin's Mercedes-Benz Arena with more than 11,000 spectators and a newly formed 4,000-singer choir. Berlin manufacturer Stage Tec was a sponsor of the entire tour, providing three mixing consoles for the show.



Carsten Kümmel (left), the project's lead sound engineer, and composer Dieter Falk at the FOH Stage Tec Aurus platinum console.

At each stop on the tour, a Stage

Tec Nexus audio network with up to 11 Base Devices was set up and connected via fiber optic cables. A 32-fader Aurus platinum console mixed all the music—choir, orchestra, effects and band—while the second FOH Aurus platinum with 16 faders mixed the soloists exclusively. Most mixing was done live; the choir monitor mix was accomplished on the third desk, a 16-fader Stage Tec Auratus.

Stage Tec
stagetec.com

Bag End Powers *Hamilton* in UK

LONDON, UK—The hit musical *Hamilton* remains one of the hottest theatrical properties on Broadway, and now will debut in London this month.

For the new production at the Victoria Palace Theater, returning sound designer Nevin Steinberg utilized eight Bag End low profile subwoofers and Infra processors. The low profile double 12, model D12E-DA, was originally designed for sound consultant Dale Alexander (DA) while he was at Acoustic Dimensions in Dallas, TX. Designed to fit tight locations, the D12E-DA is 9 inches tall.

Bag End
bagend.com

Going Analog in Hamburg

HAMBURG, GERMANY—Located in Hamburg Altona, near the city's Reeperbahn, Chefrog Studios is a commercial facility housed on the top floor of an old industrial building, featuring a main control room equipped with an analog Neumann console and a range of analog outboard equipment. Also on-hand are a large recording room, a vocal booth and a client lounge.

While much of the gear is vintage, Chefrog has outfitted all three of

its rooms with PMC monitors: IB2S monitors in its main and second control rooms and a pair of AML2 monitors with an SB100 subwoofer in a smaller studio/writing room.

"All our PMCs sound amazing," says Tilmann Ilse, who set up Chefrog Studios with Peter Keller.

"When we set up Chefrog Studios, we realized we needed something bigger, especially for the main control room, so we chose wall-mounted IB2s. They have great imaging, no distor-



Peter Keller (left) and Tilmann Ilse founded Chefrog Studios in Hamburg, Germany, outfitting all three of its rooms with PMC monitors.

tion, tonal clarity and sound the same at every level, even low levels."

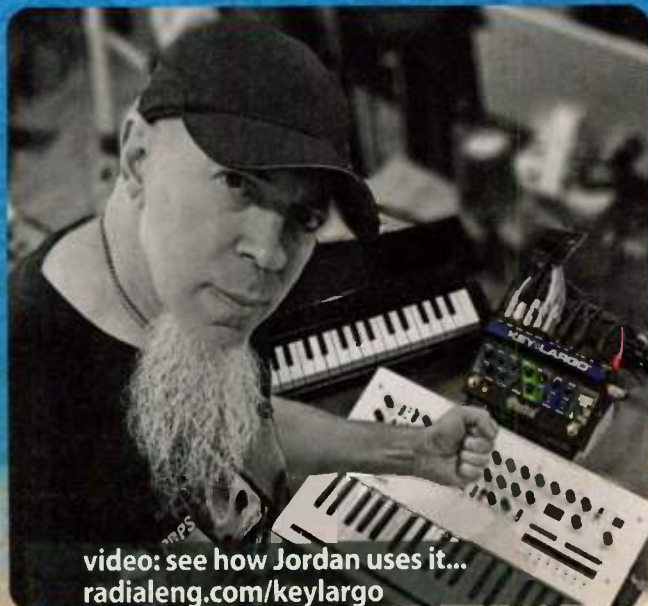
PMC
pmc-speakers.com

The performance mixer... for keyboards!

The most versatile, dynamic, exciting keyboard mixer ever... and because it's from Radial, you know it's going to be good! The Key-Largo features four stereo channels, 24-bit /192kHz USB i/o, effects loop with footswitch, monitor out for stage, isolated XLR outputs for the PA, a volume pedal jack, MIDI, there's even a built-in sustain footswitch!



Key-Largo: small box...
Large Sound!



"The Radial Key-Largo is my new best friend! It's hard to believe all the audio connectivity goodness inside this compact unit. After I plugged in 2 stereo keyboards, my stereo iPad and my Seaboard as well as a standard MIDI keyboard through the DIN port, all I could do was smile!"

~ Jordan Rudess

Keyboard player, composer / Dream Theater, David Bowie, Liquid Tension Experiment, Dixie Dregs, Steven Wilson

Radial
engineering

power tools for power players

radialeng.com

1588 Kebet Way, Port Coquitlam BC V3C 5M5
tel: 604-942-1001 email: info@radialeng.com

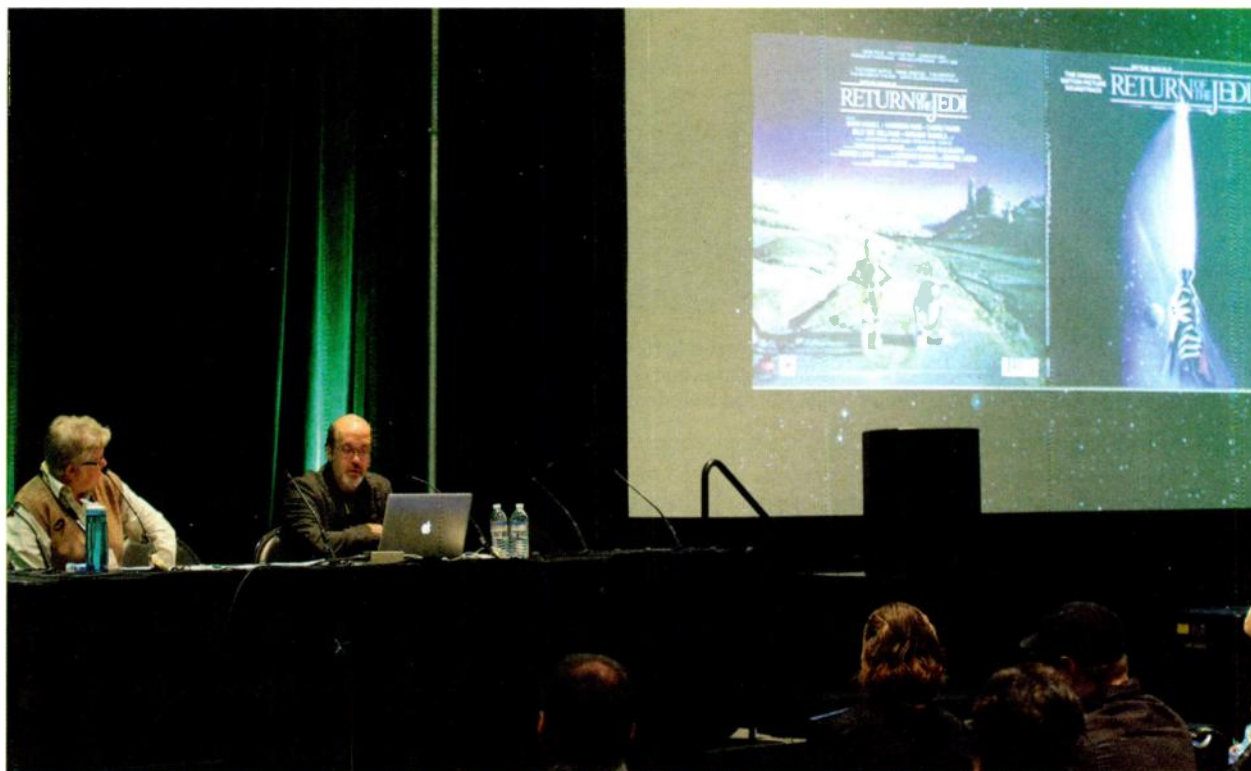
At AES: Saving The Music of *Star Wars*

BY STROTHER BULLINS

NEW YORK, NY—At this year's AES Convention, a packed special event, *Bearing Witness: The Music of Star Wars, Archiving Art and Technology*, featured Skywalker Sound's Leslie Ann Jones and Dann Thompson as they detailed their efforts for Sony Classics' re-release of soundtracks from the iconic film series, Episodes I through VI. Morphing into an archival and restoration mission for the first six films, the process was, in fact, a journey through the various recording platforms from 1977 to 2005.

"In April of 2012, we were asked to make a digital transfer of a half-inch master of a cue from Episode VI [*Return of the Jedi*] by Matt Wood, who apprenticed under [sound designer] Ben Burtt and is now the main sound supervisor for the *Star Wars* films," explained Jones. The impetus was Sony Classics moving to re-release the soundtracks from Episodes I through VI on CD as well as vinyl alongside Episode VII.

"We wanted to look for the original elements in order to make 32-bit, 192 kHz masters," she continued, "and the search really took several weeks to find out what were the appropriate two-track elements to use.



Skywalker Sound's Leslie Ann Jones and Dann Thompson detailed their efforts to archive and preserve the music of the *Star Wars* film series.

record releases]," Jones explained, "so we were able to give Sony Classics what they needed and they released a whole box set, including the vinyl. But it really got us thinking again about all this fantastic music. Not only archiving it—because it was mostly on analog tape and mag—but also it really could not be used in the format

not necessarily the same," offered Jones. "[For the earliest films], the soundtracks were very much like the music that came out on the film. On the later episodes, they were not like the film at all. Many of the cues were cut from the film and were not heard in their entirety—even on the soundtrack records—because John

cued from Episode IV's mag—Jones offered, "You know, we're very lucky because we get to sit in the control room and listen to all this music. It's pretty stunning. Just as a composition and separate from the film, John is just a brilliant writer. And to do six full-length, two-hour episodes, he finds a way to sneak in these themes...I'm just in awe of this experience."

Next, the pair played a full composition, "Droid Invasion" from Episode I, previously unreleased. Following more audio examples of their restoration work, Jones posed, "Not only is this the music of *Star Wars*, but it is also the history of film-scoring technology. When you think about all the different formats that we have available to us, how people worked then and how they work now, it's so different. So you should be able to hear some differences—1977 shouldn't sound like 2007—so the cue [from Episode I] that you just heard has EQ, reverb, surround and LFE."

"There are two reasons for archiving: to transfer things to the highest resolution possible and to repurpose, so people can enjoy them...and it was a monumental task."

Leslie Ann Jones

At least for the first episodes—Episodes IV, V, and VI—we were looking at two-track masters, production masters, EQ copies."

The search included European versions with different EQ curves, productions from an old *Star Wars* radio show and more. "For the later episodes—Episodes I, II and III—they used the masters from Pat Sullivan [mastering engineer of all *Star Wars*

it was in. There are two reasons for archiving: to transfer things to the highest resolution possible and to repurpose, so people can enjoy them... and it was a monumental task. Fortunately, Dann has had loads of experience in mag and every format that we came into contact with.

"The idea was really to have a film version and a CD version [of the music] because they were

[Williams, composer] wanted to create a listening experience on the soundtrack records. He would actually go into the mastering room with Pat and create different versions of the cues to make something [different]. That meant that the only copy of that was what was on CD; there was no edited master."

After playing the main theme for the AES audience—successfully res-

AES Diversity

(continued from page 12)

AES president Alex Case. "We have to find the points of being proactive to change that. So I think that this committee is the AES saying, 'We're not just going to passively let the industry evolve. Let's find the places where we can play offense.'"

Leslie Ann Jones—recording engi-

neer and producer, director of Music Recording and Scoring at Skywalker Sound as well as this year's AES Heyser Lecturer—lauded the actions of fellow panelists as well as the purpose and promise of D&I's efforts thus far. "I think what Karrie [Keyes, executive director, SoundGirls.org] and Terri are doing in terms of girls and young women is so important. But I do feel like [inclusion] has to be a very holistic effort. Things have really changed since I started—hearing conversations

about people using a genderless name [on job applications] so that they can be treated equally. I chose to use my middle name so people knew that I was a woman [but] I think, with a concerted effort from all of us, [greater diversity in audio engineering] will happen, instead of it being so segmented."

Members of the first AES Diversity and Inclusion Committee members are: Leslie Gaston-Bird, AES vice president (Western Region); Terri Winston, founder and executive di-

rector, Women's Audio Mission; Piper Payne, owner, Neato Mastering and president of San Francisco's Chapter of the Recording Academy; Karrie Keyes, executive director of SoundGirls.org; Leslie Ann Jones, recording engineer and producer, director of Music Recording and Scoring at Skywalker Sound, 2017 AES Heyser Lecturer; AES executive director Bob Moses; and AES president Alex Case. **AES**
aes.org

At AES: Producers Explore Making Music and Money

BY STROTHER BULLINS

NEW YORK, NY—Recognizing ever-increasing demand for some insight into how to get fairly paid for hard work, the AES fielded a special event at its October convention: “Producing Across Generations: New Challenges, New Solutions.”

The panel, led by New York University’s Nick Sansano, director of Production Studies/Co-Director of Musicianship, and featuring audio pros including George Massenburg, addressed the elephant in the room—or, as the AES explained it in event promotional materials, “Music professionals continued to make records for a living. How are they doing it? How are they getting paid? How can we expect to see any income from streaming royalties when artists aren’t even getting any?”

So, what has changed in the industry that requires new approaches to finding work? “Lack of funding is at the top of the list on the negative side, and advances in production/recording technology leads the posi-

tives,” offered Sansano in a pre-event interview. “In fact, without the tech advancing and, in turn, driving down costs, we might have been dead in the water. The DIY aesthetic has kept the song production business and art form alive. To elaborate on the lack of funding, I see this hurting artist development, incubation, etcetera on

“I think pop music has been hurt the most, because it has lost the most commercial value when compared to, say, film, video games, TV, multimedia works, theater and so on,” added Sansano. “Having said that, programmatic or supportive forms of music—that for games, film and TV, theater, to name a few—has not

music has DAWs and photography has Adobe products, many of which are now on a subscription model, bringing upfront costs down and keeping it open-ended in regard to updates and modifications.”

It’s arguable that producing music today has been “democratized,” or the investment necessary for entry into music production has largely eradicated, especially for pop music production. How does this create new or different challenges in succeeding as a traditional music engineer?

“With internet access, everything has been democratized,” Sansano. Said. “Literally anyone can record a song and then release that song to a global audience at the touch of a button; there’s no gatekeeper. Of course, ‘no gatekeeper’ means no standards of quality, artistic merit, commercial merit or order. There is a great deal of ambient noise out there in the democratic ether of the web, but few intelligible voices. Therefore, the challenge comes in the way of marketing, branding, identity and all that supports the ‘why me’ narrative.”

“Literally anyone can record a song and then release that song to a global audience at the touch of a button; there’s no gatekeeper. Of course, ‘no gatekeeper’ means no standards of quality, artistic merit, commercial merit or order.”

Nick Sansano, director of Production Studies/Co-Director of Musicianship, NYU

the artistic side, and the inability to provide for sustainable wages on the business side. Combined, they result in many projects, artists, songs, recording sessions and mixes never reaching their full potential.

been as negatively impacted as pop-music production. The positive aspects of technological change have affected all media. We have infinitely stronger and more affordable software and hardware available. Mu-



“I was suspect at first, but after a few minutes with the Recoils I realized how much difference they made. Especially on the low end. I’m keeping these... they work.”

~ Al Schmitt
(Barbra Streisand, Steely Dan, Ray Charles, Quincy Jones)



“I first heard them at AES and I told Primacoustic President, Peter Janis, that they were snake oil. I was dead wrong. Now I own 6 pairs, so much for my opinion... I can’t record or mix without them.”

~ Vance Powell
(The White Stripes, Jars of Clay, Jimmy Buffett, Faith Hill, The Raconteurs, Jack White, Kings Of Leon, Buddy Guy)



“They cleared up a cloudiness in the bass and mid bass that I had been battling in my studio. I also noticed a clarity in the imaging I didn’t have before. They’re an affordable and effective problem solving product. I love these things!”

~ Ross Hogarth
(Melissa Etheridge, Keb’ Mo’, Jewel, Rooney, John Mellencamp, Jonas Brothers, John Fogerty)



“I love the Recoils! Before them my ProAc Response D monitors couldn’t be turned up without the drivers breaking up. Now, the bottom end sounds tight and I can actually play the monitors louder.”

~ Michael Brauer
(Coldplay, John Mayer, Leonard Cohen, Bob Dylan, My Morning Jacket, Simon & Garfunkel, Paul McCartney, Colbie Caillat)



“The Recoils have become my monitor standard. Wherever my near fields go, my Recoils are right there underneath. I don’t monitor with out them. Thanks for a great product.”

~ Bobby Fernandez
(LA film scoring mixer - Clint Eastwood, Sam Raimi, Tim Burton, Alexander Payne, Peter Weir, Randy Newman)



“The Recoil Stabilizers work very well... they’ve made noticeable monitoring improvements both at home and sitting on top of an SSL in a multi-million dollar studio. The theory behind them makes sense and the results speak for themselves.”

~ Paul Northfield
(Rush, Dream Theater, Moist, Asia, Ozzy Osbourne, Marilyn Manson)

the Recoil Stabilizer™ ...

... a unique reference monitor platform that decouples the speaker and introduces mass to provide a stable, stationary base. The principle is simple – and the results are astonishing, as these top recording engineers and producers attest to here. Try a set and see for yourself. Recoils come in a variety of sizes and angles to custom fit your monitors and subs exactly.

The Recoil - A solid platform to stabilize your sound!



PRIMACOUSTIC®



TEC award nominee

www.primacoustic.com

A division of Radial Engineering Ltd. - 1588 Kebet Way, Port Coquitlam BC V3C 5M5
Copyright©2017 all rights reserved. Specifications and appearance may change without notice.

As Production Music Expands, So Do Possibilities

BY STEVE HARVEY

HOLLYWOOD, CA—The Production Music Association (PMA) held its fourth annual three-day Production Music Conference, on the theme of “Building on the Past, Defining the Future,” at the Loews Hollywood Hotel during the first week of October. The non-profit organization, celebrating its 20th anniversary, works with performing rights organizations, legislators, legal counsel and content creators to improve the reporting, monitoring, collection and distribution of performance fees and royalties for its members.

A recent study by the PMA estimated that production music generates annual revenues of \$1 billion, at least half of that in the U.S. But as keynote speaker David Israelite, president and CEO of the National Music Publishers Association, observed, “We are in a battle over the value of music.” The music publishing licensing apparatus is broken, said Israelite, speaking hours before *Variety* published his guest column on the issue.

While taking music streaming companies to task over their inequitable royalty rates, Israelite also noted that the system makes it “practically impossible to license content prop-



TOMORROW/MINGTIAN

At the annual Production Music Conference, panels like Production Music is the Record Industry: New Avenues for Artist Development (seen here) offered guidance and insight into the changing marketplace.

erly,” invariably resulting in lawsuits. The root problem is that the system is antiquated, resting on legislation from 1909 and a 1941 consent decree. The way forward, he believes, is to establish a transparent database paid for 100 percent by the digital companies that use it, managed by the creative community, with rates based on a “willing seller, willing buyer” model.

That said, the entire U.S. music publishing industry grew 20 percent from 2014 to \$2.517 billion revenue in 2016, he reported, largely due to sync licensing (21 percent of the total) overtaking mechanical licensing (19 percent). That growth, he said, was in large part due to PMA members, who create music for film, TV, commercials, trailers and elsewhere, also placing the work of recording

artists into that media.

Mechanical licensing accounted for half the overall growth, he said, with interactive streaming helping to offset the decline of physical product. Performance royalties account for 54 percent of total revenues.

Several panels discussed the increasingly blurred line between production music and recording artists.

(continued on page 26)

Sound On Sound Sets Up in New Jersey

BY STEVE HARVEY

MONTCLAIR, NJ—After 30 years of owning and operating various recording studios in Manhattan, David Amlen was driven out of the city last year by New York’s construction boom. First, his renowned A509 facility became a victim of Manhattan’s real estate market in 2008, then 2016 found him closing MSR Studios (formerly Right Track, later renamed Legacy) for a different— but related—reason.

“We had lots of business,” says Amlen, “but people couldn’t work,” due to construction on all sides of MSR’s Times Square facility. “We were able to work around it for two years, then the last year became untenable.”

Not one to sit still, he opened the doors to his new two-room Sound On Sound Recording complex in Montclair, NJ in mid-November. Moving to the suburbs, less than a half-hour train ride from the city, makes smart financial sense. Amlen initially scouted Manhattan loca-



Tony Drootin, facility and booking manager (left), and David Amlen, owner, opened the Sound On Sound Recording complex in Montclair, NJ last month.

tions, but the rents were exorbitant: “A space comparable to this one was three times what we’re paying.”

Despite New Jersey’s historic “bridge and tunnel” reputation, the new location, in a former Cadillac dealership, is in a decidedly tony locale. “I drive by Stephen Colbert’s house on the way to work every day,” he says. Indeed, the townships from Maplewood, to the south, north to Englewood are home to

many of the region’s entertainment professionals, including Broadway musicians, jazzers such as Christian McBride, Billy Hart and Wallace Roney, and filmmakers and scoring composers.

Amlen hired industry veteran Tony Drootin as facility and booking manager. Drootin, who spent years as manager of numerous Manhattan commercial facilities, including Sony Music Studios, Unique Record-

ing, Daddy’s House and Platinum Sound, is already taking bookings.

“We have a film score slated, with a 40-piece ensemble,” Drootin reports. “We have a soprano opera singer with acoustic guitar coming. And our first session is a video shoot with DMC from Run DMC; he lives two towns away. There is a huge music community in Montclair, this county and Bergen County.”

The building, with its steel frame and concrete floors, now houses two studios designed by Amlen in consultation with acoustician George Augspurger. Studio A encompasses a large tracking space and four iso rooms, three accommodating a full drum kit, including two that can house a nine-foot grand piano. Up to 15 musicians can fit into the B room, which offers two iso booths. Both control rooms are outfitted with soffit-mounted Augspurger-designed main monitors plus a selection of nearfields.

The centerpiece of the A room is a 72-input Neve VR desk with Fly-

(continued on page 26)

A marriage of simplicity
and superiority

KEF

LS50W Powered Music System

LS50W features audiophile-grade amplification and sound processing, as well as extensive connectivity.

LS50W is driven by factory-optimised 230-watt x2 amplification and features four 192kHz/24-bit high resolution DACs. Combining KEF's Uni-Q driver technology with a time-correcting DSP crossover, LS50W brings a true high-fidelity listening experience to active streaming audio.

Plus, with a wide array of connection options available and a dedicated app offering three levels of customisable EQ control settings, the LS50W is now a complete state-of-the-art audio system.



US.KEF.COM

Oakland's New Mastering Facility Is Neato

BY STROTHER BULLINS

OAKLAND, CA—Mastering engineer Piper Payne grew up as a young drummer in Michigan, taking lessons from early elementary school on. Throughout that time, her grandfather, a carpenter and engineer, became an influencing force in her life, teaching her about building things “and not being afraid to tackle any project by figuring it out as you go,” she says. “I have a little bit of that [working] in me all the time.”

Payne eventually entered the University of Michigan to pursue electrical engineering, relegating musical pursuits to more of a hobby. “I didn’t necessarily want to play drums to eat,” she recalls, “so I started doing electrical engineering and computer science prerequisites at Michigan, then found out [about] the Department of Performing Arts Technology, or PAT program, where I completed my undergrad. For most of the time, I was heavily focused on classical recording, so I learned as much as I could about acoustic and ‘hi-fi’ style recording before going to Norway for grad school in a similar program.”

It wasn’t long before Payne landed a job in a Norwegian tape transfer facility. “That was totally fun,” she recalls. “I was the only one coming up that knew how to run a tape machine, so I was hired to do digitization transfers for this giant company.” Before long, Payne was invited to join the company’s mastering engineer as an assistant, which resulted in a perfect match. “From that first day, I fell in love with mastering. It’s genre-agnostic; for better or worse, we aren’t pigeon-holed, like many engineers and mixers are, into a genre. It’s all about the quality control process and format conversion, and you just so happen to be working on lots of different kinds of music day-to-day. That was really, really attractive to me.”

Having pursued electrical engineering for approximately 18 months before moving to Michigan’s PAT program, Payne had al-



Mastering engineer Piper Payne leans on her latest purchase, a pair of PMC BB5 XBD-Active three-way monitors, housed inside of her own Neato Mastering, a new facility based in Oakland, CA.

ready taken the programming and challenging math courses. “I think that it all made me a better technical engineer, rather than just jumping in from the artistic side,” she reasons. “Mastering is a very technical field, with lots of technical correctness before the art even happens.”

That said, Payne still recalls an important conversation that resonates within her own philosophy of mastering to this day. “Early on in my career, I had a conversation with [Skywalker Sound’s] Leslie Ann Jones, who is [now] a good friend of mine. She said, ‘I hate the word ‘capture.’ I hate the idea that you’re just going to capture a performance.’ A lot of the classical recordings that we have are not just archival; a lot of the classical records that you hear are really larger than life. They’re not just about putting the listener into that original experience that perhaps the recording engineer had. It’s about expressing all the beauty that the performance had and representing that in the best way that you can. That’s what mastering is for me; it’s about the presentation, not just about documenting what happened. [And it’s about] putting in the 10,000 hours of time and experience of disciplined listening that we have to do.”

Those 10,000 hours helped pave the way for Payne’s Neato Mastering; launched this past summer in Oakland, CA, the purpose-built facility resides in the Sharkbite Studios complex at Jack London Square. “Oakland has been a wonderful community for me, and I have a pretty decent local business going on as well,” explains Payne,

who envisioned Neato following a longstanding stint as mastering engineer at San Francisco’s Coast Mastering. “I would say about 30 percent of my business is local to the Bay Area. The rest is from around the world.”

Neato boasts Payne’s favorites in audio processing hardware, including a Manley Labs SLAM! stereo limiter, Langevin Mini Massive EQ, GML 8200 Parametric EQ, and iZ Technology’s RADAR UltraNyquist AD/DA converters as well as her most recent purchase, a pair of

“Mastering is a very technical field, with lots of technical correctness before the art even happens.”

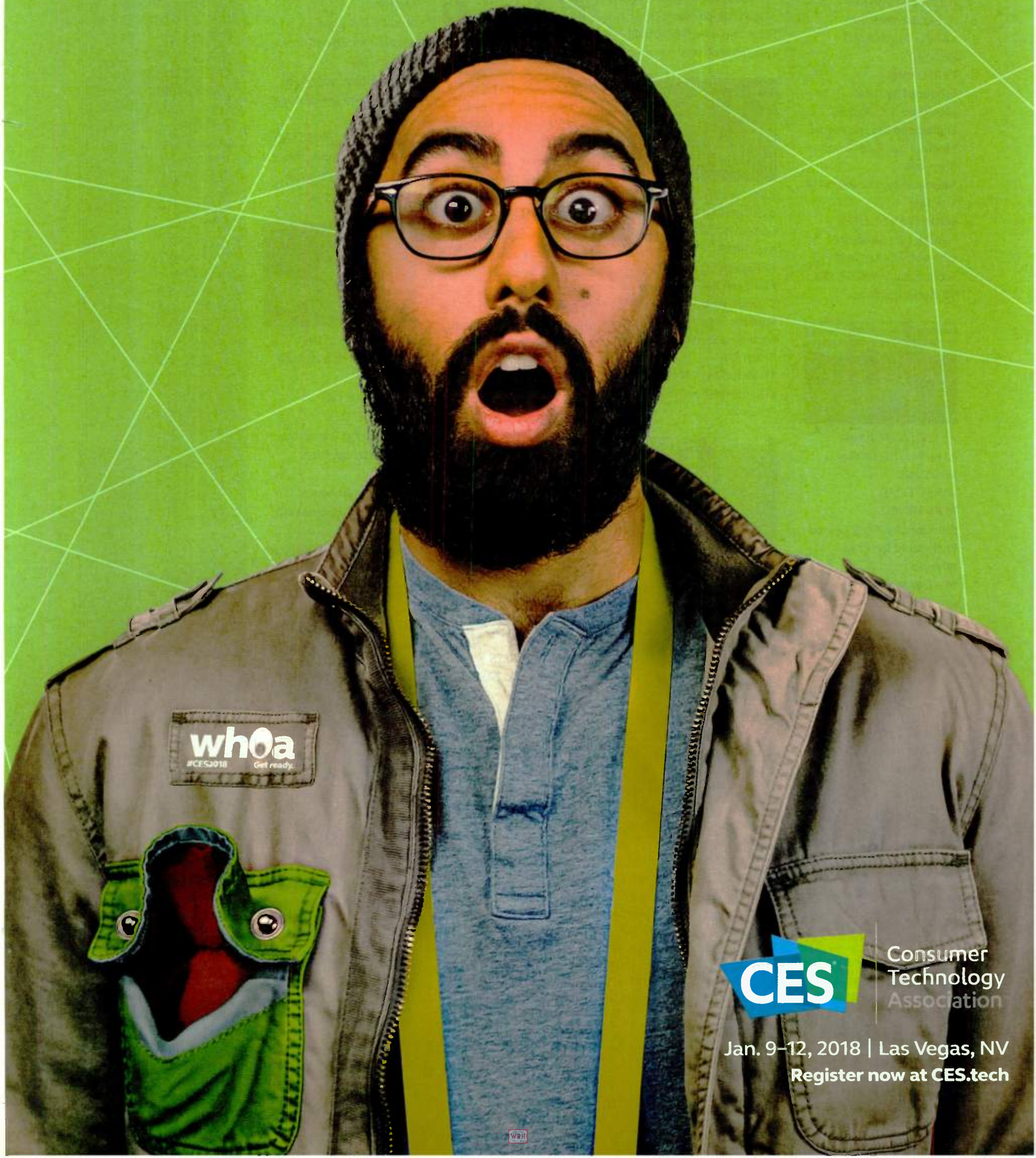
PMC BB5 XBD-Active three-way monitors. “I would consider myself a ‘do only what it needs’ kind-of engineer, so for that, I need a lot of tools,” offers Payne regarding her hardware and carefully curated collection of plug-ins. “The mixes that we’re getting from all over the world are all so very different; there’s not the same kind of common [aural] thread in all of rock or pop music that I can see. It comes from a lot of people working in a lot of different environments, so mastering needs are much more

of a wild card today. For my projects with outboard analog-based, real-time mastering, some of them end up hitting digital and my plug-ins—very specific ones that I’ve vetted for my mastering chain—just to control some of that loudness when they come in. There are professional mixers sending in things that are clipped with distortion in the bass, so I have to do a lot of cleanup and controlling before I can even start to ‘master’ the song.”

Starting a new facility always requires considerable investment, usually incurred upfront and amortized over time. Fortunately, Payne inadvertently avoided that with Neato Mastering: “Over the last six-and-a-half years while I’ve been in the Bay Area and building clientele, I’ve been buying gear. When I made the move to the new studio, to be frank, a lot of it was rebranding myself as an independent business owner. All of my gear came with me, but I had to make a speaker purchase [and] PMC helped me out. Maurice [Patist, PMC president, Sales and Marketing USA] is just an angel; he came to me and helped me get started, and those [speakers] are paid off now, so that feels really good. I was able to start the company with just a new logo, a rebrand, a PR push and the purchase of the speakers. And I’m not in any debt. I own all my equipment and had the room tuned and designed by Maurice, and I have a wonderful team of people that came down to Oakland and helped me construct this, getting it started.” That’s pretty neat.

Neato Mastering
neatomastering.com

See the tech worth a thousand whoas.



Consumer
Technology
Association

Jan. 9-12, 2018 | Las Vegas, NV
Register now at CES.tech



ARTIST: SYMETRIA
ALBUM: SYMETRIA
LABEL: TRIPSQUAD RECORDS

PERSONNEL:

Produced by: Tim McMurtrie, Eric Rachel
Engineered by: Eric Rachel
Studios: Trax East (South River, NJ)
Mastered by: Eric Rachel at Trax East
EQUIPMENT NOTES: NeoTek Elite 32 console with automation; Avid Pro Tools; Focal Twin6 Be, KRK V8 studio monitors



ARTIST: AUTOBAHN
ALBUM: THE MORAL CROSSING
LABEL: FELTE

PERSONNEL:

Produced by: Craig Johnson
Engineered by: Craig Johnson
Mix Engineer: Ben Greenberg
Studios: Private studio (Leeds, UK)
Mastered by: Stephen Quinn
EQUIPMENT NOTES: UA Apollo 16 mk2 / UA Apollo Twin Duo interfaces; Avid Pro Tools; Yamahas NS-10M studio monitors



ARTIST: AWOLNATION
ALBUM: HERE COME THE RUNTS
LABEL: RED BULL RECORDS

PERSONNEL:

Produced by: Aaron Bruno
Engineered by: Eric Stenman
Studios: Black Bear 11

(Malibu, CA)
Mastered by: Vlado Meller, assisted by Jeremy Lubsey, at Vlado Meller Mastering (Charleston, NC)

EQUIPMENT NOTES: Avid Pro Tools; Apple iPhone 7; Tascam DR-40 recorder; Focal Twin6 Be, KRK Rocket 5 studio monitors



ARTIST: KWAMEVI
ALBUM: FAITHFUL
LABEL: ROOTS MUSICIAN RECORDS

PERSONNEL:

Produced by: E.N. Young
Engineered by: E.N. Young
Studios: Imperial Sound Recording Studio (Imperial Beach CA)
Mastered by: E.N. Young
EQUIPMENT NOTES: Avid Pro Tools



ARTIST: PETER MATTHEW BAUER
ALBUM: MOUNT QAF (DIVINE LOVE)
LABEL: FORTUNE TELLERS

PERSONNEL:

Produced by: Peter Matthew Bauer, Nick Stumpf
Engineered by: Nick Stumpf
Additional Engineering: Matt Oliver, Greg Cortez
Mix Engineer: Nick Stumpf; Matt Oliver
Studios: The Hub, New Monkey Studios, Laurel Canyon Center For Consciousness (Los Angeles, CA); Big Orange Recording (Austin TX)
Mastered by: Chris Colbert and Mo Austin at Number Station (Eugene, OR); Kevin McMahon at Marcata Recording (New Paltz, NY)
EQUIPMENT NOTES: UA Apollo interfaces; Burl B2 AD converter; Rascal Tonebuss; Avid Pro Tools; Radial Tank Driver;

Chandler Little Devil 500 series; Standard Audio 500 series; ProAc Studio 100 studio monitors



ARTIST: THE OFFERING
ALBUM: THE OFFERING
LABEL: CENTURY MEDIA RECORDS

PERSONNEL:

Produced by: Nishad George
Engineered by: Marc Fuller
Mix Engineer: Andre Alvinzi, Jens Bogren
Studios: Edie Road Recording Studio (Greenwich, NY)
Mastered by: Andre Alvinzi, Jens Bogren at Fascination Street Studios (Orebro, Sweden)
EQUIPMENT NOTES: Euphonix Artist Mix console; Avid Pro Tools 10; Yamaha NS-10M, Crane Song Avocet studio monitors



ARTIST: JOME
ALBUM: TUNNELS
LABEL: SELF-RELEASED

PERSONNEL:

Produced by: Christoph Andersson
Engineered by: Christoph Andersson
Studios: Private Home Studio (New Orleans, LA)
Mastered by: Christoph Andersson
EQUIPMENT NOTES: Apollo Twin Duo interface; Avid Pro Tools; Yamaha HS8 studio monitors



ARTIST: HOT TEXAS SWING BAND

ALBUM: OFF THE BEATEN TRAIL

LABEL: SELF-RELEASED

PERSONNEL:

Produced by: Alex Dormont
Engineered by: Patrick Manske
Studios: The Zone Recording Studio (Dripping Springs, TX)
Mastered by: Jerry Tubb at Terra Nova Digital Audio (Austin, TX)
EQUIPMENT NOTES: Avid Artist Mix control surface; Avid Pro Tools; Quedsted H108 studio monitors



ARTIST: FRIENDSHIP
ALBUM: SHOCK OUT OF SEASON

LABEL: ORINDAL

PERSONNEL:

Produced by: Friendship
Engineered by: Peter Tramo
Studios: Rittenhouse Soundworks (Philadelphia, PA)
Mastered by: Tom Volpicelli at The Mastering House (Pottstown, PA)
EQUIPMENT NOTES: Rupert Neve Designs 5088 console



ARTIST: SAMMI RAE
ALBUM: THE STORY EP
LABEL: SELF-RELEASED

PERSONNEL:

Produced by: Donnie Klang, Matthew LaPorte
Engineered by: Donnie Klang, Matthew LaPorte
Studios: The Loft Sound Studio (Plainview, NY)
Mastered by: Donnie Klang, Matthew LaPorte
EQUIPMENT NOTES: Avid C24 controller; Avid Pro Tools

DPA Visits the Gift Shop

LOS ANGELES, CA—Record producer, mixing engineer and songwriter Jon Castelli, who has worked with Lady Gaga, Ariana Grande, Kesha, Slack and Macklemore & Ryan Lewis, recently acquired a pair of DPA (dpa-microphones.com) d:dicat 4005A omni mics with Nose Cone accessories for The Gift Shop, his studio loft in downtown Los Angeles.

ATC Roosts at NightBird

W. HOLLYWOOD, CA—NightBird Recording Studios, on the basement level of Sunset Marquis Hotel just off Hollywood's Sunset Strip, has added ATC (transaudiogroup.com) SCM150ASL Pro mains from local retailer RSPE in Studio B, reportedly in response to a shift in what engineers, producers and artists are now demanding from smaller monitors.

Prism Sound Aids Great 78

ROCKAWAY, NJ—U.S. audio and moving image preservation company George Blood L.P. in Philadelphia is using two Prism Sound (prismsound.com) Titan audio interfaces and a custom turntable with four tonearms on The Great 78 Project to create a digitized reference collection of 78rpm records at the rate of nearly 400 sides a day.

Al Schmitt Video Series Debuts

MONTCLAIR, NJ—Hal Leonard and the METAlliance have announced Al Schmitt on Using Microphones, the 16-part first installment of a new METAlliance Academy Series of video tutorials featuring the collective knowledge of the METAlliance members on the Groove3 (groove3.com) platform.

The 143rd AES Convention Anderton Awards



BY CRAIG ANDERTON

With the restraining order from last year's Anderton Awards still in effect (but c'mon—no one actually died from the food), this year the world's only virtual awards show relied on a distinguished panel of judges, none of whom had been convicted of a recent felony. With catering provided by Tony Famolari's Famous Hot Dogs (their slogan: "It's the best of times because it's the wurst of times!"), and with assurances the meat wasn't from actual dogs, the lights dimmed—I guess we kinda need to pay the electric bill—and the Anderton Awards were again poised to recognize products that might not otherwise gain recognition.

So, let's have a warm round of applause for our celebrity presenters: Singer Gort Squeamish and drummer Johnnee Junk from Blarf, the world's most-disliked (but most importantly, least expensive) Sex Pistols tribute band. Pass the envelopes!

The **Donald Trump It's Huge, Really Huge, Huge and Beautiful!!!** award went to the 143rd AES Convention itself—compared to last year, registration was up 25 percent, and the technical programs attracted 40 percent more alleged humanoid bipeds.

iLok picked up the **Death Cab for Dongle** award by offering cloud-based copy protection as an alternative to those delightfully dangling dongles. However, you need a reliable internet connection, so don't expect any booth at the Anaheim NAMM show to use it.

Kludge Audio won the **Transformers—But Not a Dumb Movie** award for the Model 510 Transformer, which is just a really sweet audio transformer in a 500-series module. You know you want it.

The **Excellence in Domestic Argument Prevention** award went to Kii Audio for its compact Kii THREE loudspeaker, which uses clever DSP and multiple radiators to create a near-cardioid coverage pattern without rear reflections—no more arguments about where to put the speakers. Sure, they're \$11.5K/pair...but that's much cheaper than a divorce lawyer.

Dangerous Music again won the **Hey, That Actually Sounds Like Music!** award for its CONVERT-

AD+ mastering converter. Yet the mystery endures: Why does their gear sound good even on the show floor?

The coveted **I Can't Believe They Pay Me to Do This** award went to sound designers using the Krotos audio-mangling Reformer

Pro software, which is designed for real-time performance of Foley and sound effects by morphing audio input with sound libraries. Who wouldn't want to laugh into a mic, and have a laughing tiger come out the other end?

In a highly unusual tie, iZotope

(for Neutron 2 and Ozone 8) and Sonible (for its three EQ+ series products) shared the **Kraftwerk Memorial Rise of the Machines** award for plug-ins that use AI to make audio sound good. Is this the end of engineers? Of course not—

(continued on page 26)

REDEFINE FIDELITY, SUPERCHARGE YOUR STUDIO

JBL 708P 7 SERIES MASTER REFERENCE STUDIO MONITOR

ITEM #: LSR708P

was \$2,499

NOW \$1,999



NEUMANN U87 RHODIUM EDITION

ITEM #: U87-RHODIUM-EDITION

was \$5,750

NOW \$4,599

AVID PRO TOOLS MTRX INTERFACE

ITEM #: 9900-71247-00

OUR PRICE \$4,499



PRO AUDIO VIDEO LIGHTING MUSICAL INSTRUMENTS

Supercharge your studio with technology that achieves new standards in audio quality and clarity—and helps you achieve new levels of success. We've been delivering the very best audio and video equipment, along with unbeatable service, for 40 years. We have an enormous selection, competitive pricing, and expert Sales Pros to answer your questions.

Let us help you get equipped – visit fullcompass.com/recording or call **800-356-5844** to speak with a Sales Pro today.

PMA

(continued from page 20)

Big Little Lions, for example, a duo comprising singer, songwriter and producer Paul Otten and Canadian singer-songwriter Helen Austin, set out to create production music but now work both sides of the fence after a prime placement on NBC's *Night Shift* built their fan base.

"Big Little Lions has become an artist," said Keatly Haldeman of Riptide Music, noting that the duo recently toured Canada. Riptide sees itself as a record label, allocating resources to help take its artists to the next level, he said.

The panel, "Production Music is the Record Industry: New Adventures for Artist Development," also offered advice for recording artists wishing to transition into production music. Get out of the artist mindset of writing for your passion and write for a specific purpose, Haldeman advised. "Study what is working for other people. Make sure the production quality is as high as possible," he said.

"Try to get really honest feed-

back," added JD Adams of 5 Alarm Music.

"A&Ring the World – Using the Internet for Global Access to Make the World Your Studio," explored one company's evolving business model. Brand X Music, one of the first

But now, everybody who is a musician is also an engineer, has a studio and can record their own thing," said Sponsler.

The Brand X roster now includes Wayne Kramer, founding member of legendary rock band the MC5, who

form, and my job as a composer is to serve the director, the film, the show."

Music supervisors and creators on the "Trailerizing Your Music" panel offered advice on the creation of custom music for movie campaigns, specifically covers and remixes. Follow the musical trends, but don't cover the same song you just heard in a trailer, said Toddrick Spalding of agency Mob Scene. "Find different songs; I can't use 'Black Hole Sun' for the eighteenth time."

Before submitting a cover to a music supervisor, contact the publisher and make sure it can be licensed easily, advised Maura Duval Griffin of trailer music library AudioMachine. Some songs have been so overused that the original can no longer be licensed, so publishers are often looking for cover versions, added Bobby Gumm of Trailer Park Advertising. "If you get it to the publisher, they're going to send it to all of us."

Production Music Association
pmamusic.com

"Most guys that come out of rock bands just cannot deal with someone saying, 'It's fabulous, we love it, but it's got to be different.' This is a collaborative artform, and my job as a composer is to serve the director, the film, the show."

Wayne Kramer

libraries to specifically address the movie and game trailer and television promo business, was established by two composers, Tom Gire and John Sponsler, but now draws on a worldwide network of talent.

The library's tenth theatrical music release, *Meta*, is a collaboration with six composers from three continents. "In the old days, we'd have to book a studio and get an engineer.

has successfully transitioned into production music. This is not like rock 'n' roll, said Kramer, who has produced seven albums of production music for Fox Sports.

"There's this other aspect called 'notes,'" Kramer explained. "Most guys that come out of rock bands just cannot deal with someone saying, 'It's fabulous, we love it, but it's got to be different.' This is a collaborative art-

Sound On Sound

(continued from page 20)

ing Faders acquired from the now defunct Blue Jay Studio near Boston, which, during 30-plus years in business, hosted sessions by the likes of Billy Joel, Carly Simon, Aerosmith, Yo-Yo Ma, Roy Orbison, k.d. lang, Lady Gaga, Amy Grant, Boston and Alice Cooper. The desk was refurbished, including a complete recapping, and has been modded by John Musgrave's Mad Labs.

Amlen made the decision to sell the two SSL J Series consoles previously at MSR, bending to what he

sees as an industry trend. "The J has an amazing-sounding mic pre, but there's a bias for Neve," he observes. "We have 72 wonderful mic pres in our large tracking room," with 112 mic inputs from the floor available at the patchbay. Plus, he notes, Pro Tools can be mapped onto the 72 faders for mixing.

The Euphonix System 5 console from MSR has been rehoused in the B room. The desk's EuCon protocol enables its use as a 72-channel Pro Tools controller.

The Euphonix desk has 48 mic preamps with 72 channels of analog I/O, and 80 mic inputs from its tracking spaces. "In a smaller tracking room, 48 pres plus whatever else we

want to roll in gives you a lot of flexibility," he says.

Rather than lose valuable floor space in the control rooms to tape machines and racks of outboard, Amlen has taken a more minimalist approach. "There's basic stuff—a Lexicon 480, an Eventide DSP4000—so for someone who wants to do a quick, down-and-dirty vocal or band session, we have reverbs and cue sends. We have the Aviom system with two dedicated stereo cue feeds in B and up to four in A," he says. The entire facility is wired with Cat 6 and dedicated hi-def video cabling, with tielines between all the rooms and iso booths.

Berklee has announced that its

Power Station facility will be refurbished, and there are several Manhattan studios potentially in precarious positions when their leases come up for renewal over the next couple of years. That presents opportunities for Sound On Sound, Drootin believes.

In any case, he says, the facility already offers advantages over its competition in the city. "We could save people \$400, \$500 a day on a lockout because we're not in Manhattan. And the commute is less than going to parts of Brooklyn."

Plus, he says, "We can fit 30 people in the parking lot—and it's free!"
Sound On Sound Recording
soundonsoundstudios.com

Anderton

(continued from page 25)

plug-ins can't break up fistfights among band members. At least not yet.

The **Fool Me Once, Shame on Me—Fool Me Twice, and It's Virtual Reality** award went to immersive and 3D audio. But can audio ever be made indistinguishable from reality? Yes! It's called "live performance," a groundbreaking new way to enjoy music!

Avid picked up the **Better Late than Never** award for its useful

MIDI enhancements in Pro Tools 12.8.2. Confirmed: after three-plus decades, MIDI is here to stay.

The **Hey Digital Fanbois, It All Starts and Ends as Analog** award was presented to microphones and speakers—Bock's U67 re-creation, Audio Technica's AT 5047, Soyuz's more affordable mics, Sony's dual-capsule C-100 microphone, DPA's CORE by DPA model mics with extra headroom, Samra condenser mics, subs from Dynaudio, PMC's lower-cost, high-end Result6 monitors, HEDD's new three-driver monitors, Genelec's Ones, and the like.

PreSonus won the **Let's Give**

Them Two Big Hands award for the Faderport 16—16 channels of motorized faders for under a grand. It's hand-y!

The **Sixth Sense "I See Red People"** award went to Focusrite. Red multi-format interfaces, RedNet audio-over-IP, and now a new division, Focusrite Pro—you red it here first.

Eventide garnered the Star Trek **"I Actually Can Give You More Power, Captain"** award for the Eventide H9000, whose 16 DSP engines allow for doing insanely great, and possibly illegal, processing in surround productions.

The **Fifth Wedding Anniversary** award was a sapphire presented to the ever-popular Project Studio Expo, which married AES five years ago to help lift the veils of audio ignorance from the masses. Happy anniversary!

And as another Anderton Awards falls off the stage and into the record books, let's bid a fond farewell to AES 2017. As to next year, we don't even have to unpack our bags or move from our deluxe accommodations at the Port Authority Bus Terminal restrooms, because AES is returning to the Big Apple in 2018 for a repeat performance...see you then!

THERE'S MORE ▶ Read David Israelite's guest *Variety* column via prosoundnetwork.com/dec2017



briefs

Sennheiser Supports CMAs

NASHVILLE, TN—Sennheiser (sennheiser.com) microphones and wireless systems were present throughout ABC's broadcast of the 51st Annual Country Music Association (CMA) Awards, in the hands of hosts Carrie Underwood and Brad Paisley, Lady Antebellum, Reba McEntire and PINK, with 130 evolution microphones used for voiceovers, backline and other duties.

Community Broadcasts with Lectro

PORTLAND, OR—Open Signal, which launched in January 2017 as Portland's first full-scale media arts center, offers publicly-accessible production and education facilities, artist residencies and a free equipment library offering seven Lectrosonics (lectrosonics.com) T belt-pack transmitters paired with M152 lavalier microphones.

CMAs Broadcast with A-T

NASHVILLE, TN—The CMA Awards, broadcast live in 5.1-channel surround sound, used more than 140 vocal and instrument microphones from Audio-Technica (audio-technica.com) on backline, with wireless systems for vocalists Thomas Rhett, the McCrary Sisters and Annie Clements.

MPSE to Honor Fasal

STUDIO CITY, CA—The Motion Picture Sound Editors (mpse.org) will present veteran sound designer and sound recordist John Paul Fasal, whose credits include *Top Gun*, *The Dark Knight* and *American Sniper*, with its 2018 MPSE Career Achievement Award at the MPSE Golden Reel Awards ceremony, February 18, 2018.

Shure Sits In at CMAs

NASHVILLE, TN—This year's CMAs, audio producer Tom Davis and production mixer Mark King, with RF coordination assistance from James Stoffo, deployed dozens of Shure (shure.com) UHF-R and the new Axient Digital systems. All wireless in-ear monitoring systems were powered by PSM 1000, while 15 Shure P6HW units were used for hardwired in-ear applications.

Decibel Dives Into New Deliverables

BY STEVE HARVEY

NEW YORK, NY—Lively Group, a New York- and Paris-based creative collective that provides branding, design, production, visual effects and editorial services, has now added a sound division. The new company, Decibel, offers two identical rooms outfitted for 5.1 surround operation with Avid DAWs and control surfaces.

Sound mixers Tom Goldblatt, formerly of Manhattan post facility audioEngine, and Mat Guido founded Decibel along with executive producer Kate Albers, whose resume includes New York's Sound Lounge and agency mcgarrybowen. The team called on Brooklyn-based Crossley Acoustics to provide acoustic and technical design, and integration in the new rooms.

"One room was already a sound room; we kept the bones of it and moved the mix position to make it a little more client-friendly," says Guido. "In the second room, we went all the way down to the concrete slab and redesigned it from the ground up."

The Lively Group, which also includes Spontaneous, BlueRock and



Sound mixers Tom Goldblatt (right) and Mat Guido co-founded Decibel with executive producer Kate Albers (not shown).

Scarlett, occupies four adjacent floors at 575 Lexington Avenue, offering some clients a one-stop shot, says Guido. "They start on the 27nd floor for the edit and work their way down to us on the 22nd floor."

But the mixers also retain their own clients. "It was important for me coming on that I could still service my outside clients and they would be

comfortable," says Goldblatt. "Tom has his clients and I have mine, and we service outside editorial and agencies. It's the same with our sister companies—they have projects they finish elsewhere."

Both mix rooms are outfitted with Avid Pro Tools|HDX systems. "And we're using the S3," reports Goldblatt. *(continued on page 28)*



What's The Angle on ATSC 3.0?

BY STEVE HARVEY

HOLLYWOOD, CA—At a late-October meeting of the SMPTE Hollywood Section co-sponsored by the Audio Engineering Society and Society of Television Engineers, Dr. Richard Chernock, chief science officer at Triveni, presented details of the ATSC 3.0 broadcast standard, which includes several audio advances over the current ATSC 1.0 standard. During an open commission meeting on November 16, the FCC adopted the ATSC 3.0 technical standards suite, popularly known as Next Gen TV, in a 3-2 party-line vote decided by chairman Ajit Pai.

Chernock, chair of the Advanced Technology Systems Committee (ATSC) Technology Group 3 (TG3) and formerly chair of the ATSC Technology and Standards Group (TG1), began by observing, "ATSC 3.0 is a very complicated system. There are 21 documents as part of the standards suite," some of them 200 pages long.

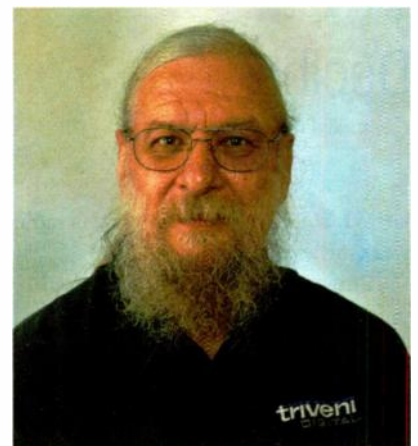
HDTV, retroactively dubbed ATSC 1.0, which replaced analog transmission in the U.S. in 2009, was revolu-

tionary when it was conceived in 1995, said Chernock. But its high-definition video, 5.1 surround sound and multicasting paradigm have been overtaken by newer technologies. Now, viewers expect to consume content on handheld devices and smart TVs, over-the-air for free or over-the-top from streamers, in real-time or on demand.

The goals of ATSC 3.0, said Chernock, are to improve the television viewing experience, add value to the service platform, extend the reach, allow for new business models, provide better quality audio and video, and more accessibility, enable personalization and support interactivity. "And to do it in such a way that you can address changing consumer behavior and preferences," he added.

The FCC's ATSC 3.0 authorization enables broadcasters to voluntarily transmit using the new standard, but they must partner with a broadcaster simulcasting an ATSC 1.0 service. The new standard is not backward compatible; the stipulated buddy system will ensure that consumers continue to receive legacy DTV programming.

ATSC 3.0 is the world's first



Dr. Richard Chernock, Triveni, discussed the future of ATSC 3.0 recently at a SMPTE Hollywood Section event co-sponsored by the Audio Engineering Society and Society of Television Engineers.

broadcast standard built on an internet protocol backbone and offers significant technological advances. It can deliver 4K UHD images with high dynamic range (HDR), as well as interactive features and multichannel immersive audio, leveraging the advantages of both broadcast and broadband.

New advanced and more efficient video and audio compression *(continued on page 28)*

ATSC 3

(continued from page 27)

schemes and more robust modulation enable the signal to overcome physical challenges. “I’ve seen ATSC 3.0 early demonstrations where one 6 MHz channel carried a 4K video, an HD and a standard definition with varying degrees of robustness. The SD was received in the third sub-basement of a building in Cleveland where my cellphone had no signal—and we were watching television,” Chernock recalled.

ATSC 3.0 incorporates two-way capabilities, intended for audience measurement, personalization, interactivity and ad targeting. Privacy and security protections have not yet been hammered out, an issue central to the two dissenting commissioners’ votes.

The standard’s advanced emergency alerting features are designed to wake up sleeping devices to alert people of impending emergencies, and support a variety of video, text, audio and graphic information. Geolocation capabilities enabled by the return path would allow alerts to be targeted only at those in harm’s way.

“A lot of focus was put on audio,” reports Chernock, including new, improved codecs. “ATSC has chosen Dolby AC-4 and the MPEG-H Audio Alliance. Broadcasters in the U.S. will use primarily Dolby AC-4. The systems are similar.”

The new system is object based and immersive, supporting 7.1.4, which includes overhead channels. “You can also get full immersive sound out of a pair of headphones—a thing I find amazing,” he said.

Objects will most likely be used initially for personalization, Chernock believes. “People like to watch sports, and have their preferences for the home team announcer or the away team announcer. By making the announcers objects, you can give the viewer a control that chooses which object, which announcer, to play—or none.” Objects also enable superior video descriptive services to those currently available, which typically

replace the SAP channel due to channel and bandwidth restrictions, he said.

“I have trouble because a lot of dialog fades away amongst the effects and music. If I could turn the dialog up a little, I’d enjoy it better,” he added.

ATSC 3.0 renders audio according to the capabilities of the player. “If you have episodic television or movies aimed at a big screen on the wall and a big sound system, you mix sound a certain way. Play it into a mobile device with a pair of earbuds in a noisy environment and you need a totally different mix,” he said. “Or at home, if the speakers are in the

wrong place because there’s a door where a speaker is supposed to be, these new systems can compensate for that and render appropriately so it comes out correctly.”

Korean broadcasters are already on the air using the ATSC 3.0 standard, said Chernock, and will be putting out 4K UHD coverage of the 2018 Olympics. “You can buy an ATSC 3 UHD television off the shelf from at least two different manufacturers, so they’re ahead of us.”

ATSC
atsc.org

SMPTE
smpste.org

America’s Got SD12s

LOS ANGELES, CA—*America’s Got Talent* implemented two DiGiCo SD12 consoles, at front-of-house and for monitors, for this past summer’s season.

“The audition and elimination round shows are smaller—maybe 50 inputs each—but they’re important for setting the stage for the big live shows,” said Jeff Peterson, project manager on *America’s Got Talent* for ATK Audiotek. The two SD12 consoles shared a single SD-Rack during the preliminary performance shows. “The SD12 was the perfect choice for these events,” he said. “Its small size means it can work in virtually any size venue, but we’re not sacri-

ficing anything in the way of sound quality or operational performance.”

Recordings of the auditions and elimination rounds, which preceded the finals that were broadcast live starting in August, took place sequentially at the Pasadena Civic Center and the Universal Pictures lot in Los Angeles, respectively.

Jason Batuyong, who mixed monitors for the show, says the two SD12 desks were a good fit for the venues. “The form factor was absolutely key for that,” he said. “We knew we weren’t going to need a lot of channels for these events. But what we did appreciate was the SD-



Jeff Peterson, project manager on *America’s Got Talent* for ATK Audiotek, with one of the show’s DiGiCo SD12 desks.

Series’ performance and features, which were a huge step up from what we’ve used in the past on the show.” That said, when the show moved to the finals, which were broadcast live, they transitioned to DiGiCo SD10 consoles.

DiGiCo
digico.biz

Decibel

(continued from page 27)

latt. “It’s a nice, compact but versatile worksurface.”

The pair opted for 5.1-capable monitoring systems, but have allowed for future expansion. “We’re using the Dangerous Music monitoring setup, so we can always add more units and go up to 7.1, 9.1 or whatever we need,” explains Guido.

As for speakers, JBL 7 Series 708 models are installed in the walls with Amphion One15s positioned for nearfield listening. “We also have Avantones for reference, and we run a soundbar so we can hear what it will sound like on a consumer setup,” Guido says.

Inexpensive Mac computer speakers provide an additional critical reference. “I was mixing some music-only spots for Snapchat. We had them up on the JBLs and they sounded awesome,” Guido recalls. “I said, if people are going to be listening on Snapchat, we should just

monitor through computer speakers. Let’s make it sound good on these \$5 speakers.”

There’s no disputing the fact that the internet and OTT platforms are having an impact on audio post shops such as Decibel. “One campaign might encapsulate TV, web and

“You can’t be that specialized these days. You have to cover all the genres.”

Tom Goldblatt, Decibel

mobile. Before, it was 100-percent broadcast,” says Guido.

“Now, we have a list of deliverables for every single project. We might start with a TV campaign and then we will do Snapchat and Instagram versions, six-second pre-roll versions for before a YouTube spot, and there might be a :30 and a :60 TV spot. We might be spitting out

different mixes for Hulu, Netflix, Snapchat and broadcast, so we have to keep up on our spec sheets.”

“One of the first things I did here, a Cigna campaign, went for several weeks, with all the different formats,” Goldblatt reports. “We even did a pretty massive number of spots that were customized for the 50 different companies that Cigna delivers to; that was unusual.”

The turnaround and longevity of campaigns is also changing in the new media landscape. For instance, says Guido, one of Decibel’s sister companies might shoot something for Snapchat in the studio upstairs. “We’ll mix it and an hour later, it’s out there. Twenty-four hours later, it’s disappeared. It’s made quick, up quick, then it’s gone, replaced by the next thing.”

Virtual reality is also presenting advertisers with new creative options. “When I started out in VR, you could get a job just because you knew how to do it. If you had the tools and you could deliver it, you got the job,” says Guido.

“Now that Pro Tools has integrated first-, second- and third-order

Ambisonics, it’s getting easier and easier to do VR. We’re working on a few VR campaigns right now, working with a big tech company that is developing a headset and we’re doing some original music, immersive sound design and mixing for VR.”

The team at Decibel places no limits on its service offerings. “We’re trying to do it all; whatever we can to service our clients,” says Guido. In addition to the VR campaigns, Goldblatt and Guido are working on several original music projects, potentially have a feature-length film coming up, and regularly work on TV commercials, long-format work and a variety of sound design, mix and record jobs.

“You can’t be that specialized these days,” Goldblatt stresses. “You have to cover all the genres.”

Decibel
decibel.nyc

THERE’S MORE ▶ Watch “Even More Drama” from Cigna’s *TV Doctors of America* campaign, with sound design and mix by Decibel at prosoundnetwork.com/dec2017

innovations: the manufacturer's view

Making A Major Leap:

'CORE BY DPA' AMPLIFIER TECHNOLOGY

BY RENÉ MØRCH

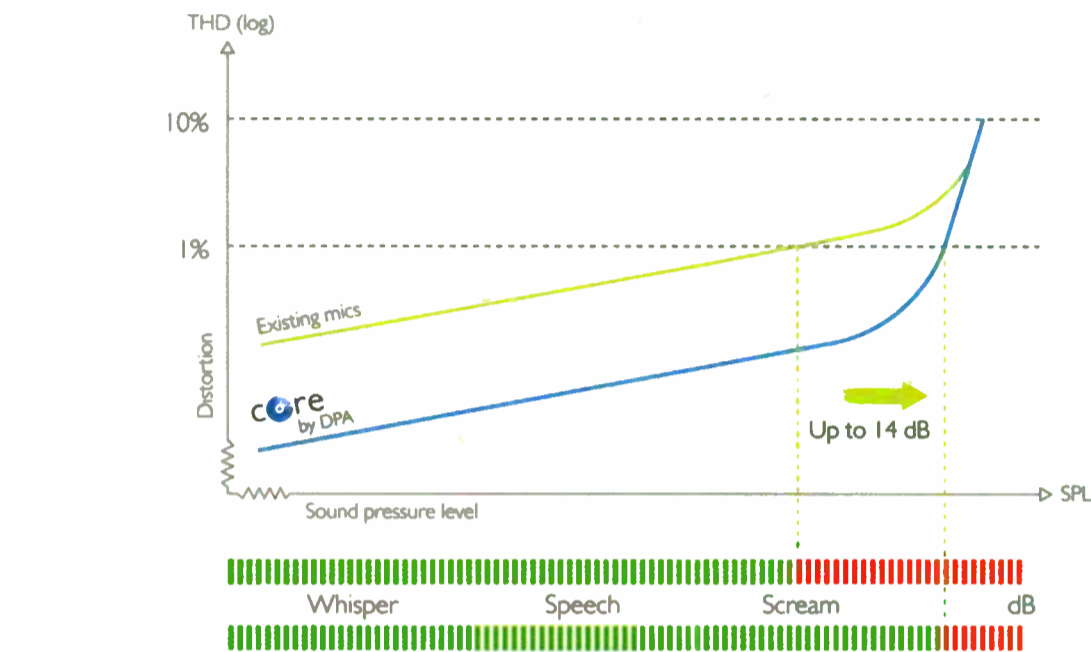
DPA Microphones is known for developing small miniature condenser microphones used where the ultimate sound quality is of the utmost importance in environments that demand a lot from the mic in terms of durability, clarity and fantastic sound qualities.

Condenser microphone technology drives these pea-sized acoustic transducers, with DPA Microphones leading the pack in terms of achieving amazingly high performance in such small packages with its d:screet Miniature, d:fine Headset and other microphone lines. Recently, we have driven this performance level even higher with the development of a new 'CORE by DPA' amplifier technology, which minimizes distortion and provides an overall cleaner, more open and natural sound reproduction, from a whisper to a scream. Furthermore, it expands the microphones' dynamic range, giving a larger range of undistorted sound.

While a small diaphragm microphone is not perceived by many to be able to reproduce the lowest frequencies due to its small size, it is actually quite the opposite. It reproduces these frequencies with very high accuracy just as well for the rest of the whole frequency range. This is partially due to the very small and lightweight diaphragm, and the small housing that does not disturb the sound field in which it is placed. The use of condenser microphone technology ensures unsurpassed transient response, but also calls for an impedance converter, also known as an amplifier.

DPA is already known and respected for its ability to deliver undistorted sound from the lowest low to highest high, but the new 'CORE by DPA' technology adds even more clarity and openness.

The DPA way of driving the electronics within the miniature mics is a heritage from the measurement industry, where linearity is a must in order to produce high-performing microphones. Therefore, DPA miniature microphones have always been based on a current drive where 1 mA must flow in the circuitry in order to obtain optimum working conditions. This is still the case with the new



A distortion graph illustrating comparative measurements of using 'CORE by DPA' technology.

'CORE by DPA' technology, as five times the amount of silicon has been added to the circuitry and thereby extended the linear range of the electronics and diaphragm system.

In general, DPA microphones do not compress the audio when levels are going up. This linear behavior has even been extended with the introduction of this new technology. While not expressed in the specifications of the new 'CORE by DPA' microphone types, these units are reported from high-end users in the pro-audio industry to have the same sonic characteristics as the legacy products. However, they have an even higher degree of openness, never before found in such small microphones, but typically expected from larger microphones.

Depending on the model, the dynamic range has been boosted by 6 to 14 dB. This equates to a doubling of dynamic range in the d:screet 4060 Miniature Omnidirectional Microphone from 100 dB to 106 dB, and an even bigger boost (four times) in dynamic range in other models, such as the d:fine 4066 Omnidirectional Headset Microphone, with a move from an already very respectable 97 dB up to 111 dB. This increase in dynamic range fits very well to the dynamic ranges found on modern digital wireless transmitters, so there is a much better match between the microphones' ability to pick up low levels of sound, while still leaving

room for the dramatic level changes when going from a whisper to loud sound effects, such as a gunshot. The transmitter can handle these sudden changes and so can the microphone; when the gain is set correctly, there will be no distorted or compressed sound.

It should be pointed out, too, that this rather large increase in dynamic range did not come at the cost of a higher noise floor. It remains the same as in previous DPA models at a very respectable 23 dB(A) for the d:screet 4060 and 26 dB(A) for the d:fine 4066. In fact, other than the enhanced dynamic range, none of the microphone specifications have changed at all.

DPA's breakthrough 'CORE by DPA' amplifier technology platform took a lot of effort to achieve, as the complexity of the circuitry went up dramatically without any increase in either the physical size of the amplifier package or in its power consumption. Both goals were achieved with 'CORE by DPA' amplifiers easily fitting into existing microphone designs and with the same supply voltage requirements of 5 to 15 VDC. The design is truly remarkable in terms of what we achieved in a very small space.

Mindful of the fact that many of our users may not wish to instantly phase out their existing microphones and move to 'CORE by DPA' tech-

nology, the company has announced it has no immediate plans to discontinue legacy d:screet or d:fine products. Both legacy and 'CORE by DPA' versions have identical frequency response, sensitivity and sound pickup patterns. 'CORE by DPA' models can be added to a user's inventory as desired, or as needed for more demanding applications. They will typically be quickly adopted in the film and theater industry, where consistency is a vital part of the production. For users with both 'CORE by DPA' and legacy DPA models, DPA is making it easy to distinguish between these very minuscule and compact devices, by adding a blue label on the microphone's cable near the unit's serial number. There's also a very distinctive, yet discreet laser-engraved "core" on the microphone housing.

Since the beginning, DPA's products have set the bar for performance, innovation and quality of workmanship. The 'CORE by DPA' technology represents yet another step in achieving microphone perfection. Watch for it to appear in other microphone lines offered by the company—including the d:vote Instrument Microphone series this spring.

René Mørch is the product manager for DPA Microphones.

DPA Microphones
dpamicrophones.com

2017 Holiday Gift Guide for Engineers

The holiday season is once again upon us, and I have a few hints as to what may be the perfect gift for your favorite engineer or producer—or even yourself!

BLUE SATELLITE HEADPHONES

Nothing suits an on-the-go engineer or producer better than a nice pair of headphones and the new Blue Satellite (\$299) is an excellent option. Blue is still a newcomer to the headphone market but the style, comfort and sound quality of its phones has garnered respect both inside and outside the music community. The Satellite is Blue's latest offering and the first to include wireless functionality and noise-canceling features—and, I must say, they've done it right.

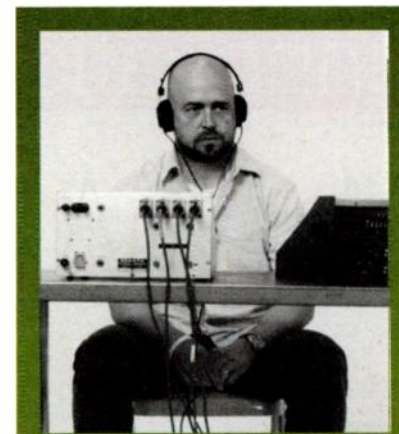
The Satellite, which is substan-

tially less cumbersome than previous Blue models, is truly built for portability. They look great and are available in two colors, black and silver or white and brown, and include a semi-hard case that is perfectly sized for a backpack or small bag. The headphones' earcups swivel, allowing the case to be thinner than expected, and a small pouch in the case includes a micro USB charging cable and a 3.5 mm audio cable for wired operation, making them equally adept for studio use.

Buttons on both earcups control the headphones' functionality (Bluetooth pairing, noise cancelling, hi-fi amplifier activation, power, volume, phone control, etc.). Charging is via a micro USB port. In noise-canceling mode, with the hi-fi amplifier acti-

vated, I was able to get just over eight hours of use from a single charge.

I've been using the Satellites around the clock over the past month for both studio use and on-the-go wireless listening and they have worked wonderfully. They are comfortable (even after listening for long periods of time) and sound good. They are slightly heavy for their size but they are well padded and never caused any discomfort. There were times that I wished for a bit more low-end definition, but it's a pretty minor complaint and quickly offset by the detailed mids and smooth top-end. I should mention that the headphones aren't necessarily designed to sound flat, so purists might not be as attracted to this model. My experience was their modest boost to low



BY RUSS LONG

Russ Long lives and works in Nashville, engineering and producing a wide variety of music and film projects. russlong.ws

and high frequencies was quite musical, allowing me to enjoy the headphones at a lower volume level.

THE GIFT OF MONITORS

Whether you are building your studio from scratch or are creating a gear stash that will improve your studio's mobility or give you another perspective to your mix, monitors are always a viable holiday gift option. There are three reasonably priced options that I've been living with over the past several months, and depending on your needs, I anticipate one of them will be perfect for the audio engineer you love.

REFTONE 2LD MONITORS

The 5x5x5.5-inch Reftone 2LD monitors (\$299/pair) are a nearfield reference monitor available in six color options. Standard three-way binding posts mounted on the rear panel provide connection to a power amp (yep, they're passive). While the small, single-driver Reftone cabinet fails to reproduce either extreme lows or highs (the frequency response is 90 Hz to 17 kHz), it has an extremely accurate mid-range and, since it doesn't incorporate a crossover, it is the perfect speaker to utilize when doing volume rides on a lead vocal or solo instrument (as these sounds frequently sit on top of a speaker's crossover point). The other strength of the Reftone is that it provides an accurate sonic facsimile of the way I'd anticipate 90 percent of the population listens to music. In other words, if it sounds good on the Reftones, it will sound good everywhere.

I've been using the Reftone 2LD monitors in my mix room (powered by a Hafler Trans Nova P7000 Diablo Amp) for the last several months and they've been instrumental in quickly getting my mixes to translate into the

world. While I wouldn't recommend the speakers to be used as a studio's only set of monitors, the Reftones are the ultimate second set of monitors for any studio.

IK MULTIMEDIA ILOUD MICRO MONITORS

Despite their small size (180 mm x 135 mm x 90 mm), the iLoud Micro Monitors (\$300/pair) produce a surprisingly full-range, high-quality sound. The speakers are equipped with a three-inch woofer and a three-fourths inch silk-dome, neodymium-magnet tweeter. Getting a small speaker to accurately reproduce sound is a significant challenge and IK accomplishes this through the use of 56-bit DSP to compensate for the small design's frequency and phase response limitations. The DSP also processes the crossover and the user-adjustable EQ settings, which allow the speakers to be fine-tuned to their workspace.

The monitors are a master/slave two-way active system, meaning all of the electronic circuitry is housed in one of the speakers, and then con-

IK Multimedia iLoud Micro Monitors



nected to the other via a four-core cable, allowing independent feeds to the woofer and tweeter. The speakers have a built-in isolation base, which also acts as a decoupling device. A mic-stand thread in the base allows the speakers to be mounted directly

on a mic stand. Audio input is via RCA connectors, a stereo mini jack or wirelessly from a Bluetooth device.

Upon first listen, I was knocked out: I couldn't believe such a big sound was coming out of such small monitors. While they are impressive for their size, they are still lacking in the sub-harmonic range but the low-end punch and detail is still there. The imaging is also quite good. The speakers are perfectly suited for a home/project studio, edit suite or overdub room. IK sells a bag made for the Micro Monitors as well, making them a great mobile studio speaker solution.

EVE AUDIO SC203 MONITORS

The SC203 monitors (\$499/pair) are another small (4.5x7.5x5.3-inch) design that packs an impressive punch. These monitors are also a master/



Reftone 2LD Monitors



Eve Audio SC203 Monitors

slave two-way active system, so again, all of the electronic circuitry is housed in one of the speakers and then connected to the other via a four-core cable providing independent feeds to the satellite speaker's woofer and tweeter. All four of the drivers are powered by a dedicated 30-watt Class-D amplifier. The speakers include a subwoofer output that follows the volume setting on the SC203s.

The monitors accept both digital and analog inputs. Digital input is via Toslink or USB connectors and analog input is via a pair of RCA connectors. A 3.5 mm stereo mini-jack to dual RCA phono cable is included for connection to devices with headphone jacks. Each SC203 includes a FlexiPad, an orange rubber-esque pad that allows the speakers to be properly angled for the desired listening position. The speakers are angled 7.5 degrees upwards without the pad. If the pad is used, they are either level or angled 15 degrees upward. Optional mounting adapters allow the speakers to be mounted on a mic stand or to a wall.

As is the case with the large Eve Audio speaker designs, the SC203 utilizes an Air Motion Transducer or AMT tweeter, an extremely smooth, natural and musical tweeter that many producers and engineers love. Instead of utilizing a ported cabinet design, the SC203 incorporates a rear-mounted passive radiator. DSP handles crossover, voicing and component protection duties, ensuring exceptional performance from the small box.

I've found the SC203 monitors to have an impressive sound, delivering far more low-frequency information than you would think possible for a speaker of its size. The imaging is good and the tweeter delivers a smooth, natural sound making the monitors a perfect option for a home studio or edit bay.

GIG GLOVES

Whether you are setting up for a live recording or loading in a band for a show, protecting your hands is a top priority and gloves are the perfect solution. Unfortunately, there have never been gloves designed specifically with the engineer/musician in mind. That is until Daniel Shatzkes became frustrated with the problem, which led to his designing the Gig Glove (\$39), which perfectly addresses the needs of anyone working in the live/broadcast music industry. I anticipate that in a short time, the Gig Glove will become a staple in the music community. The strong, durable gloves incorporate TPR molding on the back of the hand and fingers to protect against impact, scrapes or pinching. The gloves are available in solid black or in black with yellow highlights to allow for user visibility of hand and finger positions in low-light environments. The padded grip provides palm protection while simultaneously strengthening the user's grip. The fingertip material allows the gloves to be used with touch-screen devices without removing the gloves and they also incorporate a design that allows the material on the thumb, pointer and middle fingers to be folded to allow the fingers to be exposed when working with small tools or anything requiring finesse.

I spent the last five days working



Gig Gloves

with the broadcast audio team for the 2017 CMA Awards and I found the Gig Gloves to be indispensable. In comparison to the gloves I've used in the past, the first thing I noticed was that I wasn't constantly taking them on and off. You can do everything with the gloves on. They are comfortable, too. They are a bit stiff for the first hour or two of use, but after they loosen up, they fit perfectly. They breathe, too, so your hands don't get hot and sweaty. Gig Gear also offers the Thermo Gig Glove, which is an insulated Gig Glove for use when working in cold environments.

ULTIMATE EARS SOUND TAP

The UE Sound Tap personal monitoring DI box is one of those brilliant inventions that make you scratch your head and ask why didn't someone think of these 10 years ago. Here's the situation: Most pro musicians have their own IEMs that they use regularly when touring or playing high-profile shows. The problem is that when they walk into a small club or coffee house, there typically isn't a way to interface their IEMs into the house system. This is where the UE Sound Tap (\$249, pictured with UE's 900s IEMs) comes in, as it allows the user to "tap" into the monitor mix and turn it into an IEM mix. The

5x5.6x3-inch active box runs on two 9v batteries and supports both line-level and speaker-level inputs. The box includes a 6-foot quarter-inch-to-Speakon cable, a 6-foot XLR-to-quarter-inch TRS cable and a 10-foot 3.5 mm headphone extender, which is adequate in nearly every situation.

The Sound Tap gets roughly 30 hours of use per battery change and a red LED illuminates when the batteries are in need of changing. A Speakon connector provides speaker-level input, and quarter-inch and XLR connectors provide line-level input. A signal can be run directly from a console into the Sound Tap, or the Sound Tap can be wired in-between two monitors (passive or active) on stage. Setup is a cakewalk. Gain is adjusted until the level LED is solid green and then the volume knob is adjusted to the desired listening level. The box sounds good, is quiet and gets extremely loud. The only real downside is the IEM mix has to be mono.

IK MULTIMEDIA IRIG PRE HD

There was a time when an audio interface built for your iOS device didn't work with your laptop and an interface built for your laptop didn't work with your iOS device. Thankfully, those days are over as more and more interface options are now compatible with both iOS devices and computers.

The IK iRig Pre HD (compatible with iOS, Android, Mac and PC) is one such device. I was fortunate to get a review unit before it was released and upon opening the box was immediately impressed as the \$99 device is extremely small (4.3x1.6x1.3-inches) and lightweight (2.6 oz). After using it for several weeks, I've been even more impressed with the sound quality of its Class A mic preamp and converter. The device provides 48 dB of gain, phantom power (activated by

Ultimate Ears Sound Tap



a switch) and supports 96 kHz/24-bit resolution. Also built into the unit is an onboard headphone output with dedicated volume control, which in addition to use during the recording process, can act as a high-resolution headphone amp for any mobile device (even the new iOS devices that don't include headphone jacks). It also offers direct monitoring which overcomes the latency problem often associated with budget recording.

The iRig Pre HD includes Lightning and USB cables for connectivity, 2 AA batteries (only needed for supplying phantom power) and a Velcro strip for securing the pre to a mic stand, belt, etc. Also included are the Mic Room (Mac/PC and iOS) virtual microphone emulation application and both the Mic Pack for VocaLive and Pro Bundle for iRig Recorder iOS apps.

I've used the iRig Pre HD to record vocals (with an Audio-Technica AT4050), percussion (with a Shure SM57) and electric guitar (with a Royer R-10) and had good results in every instance. Anyone in need of a high-quality recording interface that includes a mic pre should give the iRig Pre HD consideration.



Cloud Cloudlifter Zi

BLUE RASPBERRY STUDIO

If you are in need of both a microphone and an interface, Blue's Raspberry Studio (\$199) is a great option. The Raspberry is an iOS, Mac and PC compatible device that is perfectly suited for the home studio or as an on-the-go mobile recording solution. The bus-powered Raspberry is a cardioid condenser mic that supports up to 48 kHz, 24-bit recording and includes a built-in headphone amp.

The mic incorporates Blue's patent-pending Internal Acoustic Diffuser or IAD. The IAD is a physical acoustic diffusion system built inside the mic to help minimize the boxy sound so often apparent in recordings done in untreated rooms. Knobs on either side of the mic are used to control input gain and headphone volume. The back of the mic includes a headphone jack for zero-latency monitoring while recording, and a Lightning USB port handles connectivity. The mic has a built-in alumi-

OWC Thunderbolt 3 Dock



num stand that folds around the front of the mic when not in use. While the mic includes a carry bag, it feels fairly fragile so I'd hesitate before throwing it in my bag without better protection.

I've used the mic to record both male and female voice-overs and it worked extremely well in both instances. I also had good results using it to record acoustic guitar with vocals. The Raspberry is a great option for anyone in need of a high-quality, portable microphone.

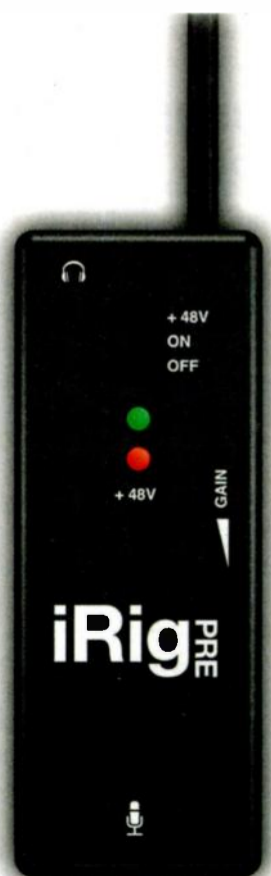
CLOUD CLOUDLIFTER ZI

I reviewed the Cloudlifter CL-Z back in 2013 and loved the sonic versatility it added to my microphone collection. The Cloudlifter Zi (\$379) is Cloud's newest adaptation of the variable impedance microphone activator. It supports microphone input but also applies Cloud's patented variable impedance technology into an active DI, allowing guitars, basses and keyboards or anything else recorded direct to benefit from the device. It truly is a must-have! Check out Strother Bullins' review of the box in the Oct. 2017 issue of *Pro Sound News*.

OWC THUNDERBOLT 3 DOCK

While there are many positives to the new Apple USB-C connector that is standard on the new Apple laptops, it comes along with a fair share of negatives (besides the obvious loss of the MagSafe power connector that has easily saved me hundreds if not thousands of dollars since its 2006 release). Most notable is the difficulty in simultaneously connecting multiple devices (external hard drives, iLoks or similar dongles, external monitors, legacy devices and so on). As is so often the case, OWC has come to the rescue, this time with the OWC Thunderbolt 3 Dock (\$299), which I've put to use over the past several months. The dock, which connects to one of the computer's USB-C ports, is available in silver or space gray and provides a multitude of inputs and outputs, including a front-panel mounted 3.5 mm headphone jack, SD Card slot and a USB-A 3.1 port. The rear panel adds four more USB-A 3.1 ports, digital audio out via S/PDIF, FireWire 800, gigabit Ethernet, two USB-C Thunderbolt 3 ports, a mini DisplayPort and the power connector for the brick. Note that one of the Thunderbolt 3 ports is always in use, as it needs to be connected directly to the laptop.

(continued on page 35)



iK Multimedia iRig Pre HD



Blue Raspberry Studio

Nyrius ARIES Pro Wireless HDMI Transmitter and Receiver



Nyrius ARIES Pro Wireless HDMI Transmitter and Receiver

In our increasingly collaborative, multimedia-dependent environments—especially in houses-of-worship (HOWs), educational, institutional and corporate worlds—connected communications are both expected and regularly troublesome on a daily basis. As such, the tiny Nyrius ARIES Pro Wireless HDMI Transmitter and Receiver is a must-have tool for nearly every A/V professional.

Why? Besides being small and relatively affordable, this \$399 list/\$249 street HDMI wireless connection kit allows anyone with audio and/or video content to be shared from a HDMI port-equipped device to do so wirelessly. From the youth group volunteer's homemade slideshow that needs display to the congregation; to the late-arriving, sweating, personal device-dependent presenter who has to share information in less than 10 minutes (and counting) at corporate HQ; to the tech-challenged educator who brought just the perfect video on a Chromebook to show 400 children in the auditorium while their peers are testing, the Nyrius ARIES Pro is essentially a Godsend. And, yes—it's a great living room YouTube-to-big screen solution, too. After using the Nyrius ARIES Pro kit for several months now, I plan to keep it in my small audio tool bag at all times.

Nyrius itself promotes the ARIES Pro akin to "an invisible HDMI cable," yet when paired with an iOS-ready Lightning Digital AV Adapter, it allows a savvy A/V tech to be ready for nearly any presentation device that arrives on the scene. I tested it with the aforementioned Asus Chromebook, Mac Book Pro, iPad

(via appropriate Lightning adapter), Windows laptop, random Android tablet with HDMI, and more. Together, each comprised solution was far easier to create than most every legacy/non-HDMI projection system I have come across at schools, churches and other institutions. Most of those are so outdated that they mainly create headaches and frustrations, while most presenters today arrive on the scene with just the right content on their own device. And, in fact, it is our jobs to get that content

to the presentation screen.

The ARIES Pro's latency is inconsequential, and its claimed operational range—up to 100 feet of streaming, line-of-sight—proved to be accurate in my usage. This allows presenters to place their devices nearly anywhere, or to allow an A/V person to take care of the content from anywhere in most any room.

Best of all, and as you might glean by this point in the review, I was unable to find any real problems in using the ARIES Pro. Paired with a



BY STROTHER BULLINS,
TECHNOLOGY EDITOR, NEWBAY
MEDIA AV/PRO AUDIO GROUP

Strother Bullins is NewBay Media's Technology Editor, AV/Pro Audio Group, active musician, recordist and club-level sound reinforcement wrangler. sbullins@rbmedia.com

Mac Book Pro, the positioning of the HDMI port partially covered the adjacent USB port, which is required to bus-power the transmitter; luckily that particular CPU provides another USB port elsewhere, but just in case, it might be good to have another cable solution on hand (a USB extension, etc.) Other than the uses listed here, Nyrius customers are using the ARIES Pro to share more device-based content on their large HDTVs, gaming, streaming video from UAV drones and HD SLRs and more. I fully recommend the ARIES Pro for most every HOW, school or institution for the applications shared above as well as all the others that you may discover.

DPA
ANNIVERSARY

A TRULY GREAT MIC DOESN'T NEED IMPROVEMENT
(But we've done it anyway)

Introducing **core**
by DPA

A powerful new technology at the heart of DPA miniature microphones. We've expanded the dynamic range by up to 14 dB. From a whisper to a scream, DPA mics have got you covered.

Clear, consistent and robust mics are important tools that can make or break your show. Don't settle. Choose a truly great mic.

dpa microphones.com/core
Made in Denmark

Yamaha TF-Rack Digital Mixer



Yamaha TF-Rack Digital Mixer

I am a proud and avid user of Yamaha consoles, working with them every week. The workflow of some Yamaha consoles can be a bit intimidating, mainly when dealing with a board like the LS9, due to all of its layers—no touchscreen means more button pushing. However, I have found the LS9, M7CL, QL and CL5 to all be incredibly similar in layout and workflow. I have always told audio technicians that visit my venue the following: If they have run sound on the LS9 or the M7CL, they can run sound on our CL5. That said, I had not run sound on a TF Series before this review, so I immediately noticed that the TF-Rack introduced a few differences in layout, yet a seemingly familiar workflow throughout.

The TF-Rack review unit that I received from Yamaha essentially worked right out of the box. I grabbed my trusty sound router, downloaded the Yamaha TF app to my iPad, and was up and running in a matter of minutes. I was quite surprised that the app for the TF-Rack was a good bit different than the other Yamaha Series apps I previously experienced. This caused me to have to play with it a little while in order to figure out a few things like sends on faders. Other features were a bit easier to access, such as the effects racks.

The touch screen on the TF-Rack unit itself was a decent size. Displaying eight channels at a time, or dynamic and post-fader effects, it was large enough to see what is needed. My one challenge with the screen was that, by having it on the front of the rack, it was slightly difficult to see it for adjustments if it was not perfectly

on eye-level. I also found the effects to be a little easier to locate on the rack than the iPad app; that may have just been my learning curve with the workflow of the TF Series. Beside the touchscreen, input controls include one master knob for adjusting EQ boosts and cuts, compression settings, sends to mixes and channel levels. Pretty much anything needing adjustment can be accomplished by just touching the item on the screen, then using the knob to affect the parameter. It is all very efficient.

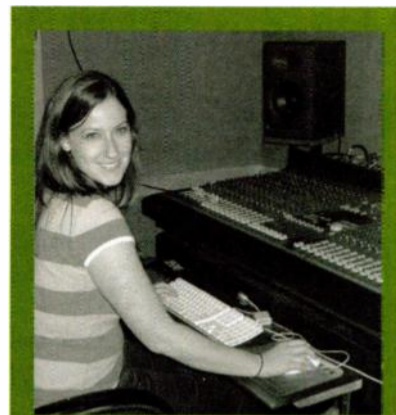
On the front of the TF-Rack are six user-defined keys that could aid in adding more short cuts to the front of the stage box. You can assign pages or mute groups that would save time getting there on the fly. In addition to user-defined keys are user-defined knobs. These are the best of both worlds, giving quick access to needed controls at the fingertips. The beloved “home” button is also still present, just below the touchscreen.

I used the TF-Rack for several corporate events and in a few different scenarios, such as an outside block party where I was providing sound support. I brought my full console with me, just in case I ran into any trouble, but the TF-Rack was so simple to set up and get rolling that I was very glad I went that route instead. I used almost all of the 16 inputs on it, the RCA stereo input jacks for an iPod, and four outputs for monitors and mains. First, I dialed everything in at the rack using the touchscreen. Once we started rolling with sound check, I went out front with my iPad and mixed from front of house while leaving the

TF-Rack on stage. I was able to go back and forth between backstage and front-of-house, so it was not a problem having it on stage; however, I could see some instances in which I would not want that, preferring to have my console out front with me. Because of a few things I found easier to manipulate from the touchscreen instead of the iPad, I went back and forth a good bit. I see that becoming less of a common situation, though, as I learned my way around the app more. The sound of the Yamaha was just great. I did not feel any quality was compromised in any way.

At around \$1,800 for the rack unit, TF-Rack is not a huge drop in price compared to the console, but it does provide more of a compact unit. Some of the TF-Rack digital rack mixer competitors are providing 24- or 32-input by 16-output options for the same price, but with no onboard touchscreen. In all of the situations I have used a rack mixer, I have never needed more than 16 inputs and 8 outputs. If I do, I already want to use my 48-channel console with fader banks instead of an iPad app.

With the capability of the TF Series console allowing for channel expansion with Tio stage boxes and the versatility provided via remote app, I’m not sure how broad of a market there is for the TF-Rack. That said, where TF Rack does fit in makes it perfect for certain users, like me. I first used the TF-Rack for the 2017 AMPD Expo’s pro-audio seminars, located within the Hanes-Brands Theater at the Winston-Salem Arts Council’s Milton Rhodes Center for the Arts. We sat several wire-



BY LIZ MAY

Liz May is a live sound mixer, producer/engineer, educator and schooled pianist now serving as Production Manager of Reynolds Auditorium in Winston-Salem NC. twitter.com/soundlizzard

less microphone receivers on top, tied them in and set it all to the side on an A/V cart. This was a great use of TF-Rack’s compact size, as it was all we needed for such a simple sound reinforcement setup. At one point, we were using four wireless microphones at one time, which it handled it like a champ, not forcing us to set up a mix position for something so small. The TF-Rack would be excellent for meeting rooms, event spaces and other uses where space is limited but flexibility is necessary. The venue we rented for the AMPD Expo had a sound system in each room, but all were limited to one or two line inputs. The TF-Rack could store settings and keep it streamlined for clients using the event space.

One feature that I would love to explore is the expansion via Dante to the Tio stage boxes. There is an optional expansion card, NY64-D, that will allow up to three Tio 1608-D I/O racks. I’m also incredibly intrigued whether it can be merged onto a Dante network with its big brother, the CL5, or if the Rio and Tio systems are completely separate. I was not able to dig into this but would love to see that type of integration.

The truth of the matter is, I immediately fell in love with the TF-Rack, or at least within the very first minutes I had it out of the box. I think it is an excellent product and an extension of Yamaha’s great line of consoles. I love having the ability to throw a compact mixer in my car without hauling a big front-of-house console and all of its parts, and then be able to set up on location without a mix position.

As I am in the market for an easy and compact digital rack mixer for smaller conference-style events as well as quick set-up live music performances, the TF-Rack is the one currently sitting at the very top of my list.

Gift Guide

(continued from page 32)

The lack of a native HDMI port will disappoint some users but you have to draw the line somewhere and that's the only connector that I can imagine someone missing; this can always be resolved with a DisplayPort to HDMI cable or by utilizing the Thunderbolt 3 port that isn't connected to the computer. Another potential negative is that the dock only provides 60 watts of power, making it charge slower than using an 85-watt charger. All negatives aside, the Thunderbolt 3 Dock is pure genius and works as an extension of the Mac. Anything plugged into the dock operates as if it were connected directly to the computer.

STOCKING-STUFFER BOOKS FOR AUDIO TYPES

I'm a sucker for a good book and there's no better time of the year to read than the holiday season. There are three killer reads that have come across my plate over the past few months that simply can't be missed.

First, *THE ART OF SOUND: A Visual History for Audiophiles* by Terry Burrows (\$50) tells the story (along with tons of photos) about how recorded music has been created and marketed over time, beginning with the late 1800s and continuing through today. Mr. Burrows locked himself within the confines of the EMI Archive Trust in order to compile the most informative and entertaining collection of photos and documentation on the subject that I've ever encountered. The book is divided into what Burrows describes as the four periods of sound: Acoustic, Electrical, Magnetic and Digital, and includes over 800 illustrations that provide an astounding visual overview of both the devices that are used to capture audio and those that were built to reproduce audio. The book includes several reproductions of patent blueprints to show how various recording and playback machines work in the most basic sense. In addition to being informative, the book is an absolute joy to spend time with.

SPINAL TAP: The Big Black Book (\$40) by Wallace Fairfax provides amazing insight into what history will most likely describe as the 20th century's most important band (wink, wink, nudge, nudge). Described in the book's press release as "Prettier than Poison, less hygienic than Mötley Crüe, deffer than Def Leppard, and braver than Bon Jovi, SPINAL

TAP is THE greatest band EVER! They are better than those bands combined, times eleven, then multiplied by a million more and raised to the power of Hanoi Rocks plus Ratt."

Perhaps the ultimate studio coffee table book, *SPINAL TAP: The Big Black Book* offers one continuous belly laugh, cover to cover, continuously reminding the reader how ingrained the 1984 film *This is Spinal Tap* has become in today's music industry.

Stashed in envelopes throughout the book is tons of removable Spinal Tap memorabilia, including promo posters, ticket stubs and my favorite, a facsimile reproduction of the Stonehenge napkin! If you loved the movie, this book is a must!

Last, but certainly not least, *Sgt. Pepper at Fifty: The Mood, the Look, the Sound, the Legacy of the Beatles' Great Masterpiece* (\$24.95) penned by Mike McInnerney, Gillian G. Gaar,

and Nashville's Bill DeMain, is another book that will feel at home on any studio's coffee table. Celebrating the magic of The Beatles' *Sgt. Pepper's Lonely Hearts Club Band* album, which marked its 50th anniversary this year, the book is divided into three sections that respectfully look at the mood, look and sound in relation to the Beatles' audio masterpiece. Any fan of *Sgt. Pepper* will love this book.

TRUST THE ORIGINAL

etherCON®
Ruggedized RJ45 data connector solution for data transfer in harsh and demanding applications. Ethernet cable- and chassis-connector with Cat 5, Cat 6, or CAT6_A component compliance according to ISO/IEC 11801 and TIA/EIA 568-C.2; PoE+ compliant according to 802.3at Type2; million-fold proven rugged latch lock system; etherCON CAT6_A intermateable with the existing etherCON CAT5 range; shielded system: high noise immunity and EMI protection.

powerCON®
Mains connectors according to IEC 60320 I VDE and UL certified I Single-phase AC system for 16 A / 250 V (VDE) / 20 A / 250 V (UL) I Integrated twist-lock I Complete system including inlet and outlet cable connector and chassis I powerCON TRUE1 features breaking capacity under live load; IP65 environmental protection; direct cable-to-cable mating without couplers.

NEUTRIK

LaChapell 500TDI Tube DI

Now under the roof of Digital Audio Labs, LaChapell Audio has announced its 500TDI tube direct box 500 series module. The design provides a combination of standard DI functionality—converting an unbalanced and/or high impedance signal to a balanced low impedance signal—and proprietary sonic shaping options.

The 500TDI is a single bay vacuum tube DI for the 500 series format. LaChapell Audio's trademarked TrueTube technology reportedly powers the tube without drawing unnecessary power or harming the power supply. The 500TDI's dual drive knobs provide a range of tonal options.



Lewitt LCT 540 SUBZERO LDC Microphone

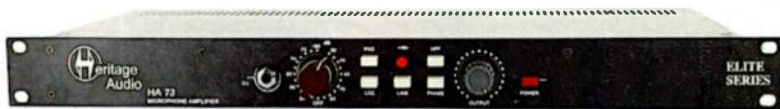
Austrian microphone manufacturer Lewitt Audio unveiled its new flagship large-diaphragm cardioid condenser microphone, the LCT 540 SUBZERO, at the 143rd AES Convention. The LCT 540 SUBZERO features a low self-noise specification, increasing the dynamic range to 132 dB.

Additionally, the LCT 540's cardioid 1-inch capsule, enclosed by an extra-large hexagonal grille, is intended to capture nuanced sonic details and optimize isolation of the main sound source by rendering off-axis sounds. The LCT 540 features three levels of attenuation and three switchable low-cut filters.



Heritage Audio Elite Series Preamps, EQ

Heritage Audio has introduced its Elite Series, a new line of analog processors characterized by the company as "more affordable." Built in the same Spanish facilities as Heritage's other products, the Elite Series also features Carnhill transformers, hand-wound in St. Ives, England.



Features of the HA-73 Elite include an 80 dB, three-stage, fully discrete Class A mic preamp; line input on separate XLR; 20 dB PAD on the mic input; Lo Z mic transformer switch; 80 Hz high-pass filter; JFET-based DI; and more. The HA-73 X2 Elite is a dual-channel HA-73 Elite.

Made to the same specifications as Heritage's 73JR, 73EQJR and DMA73 models, the HA-73 EQ Elite offers features such as a fully-discrete three-band classic equalizer with vintage correct inductors; high shelf at 12 kHz; mid-band selectable between six different frequencies; low shelf selectable between four different frequencies; inductor-based high-pass filter; and more.

SSL Nucleus2 Dark DAW Controller

Solid State Logic now offers the Nucleus2 DAW & Studio Controller in both the 'Light' version released in 2016 and a new 'Dark' color scheme. SSL's Nucleus offers multi-DAW hardware control, transport controls, monitor switching, talkback, two fully featured SSL SuperAnalogue mic pres, and a Dante audio interface.

Both Light and Dark versions of Nucleus2 are available now.



Focusrite Red 16Line I/O

Focusrite has unveiled its Red 16Line, a 64-in/64-out Pro Tools | HD and dual Thunderbolt 3 audio interface. The unit offers low-latency A-D/D-A conversion, with audio converters providing 118 dB dynamic range A/D and 121 dB dynamic range D/A (A-weighted). Also on board are Red Evolution mic



firstlook

Apogee USB Interfaces: Windows 10 Compatibility

Apogee has announced Windows 10 compatibility for the latest generations of ONE, Duet (pictured) and Quartet USB audio interfaces. Customers who purchase the latest generation of these products will be able to register and download a Windows 10-compatible software installer from Apogee's website. Existing customers will also have access to the download, too.



The new Windows software installers will include a firmware update for the hardware, custom Apogee ASIO audio driver and PC compatible version of Apogee's Maestro application for controlling audio interface settings and low-latency monitoring. All the same functionality currently available to Mac and iOS users will be available to Windows 10 users and the same interface can be used on either Mac, PC or iOS.

preamps, reportedly up to 121 dB dynamic range and expansion over Ethernet for networked audio. Providing both DigiLink connectors and Thunderbolt connections, users can switch from Pro Tools | HD to other audio applications without the need to reconfigure option cards in the interface, changing its host mode via software or the device front panel.

Red 16Line features 16 line inputs on D-sub, coupled with 16 line outputs and two main monitor outputs, and the outputs can be ganged for surround monitoring applications. The two digitally-controlled Red Evolution mic preamps provide up to 63 dB of gain along with stereo linking, individual phantom power, high-pass filter, phase reverse and Air mode.

Lindell WL-3 for 500 Series

Noted Swedish engineer/producer Tobias Lindell (Europe, HammerFall) has joined forces with pro-audio designer Paul Wolff (API, Slate Pro Audio) on a console channel strip-style module for the 500 Series format, the WL-3. Sporting a microphone preamplifier, EQ, compressor, filter and output stage fader, the WL-3 is reportedly sturdily constructed and features English Carnhill input and output transformers; 41-stepped potentiometers; an 8 mm airplane-grade aluminum front panel; custom-machined and solid aluminum knobs; and more.

Other features include microphone input with over 60 dB of gain; linkable VCA compressor with threshold, auto-gain make-up, gain, mix knob for instant parallel compression techniques, and equal energy detector circuit; and three-band EQ with sweepable midrange frequencies.



PMC result6 Nearfield Monitor

PMC's new result6 compact nearfield reference monitor sports a two-way design, with a 27 mm soft-dome tweeter with dispersion grille and a mid/bass unit composed of a doped natural fiber, both custom-designed for the result6.

Built-in dual amplifiers supply 65 W and 100 W of power to the HF and LF drivers respectively. An analog crossover, designed specifically for the result6 using circuit-modeling techniques, is intended to keep both drivers working at peak efficiency, while non-invasive limiting is said to protect the LF and HF units from damage without adversely affecting their sound.

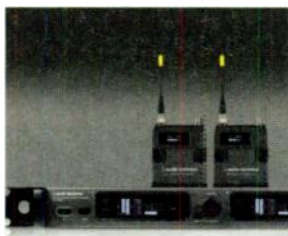
A distinctive aspect of the result6's physical design is its finned HF driver surround. The D-Fins, as PMC calls the HF diffraction fins, are said to widen the loudspeaker's sweet spot to provide off-axis response over a larger area, and also block cabinet edge effects.



There's more information on all the products featured at prosoundnetwork.com/dec2017.

Audio-Technica 6000 Series Wireless System

Audio-Technica is now shipping its new 6000 Series High-Density Wireless System. Designed to operate in the 944-952 MHz band, the system allows users to pack 31 channels in 4 MHz of bandwidth. Spaced at 125 KHz intervals, the channels can all be used simultaneously. The new system is comprised of the ATW-R6200 receiver, ATW-T6001 body-pack transmitter, optional ATW-DA410 antenna distribution system, and numerous Audio-Technica lavalier and headworn mics. The ATW-T6001 transmitter weighs 3.2 oz before loading in two AA batteries, which can power the unit for six hours. Meanwhile, the ATW-R6200 is a true-diversity receiver offering transmitter frequency setup via IR sync and more.



RCF HDL30-A Line Array

RCF has introduced its new HDL30-A line array, the latest addition to the RCF HDL line array family. A compact, bi-amped, two-way active system, it is intended for medium to large events and tours.



The RCF HDL 30-A sports two 10-inch neodymium woofers coupled with a 4-inch titanium high-frequency compression driver mounted on a time coherent 4 PATH waveguide, providing 100° x 15° coverage pattern. Incorporating new FIRPHASE DSP technology, the HDL 30-A features a composite cabinet said to have zero-degree phase and ultra-linear amplitude response. The built-in 2200 W auto-switching class-D amplifier delivers up to 137 dB max SPL with frequency response from 50 Hz to 20,000 Hz.

Intended for touring, the 55 lbs. cabinet has new rigging hardware that allows for array angles to be set before the cabinets are flown, reducing manpower hours and cartage. Up to 20 HDL30-A modules can be flown on a single fly-bar.

Nexo NXAMP MK2 Amplifiers

Nexo and parent company Yamaha Professional Audio have introduced its new NXAMP4x2 MK2 and NXAMP4x1 MK2 amplifier models, which will ship in early 2018. Replacing the original NXAMP4x1 model, the NXAMP4x1 MK2 and NXAMP4x2 MK2 offer DSP control in 2U packages with front panel touch screen control of parameters such as Array EQ, Mute and Meters, EQ Detail, User EQ, Inputs, Load Monitoring, Log, Scene, Setup, System Headroom, Volume, Gain and Delays.



The amplifiers include Ethernet ports for integration with Nexo NeMo system management software, and can be remote-controlled and daisy-chained via a standard Remote Control card with optional Dante, EtherSound and AES/EBU network cards. Four high-end analog inputs use cascaded converters for low output noise, and four digital inputs are available through the rear-panel expansion card slot, offering optional AES/EBU, EtherSound, Dante or AES67 inputs. Other rear-panel connectivity includes RS232 serial and GPIO ports along with Speakon outputs for each of the four channels.

DPA Microphones Core Microphone Amplifier

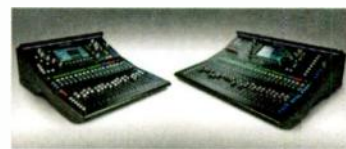
DPA Microphones has launched of Core, a new amplifier technology that is now being used in its d:screet and d:fine microphones. Core was developed with an aim to minimize distortion while expanding the dynamic range of the company's microphones. As a result, according to the company, the dynamic range of the d:screet 4061 and the d:fine 4066 has been increased by 14 dB at 1% THD.



Located in the capsule of its miniature mics, Core is currently available in the d:screet 4060, d:screet 4061, d:fine 4066 and d:fine 4088 mics. Microphones purchased with the new technology will come in Core packaging and will have a blue label near the serial number on the cable to differentiate between new and original versions.

Allen & Heath SQ Mixers

Allen & Heath has unveiled the new 96 kHz SQ Series of live sound mixers. Introduced with a pair of new desks, the SQ-5 and SQ-6, the new line is based around Allen & Heath's XCVI 96 kHz FPGA engine, reportedly with a latency of <0.7 ms. The SQ-5 has 16 onboard preamps and 17 faders and is 19-inch rack mountable, while the SQ-6 provides 24 preamps and 25 faders. Both consoles can be expanded up to 48 inputs via remote expanders and can accept optional Dante, Waves and other card formats.



Recording can also be facilitated on the SQ mixers via a built-in SQ-Drive, which can capture 96 kHz stereo and multitrack recordings direct to a USB drive. Alternately, SQ mixers can also be used with a PC or Mac via USB as a plug 'n play, Core Audio or ASIO compliant 32x32 audio interface, with MIDI and DAW Control capabilities.

Neutrik USA Unveils Asymmetrical Push Tabs

Aiming to ensure its connectors can be used in tight spaces, Neutrik USA has developed new Asymmetrical Push Tabs, positioned to the right (1 o'clock) of the connector as opposed to the conventional 12 Noon location. The company estimates that this design for use in space-sensitive applications like plug-in modules or small portable device will allow the Asymmetrical Push Tabs will help save roughly 20 percent space savings in a vertical stacking configuration.



Based on customer requests and quantity commitments, Neutrik says it could, in the future, release additional special versions with asymmetric push tabs within the etherCON Cat 5 A series, combo I series, and XLR DLX series.

Shure Systemon Software: Updated

Shure has updated its SystemOn Audio Asset Management Software, which monitors Shure devices and alerts users through SMS and email when action is required. For AV and IT staff responsible for large-scale installations, SystemOn is intended to bring to light daily microphone issues such as battery life and missing devices. The SystemOn framework is designed to complement existing Shure wireless systems by providing management and control across enterprise-wide deployments.



New features for Shure Microflex Wireless include remote microphone transmitter linking that enables users to automatically link a mic to an access point in a room from a remote location, such as a Help Desk. New "pair-a-spares" capabilities for Microflex Wireless lets users create a backup mic or a second form factor to be paired to one MXWAPT channel.

firstlook

Eventide H9000 Flagship Processor

Eventide has introduced its H9000—an all-new, network-ready, multi-channel rackmount audio effects processing unit. The H9000 reportedly features eight times the processing power of Eventide's current H8000. The H9000 features four quad-core ARM processors serving as 16 DSP engines; eight channels of analog, AES/EBU and ADAT channels; 16 USB audio channels; and optional I/O including MADI, Dante, Ravenna, and more.



The H9000 introduces Eventide's FX CHAINS concept, allowing users to connect any set of four effects with flexible routing. FX CHAINS can be created to act as a voice channel, a guitar "pedal board," or a modular synth with effects, etc.

The H9000's remote control application, called emote, is available for DAW users or for audio network-based applications. The emote app is available as a standalone app for Mac and PC, and as an AU, VST and Pro Tools plug-in.

ISP Delivers Holiday Spirit to Rochester

ROCHESTER, MI—At this time of year, many cities with a bustling downtown area decorate for the holiday season, aiming to ensure shoppers have a great time. The City of Rochester in Michigan has done that too, but it upped the ante by having Grand Rapids, MI's Waves Solutions install a custom ISP Technologies wireless speaker system to provide festive music for visitors. The new system runs three blocks of Main Street, and carefully blends in with décor.

The Downtown Development Authority (DDA) sought a sound system that would blend with the district's aesthetics, but common options were limited to about 35 watts RMS and most were housed in black speaker boxes with a visible antenna. Ultimately, the project was built around 36 custom speaker boxes from ISP Technologies that matched the look and color of the green, fluted lamp posts on Main Street.

In total, 19 boxes along the east side and 18 boxes along the west side of three city blocks were hung containing high-performance dual coax-



Custom ISP Technologies boxes cover Main Street in Rochester, MI

ial speakers. Three wireless transmitters were used to ensure full coverage. ISP also utilized its new Dynamic Adaptive Amplifier Technology (DAAT), allowing the amplifiers to deliver 300 watts true RMS per box with +/- 15VDC power rails.

The system, installed by Grand Rapids Waves Solutions, went live October 30. "The new downtown sound system sounds great," said DDA executive director Kristi Trevarrow. "We are especially excited about

the Holiday season as the music will enhance our overall downtown atmosphere, providing our guests with an even more enjoyable experience while they visit our local shops and restaurants." Added Vito Pampalona, vice chair and site committee chairman of the DDA, "ISP Technologies did an outstanding job in custom designing and overseeing the installing of our system.

ISP Technologies
isptechnologies.com

briefs

D.A.S. Delivers for Miami Heat

MIAMI, FL—Downtown Miami's AmericanAirlines Arena recently updated its PA from 2002 with new D.A.S. (dasaudio.com) Audio Aero Series 2 and UX Series speakers. Jorge Arronte, manager of Sound and Matrix, along with David Vickery, the director of Broadcast Services, spec'd 128 D.A.S. Audio Aero 40A enclosures, 16 Aero 20A cabinets, along with eight UX-218RA sub bass enclosures.

RH Rolls into Lake Wales Church

LAKE WALES, FL—The First United Methodist Church of Lake Wales recently upgraded the audio system in its near-70 year old building with a new Renkus-Heinz (renkus-heinz.com) PA designed and installed by Lakeland, FL AV systems integrator MABE. Centered around IC16-RN digitally steerable line arrays on either side of the altar, the system includes two CF125-5R subwoofers, TRX62H speakers for balcony fills, and TRX81 speakers used as choir stage monitors.

Ford Fills Texas Union Theater

AUSTIN, TX—The Texas Union Theater at University of Texas in Austin with Ford Audio-Video Systems' Charles Croley spec'ing flown left/right Fulcrum Acoustic (fulcrum-acoustic.com) FL283 four-module line arrays; a pair of CX Series coaxial loudspeakers deployed as center channel loudspeakers; a CX1295 12-inch coaxial speaker covering the near field; a CX1265 for the 70-foot throw to the back; and two Sub218L subwoofers under the theater's stage.

Lincoln Center Goes Out of Doors

NEW YORK, NY—New York City's Lincoln Center is home to David Geffen Hall, home of the NY Philharmonic, and the David H. Koch Theater, which houses the New York City Ballet, but every summer, it holds the Lincoln Center Out of Doors Festival in adjacent Damrosch Park. This year, Audio Incorporated provided a Nexo (yamahaproaudio.com) STM Line Array System, as well as a Yamaha CL5 console for FOH, two Rio 3224-D input output boxes, a Rio 1608-D and a PMSD desk for monitors.

d&b Settles into 12th & Porter

NASHVILLE, TN—As part of an extensive interior renovation, historic Nashville club 12th & Porter recently installed a d&b audiotechnik Y-Series system, with the aid of Nashville based integration and production company Morris.

At the suggestion of Lloyd Smith, the resident technical director at 12th & Porter, Nathaniel Beaver of the venue's owners, Infinity Hospitality Group, approached John Mills of integrators Morris about updating the house system. As John Mills of Morris recalls, "When Nathaniel first came to us, he said very clearly, 'I want every seat in the house to be the best seat.' I told him that could impact the cost, and he said, 'Just do it right.'"

That meant taking into account the venue's unusual shape. "The listening area is irregular, so the pre-existing straight left/right system could



John Mills (left) and Lloyd Smith collaborated to develop 12th & Porter's new d&b audiotechnik-based PA system.

not effectively cover the entire space," Mills explained. "We took a different approach to fulfill Nathaniel's goal of making every seat in the house the best seat."

Today, the venue sports a d&b Y-Series line array specifically to cover

the floor, and covers other areas with fill speakers. Yi8 cabinets sit at the top of the array to keep energy off the walls at the rear of the listening area, while a wider Yi12 hung below covers the front area of what is a relatively short, wide room. Elsewhere, a Y7P acts as fill for the L-shaped balcony; 5S and 8S speakers are used elsewhere as fills; and four d&b 18S-SUBs bring the bass. The result is a system that helps burnish the venue's reputation as a tastemaker's haven (the likes of Kings of Leon and Keith Urban played early shows at the club), and as Smith noted, "As far as I know, no one else in Nashville with a club this size has

a d&b audiotechnik system."

Morris
experiencemorris.com

d&b audiotechnik
dbaudio.com

*a lightweight champion with
an impressive punch!*

ACTIVE TWO-WAY LINE ARRAY MODULE

For ultimate sound reproduction, the HDL30-A offers high-output in a durable lightweight design. Powered by a 2200-watt 2-channel amp, the dual 10" neodymium woofers are coupled with a 4" titanium HF compression driver on a 100° x 15° time-coherent waveguide for maximum performance. Designed with a systemized approach for a variety of needs, the cabinets can be flown, ground stacked or pole mounted. Hardware is designed for a fast and easy set-up, with configurable adjustable angle points for true line array configurations. FIRPHASE algorithms increase fidelity and linear response with frequency response down to 50 Hz.

30

HDL 30-A

- Two-way 2200-watt amplification
- Two 10" neodymium woofers
- 4" titanium HF compression driver
- 50 Hz – 20 kHz frequency response
- 137 dB max SPL
- 48 kHz, 32-bit DSP processing
- FIRPHASE algorithms
- Easy installation configurable mechanics
- RDNet onboard
- Universal 100-240V



sound culture
www.rcf-usa.com

RCF

Eight Plays, A Streak: McCartney Tours New York

BY CLIVE YOUNG

Watching a Paul McCartney concert is a lesson in irony. At their height, the 20-something Beatles played 45-minute sets, but 50-plus years later, at an age when most stars of his era are taking it easy, a Macca show clocks in at three hours. As if to prove the point, Sir Paul did it over and over in September as he tore through eight sold-out shows around New York City, playing two nights a piece at Madison Square Garden; Brooklyn's Barclays Center; across the Hudson River at Newark, NJ's Prudential Center; and on Long Island at the newly refurbished NYCB Live Nassau Veterans Memorial Coliseum.

Then again, maybe a three-hour, 38-song set list shouldn't be surprising: With decades of hits under his belt, the man needs that long just to cover the basic 'must-plays,' trot out a few you haven't heard in a while, and serve up a few surprises, like a recontextualized take on last year's Kanye West/Rihanna collaboration, "Four Five Seconds," placing it more firmly in the McCartney oeuvre.

Ensuring that the music rocks every fan at every show is McCartney's FOH engineer of nearly 30 years, Paul "Pab" Boothroyd, overseeing a system from longtime audio provider Clair Global. While some things have remained constant throughout his tenure—you'd be hard-pressed to find a setlist without a "Hey Jude" sing-along—the technological side has kept pace with the times, so these days, Pab mans two Avid Venue S6L consoles.

"I've been kicking the S6L around for nearly two years now," he

says, speaking in the depths of Nassau Coliseum before the last show of the New York run. "Sonically, it is an improvement on the Profile, and it's massively more versatile. I adapted to it pretty easily, as it's a similar layout in certain aspects. I can fly around it in a very basic way, but then I'm a very basic mixer. I don't get into 'oh, I'll press the trigger to do this in the song.' If people want to get into those functions, it's all there for them, but me, I just push faders, twiddle a few knobs, shout at the band from back here in frustration and my SE does the rest, eh Andrew?" To which system engineer Andrew Dowling looks up from his tablet, pauses and deadpans, "Front of house is always a team." Cue laughter.

"I couldn't agree with that more!" affirms Pab. "We've been working together four months now and I think we can both say we've liked what we've heard, and also it's great to have a fresh, outside set of



Paul McCartney spent much of September playing a mini-tour of eight shows in four different arenas around New York City.

ears on this. There's always different approaches. I constantly look at how other people are doing stuff, techniques, microphones; sound is always an education and that's what makes it interesting."

Pab's transition to the Lab.gruppen-powered Clair Cohesion PA system two years ago was also an education, as he notes, "I was so dialed in on the i-5 that it was a bit of a struggle at first, but I do think the Cohesion CO-12 is about as good as you're going to get with PA systems that are out there today. Very flexible, very light, very easy to manage. Great delivery, great results, very accurate. Of course, I hate it because it shows all my mistakes off very clearly, but other than that, it's great."

But jokes aside, it's kind of admirable that McCartney's shows are an environment where a mistake could even happen. They are a risk the production is willing to take in order to avoid marching through machine-like shows that are bolted down to tracks, clicks and other safety nets. "There's no track playback," confirms Pab. "Yes, the brilliant Wixy [musical director/multi-


instrumentalist Paul "Wix" Wickens] is pressing a pedal to make a sound of a tambourine or something, but everything is played live. It's a band, they're rocking out together and Paul's having fun. He's doing what he loves most, and yes, he's trying to translate his music to a degree of accuracy, but it's not absolutely note perfect; there's a degree of looseness—it's real."

Looseness, however, means being ready for anything, so Pab's S6L carries dialed-in snapshots for more than 100 songs, regardless of whether they've been played every night, once in a blue moon or never outside of rehearsal. When it comes to plug-ins, Pab's mix goes relatively light, in part because, as he points out, the Beatles didn't have a lot of gear to work with back in the day. McCartney's vocal chain is centered around a Sonnox Oxford EQ and Avid Pro compressor. Other plugs that grace the mix regularly include Smack!; ReVibe II; ReVibe I on drums; and Mod Delay III, all used sparingly. "In some of these barns that we play, I don't have to

(continued on page 42)



The gang behind the Band on the Run: (l-r) tech Sean Baca; monitors system engineer Paul Swan; FOH engineer Paul "Pab" Boothroyd; techs James Ward and Nathan Sonnenberg; system engineer Andrew Dowling; and monitor engineer John "Grubby" Callis.



Pacha Ibiza, Dubai, United Arab Emirates

This isn't about new loudspeakers.

It's about bass lovers and partygoers, sports supporters, music fans and absolute clarity connecting congregations; it's about dynamic daily programs and tireless listening for everyone, every time. It's not about the new 24S/24S-D point source loudspeakers and 21S-SUB taking the performance of the installation specific d&b xS-Series to empowering new levels, in cabinets designed for easier aesthetic integration. It's about solutions tailor made to task: d&b amplifiers, software, and accessories, all perfectly integrated for highly efficient, versatile solutions. www.dbaudio.com

Welcome to System reality.

d&b
audiotechnik 

Paul McCartney

(continued from page 40)

be washing out the place with even more reverb and delays—there's enough in the room as it is," he observes.

Some of that natural reverb gets initiated by the stage sound itself, as things get pretty loud up there. Only Wickens wears IEMs, as the rest of the band opts for Clair R4 sidefills and old-school Showco SRM wedges. Guitarists Rusty Anderson and Brian Ray get captured via Rode NT3 condenser mics. "I like the way they just push the guitar right into the mix," says Pab. "You've got to take it off the center cone a little so it's not too spiky, but other than that, it's a cheap mic that's very good."

Meanwhile, McCartney's stage rig is based around Mesa/Boogie and Vox amps for his bass and guitar, respectively. "I kind of go old-school/new-school, with a Shure SM57 and a KSM32 on his lead guitar," he said. "I blend the two on the console, but it's also about the recording and Grubby [John "Grubby" Callis, monitor engineer] as well. We track everything, so I like to give the studio a choice. Probably Grubby uses the 57 more than the 32—less chance of feedback." McCartney's acoustic guitars are DI'd with an Avalon U5, and while there's a Beta 58A capturing his vocals all night, halfway down the mic stand sit a pair of Beta 98s, set up to capture a special instrument. "It's a very old ukulele and he doesn't want us to put any kind of contact on it because it was a gift from George," says Pab. "The miking makes it a bit



FOH engineer Paul "Pab" Boothroyd (left) and system engineer Andrew Dowling pause behind the Avid S6L consoles at front of house.

use a stick to flick the mic away or in front of his mouth. And he uses a footswitch—not only is he playing away with incredible skill, but he gates his microphone manually so I'm not getting all sorts of noise between lines! Other times we work out between us that he'll deliberately leave the microphone open because it acts like another overhead and it gives the kit a different flavor

flavoring as needed.

Despite the mountains of gear brought to bear on McCartney's shows, every night is ultimately about one thing: Getting the audience as excited as the guy on stage. "It's very old-school rock and roll," says Pab. "It's loud sidefills and wedges up there, 'cause he likes to rock out. He's a loud bass player and guitarist, and he likes to scream

"There's no track playback. It's a band, they're rocking out together and Paul's having fun. He's doing what he loves most, and yes, he's trying to translate his music to a degree of accuracy, but it's not absolutely note perfect; there's a degree of looseness—it's real."

Paul "Pab" Boothroyd, FOH engineer, Paul McCartney

clinky-clanky, but there's also a lot of character."

Elsewhere on stage, Abe Laboriel's elaborate DW drum kit is surrounded by Audix favorites, with a D6 in the kick, I5s above and below the snare and D4s on the toms, while a right-angled AKG C460 grabs the hi-hat, a Shure SM91 also captures the kick and DPAs are used for underheads. Laboriel contributes backing vocals through a Telefunken M80 on a rotating, telescoping mic stand that takes a lot of abuse: "He'll

of sound."

One instrument that used to get a little too much flavor was McCartney's piano. "In the old days, with the Steinway, it was like a big stage overhead in a box that gathered the energy, and it sat in the mix like it was going to take off," says Pab. The solution was to take a left and right from a Kurzweil MicroPiano that is triggered via MIDI from McCartney's onstage Yamaha piano. The Yamaha itself also sports Helpinstill piano pickups for redundancy and

'Helter Skelter' and 'Maybe I'm Amazed' and all that—and he's still doing it to this day!"

Clair Global
clairglobal.com

Shure
shure.com

Audix
audix.com

Avid
avid.com

VITALstats

Paul McCartney

Clair Global (LITEZ, PA)

FOH Engineer:

Paul "Pab" Boothroyd

Monitor Engineer:

John "Grubby" Callis

Systems Engineer:

Andrew Dowling

Monitor Systems

Engineer:

Paul "Swanny" Swan

Techs:

Sean Baca, James Ward, Nathan Sonnenberg, Jen Smola, Kevin Leas, Steve Hupkowitz

FOH Console:

(2) Avid Venue S6L 32D

Monitor Console:

(2) Midas Heritage 3000, Heritage 3000 extender; Avid Venue S6L 24D

House Speakers:

Clair Cohesion CO-12, CP-218, i-3, P-2

Monitor Speakers:

Clair SRM, ML-18, R-4 III

Personal Monitors:

Shure PSM 600

House Amplifiers:

Lab.gruppen

Monitor Amplifiers:

Crown

FOH Equipment/

Plug-Ins:

dbx 160SL; TC Electronic 6000; Plug-Ins: Sonnox Oxford EQ, Avid Pro compressor, Smack!, ReVibe II, ReVibe I, Mod Delay III

Monitor Equipment/

Plug-Ins:

XTA GQ600b; Drawmer DS201; Yamaha SPX990

Microphones:

Shure Axient series with Beta 58A capsule, SM91, Beta 98, KSM32, Beta 58A; Radial J48, PZDI; Audix D6, I5, D4; Telefunken M80; Rode NT3; DPA; Avalon U5

Join us on
the West Coast
in January!



AES @NAMM®

PRO SOUND SYMPOSIUM: LIVE & STUDIO

Anaheim, California USA

JANUARY 25 – 28, 2018

Hands-On Training / Expert Education / Instructional Certification / Technical Presentations

NS18
The NAMM Show

The NAMM Show
january 25/28 2018 california

The new **AES@NAMM Pro Sound Symposium: Live & Studio** offers a unique and highly interactive education and training program for recording and production professionals, designers and facility operators. **AES@NAMM** will be held in the Anaheim Hilton Hotel, adjacent to the interactive pro-audio exhibition floors in the brand-new ACC North Hall.

Come for hands-on training sessions about *Line Array Loudspeaker Systems, Live Sound Consoles, Digital Audio Workstations, Studio & Recording Technology*, plus *Entertainment Wireless Technologies*, and *Sound System Measurement & Optimization*, together with a *Technical Papers Program*.

Learn more at aesatnamm.com #nammshow

[44] centerSTAGE TOP 10 TOURS OF THE MONTH

ACT / STATISTICS

CREW

EQUIPMENT

1 COLDPLAY | WIGWAM / FIREHOUSE PRODUCTIONS

Daniel Green (be); Chris Wood (me); Tony Smith (sys designer); Nick Mooney (cc); Jack Murphy (se); Ali Viles (rf); Nick Davis (band tech); Brett Taylor, Richard Cook, Tyler Clapp, Adam Banister, Damian Burns, Peter Smith (pa techs)

HC: DiGiCo SD7, SD-RE Rack; MC: DiGiCo SD7; HS: d&b audiotechnik J Series (Firehouse-provided); MS: d&b audiotechnik M2; IEM: Sennheiser 2000 series; HA: d&b audiotechnik D80, R1, Array Processing (provided by Firehouse Productions); MA: d&b audiotechnik D80; HARDWIRED MICS: Sennheiser; Neumann; Shure; Earthworks; Telefunken; Gefell; Radial SW8, J48, JRak8, ProD8; WIRELESS MICS: Shure UR2 SM58; FOH EQUIPMENT: Waves; Radial; Neve; Chandler; BAE; Retro; Avedis; Pultech; Electrodyne; Chandler; Thermionic Culture; Opticore DD2; Avid Pro Tools; RME; TC Electronic 2290; Empirical Labs Distressors; Bricasti; Lake LM44, DirectOut; Sonnet; API; MONITOR EQUIPMENT: Aviom; Avid Pro Tools; Sonnet

2 GUNS N' ROSES | CLAIR GLOBAL

Caram Costanzo (be); Jeremy Bolton, Steve Carter (me); Tyson Clark (cc); Simon Bauer (se); Taylor Holden, Emmett Tubritt, Jon Brook, Leon Fink (techs); Dale "Opie" Skjerseth (pm)

HC: Avid Venue S6L; MC: Avid Venue Profiles; HS: Clair Cohesion CO-12, CP-218, CO-8; MS: Clair CM-22; IEM: Shure PSM 1000; HA: Lab.gruppen; MA: Lab.gruppen; MICS: Shure wireless; JD7, JX44, SGI, J Rak, J48, JDI, ProD2, ProD8

3 ROGER WATERS | CLAIR GLOBAL

Jon Lemon (he); Matt Napier (me); Dean Mizzi (cc/se); Tim Joyce (surround e); Rich Burke (ae); Nicole Wakefield, Jeff Sterns, Noah Shaffer, Ken Hottenstein (techs)

HC: Midas XL-4; Yamaha PM5D; MC: DiGiCo SD7; HS: Clair Cohesion CO-12, CP-218, i-3 surround system; MS: Clair CM-22, 12am, CP-118 Sub; IEM: Sennheiser 2000 series; Shure hardware; HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Shure Beta52a, Beta 52, SM57, SM58, KSM313, SM91, SM48, Beta 87, Beta 98; AKG C46; Audix D2; Milab DC-96B; Neumann KM184; Sennheiser MD-421, e935, MKH-416; Radial Tonebone Headlight SW8, JDI, J48, JX62, DM1, SGI; WIRELESS MICS: Shure Axient Digital, R Series; FOH EQUIPMENT: Waves Mercury bundle/Max BCL, Smart C2; Massenburg GML8200; Tube-Tech CL-2A; Avalon VT-737-SP; Empirical Labs Fatso; Bricasti M7; TC Helicon; Eventide H3000; Lake LM44, LM26; MONITOR EQUIPMENT: Lexicon 480L; Lake LM26; TC Electronic D-Two; Empirical Labs EL-8; Smart Research C2; Midas XL-42

4 BRUNO MARS | CLAIR GLOBAL

Chris Rabold (be); Ramon Morales (me); Chris Sullivan (cc/se); Scotty Megrath (ae); Paul Tobey (rf tech)

HC: DiGiCo SD7 with SD Racks; MC: DiGiCo SD7 with SD Racks; HS: Clair Cohesion CO-12, CP-218; MS: Clair CO-8, CM-22, CP-118; IEM: Shure PSM 1000; HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Shure SM 81, 91a, 52a, Beta 181, SM 58, 57; AKG C-414, 45; Sennheiser MKH 451EB, MD 421, MD 409; Beyer M 88 TG; Audio-Technica; Telefunken M80, M60, TK62 capsule; Radial J48, SW8, Spaceheater, EXCT-SA, X-Amp Reamp; Countryman DI; WIRELESS MICS: Sennheiser 9000 with 9235 handhelds; FOH EQUIPMENT: Waves Mercury Bundle, SSL Bundle, Abbey Road Bundle; Bricasti M7; Empirical Labs EL-8 Distressor; Midas XL42; Chandler TG1; TC Electronic 2290; Plug-Ins: Sonnox Oxford EQ, Avid Pro compressor, Smack!, ReVibe II, ReVibe I, Mod Delay III; MONITOR EQUIPMENT: Waves SSL 4000, API Bundles

5 PAUL MCCARTNEY | CLAIR GLOBAL

Paul "Pab" Boothroyd (be); John "Grubby" Callis (me); Andrew Dowling (se); Paul "Swanny" Swan (mse); Sean Baca, James Ward, Nathan Sonnenberg, Jen Smola, Kevin Leas, Steve Hupkowitz (techs)

HC: (2) Avid Venue S6L 32D; MC: (2) Midas Heritage 3000, Heritage 3000 extender; Avid Venue S6L 24D; HS: Clair Cohesion CO-12, CP-218, i-3, P-2; MS: Clair SRM, ML-18, R-4 III; IEM: Shure PSM 600; HA: Lab.gruppen; MA: Crown; MICS: Shure Axient series with Beta 58A capsule, SM91, Beta 98, KSM32, Beta 58A; Radial J48, PZDI; Audix D6, IS, D4; Telefunken M80; Rode NT3; DPA; Avalon US; FOH EQUIPMENT: dbx 160SL; TC Electronic 6000; MONITOR EQUIPMENT: XTA GQ600b; Drawmer DS201; Yamaha SPX990

6 DEPECHE MODE | BRITANNIA ROW

Antony King (be); Sarne Thorogood (me); Terence Hulkes (cc/FOH tech); Richard Trowe (se)

HC: SSL L500 Plus; MC: Midas ProX; HS: L-Acoustics K1, K2, KS28, Arcs, Kara; IEM: Ultimate Ears UE 18+ PRO; HA: L-Acoustics LA12X; HARDWIRED MICS: beyerdynamic TG V70, TG D70, TG D71, TG D57, TG D58, M 201 TG, TG D50, MC 930, MC 840, M 160, GST 500; Radial SW8, SW4, JX44, JR5 Footswitch, Firefly DI; WIRELESS MICS: beyerdynamic TG 1000 transmitters with TG V70w capsules; FOH EQUIPMENT: L-Acoustics LA Network Manager, Soundvision; Beyerdynamic DT 1770 PRO headphones; Manley VoxBox; Chandler TGI Limiter; Empirical Labs Fatso; SPL Transient Designer; TC Electronic D-Two; Yamaha Rev 7; GML 8900; Smart Research C2; MONITOR EQUIPMENT: beyerdynamic WA-AS6/2, WA-ATDA

7 ERIC CLAPTON | CLAIR GLOBAL

Robert Collins (he); Kerry Lewis (me); Tim Holder, Dave Lester (cc/FOH tech); Mark Potzler (m tech); Amy Bammarito, James Ellison, Scott Fodor (tech); Hannah Charlesworth (pm)

HC: DiGiCo SD7; MC: DiGiCo SD7; HS: Clair Cohesion CO-12, CP-218, P-2, i-3; MS: Clair 12AM, ML-18; IEM: Sennheiser 2050; HA: Lab.gruppen; MA: Lab.gruppen; Crown MA3600VZ; FOH EQUIPMENT: Summit TLA-100; dbx 160SL, Quantum; TC Electronic M6000; Klark Teknik DN360; OTHER: Radial J48, PZDI, Firefly DI

8 THE ZAC BROWN BAND | CLAIR GLOBAL

Eric Roderick (be); Andy Hill (me); Arnie Hernandez (cc); Preston Soper (se); Alex Moore (ae); Jake Bartol, Frank Sadler (tech)

HC: DiGiCo SD7; MC: DiGiCo SD7; HS: Clair Cohesion CO-12, CP-218; MS: Clair Cohesion CM22; IEM: JH Audio; HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Sennheiser; Radial DM1, J48, JDI, Relay XO, Phaser, Firefly & JR1 foot switch, Powerhouse 500 series rack, Tonebone PZ Pre, Tonebone JDX Direct Drive, Tonebone Elevator boost; WIRELESS MICS: Sennheiser; FOH EQUIPMENT: Waves

9 KID ROCK | SOUND IMAGE

Russell Fischer (be); Luke Johnson, Mike Clark (me); Bill Price (cc/se); Taylor Anthony, Paul Fuerstenberger (tech)

HC: Avid Venue S6L, (2) Stage 64 Racks; MC: (2) Avid Venue Profile (96 Ch.); HS: L-Acoustics K1, K2, Kara, SB-28, K1SB; MS: Sound Image MA 2x12, 1x15; IEM: (18) Shure PSM 1000; JH Audio Roxanne; HA: L-Acoustics LA8; MA: Crown HD12000; HARDWIRED MICS: Shure KSM32; AKG C 414; Sennheiser e904, e902; WIRELESS MICS: Shure UR4D, ULXD; FOH EQUIPMENT: Dolby Lake Processor; MONITOR EQUIPMENT: Avid Venue Personal Q

10 TOM PETTY AND THE HEARTBREAKERS | SOUND IMAGE

Robert Scovill (he); Greg Looper (me); Marcus Douglas (cc); Vic Wagner (se); Fumi Okazaki, Matt McQuaid (techs)

HC: Avid Venue S6L; MC: Avid Venue S6L; HS: EAW Anya, Otto; K-array KX12; MS: Sound Image PD112; IEM: Shure PSM 900; MA: Crown HD12000; MICS: Shure; Neumann; Sennheiser; Rode; AKG; Heil; Telefunken; DPA; Radial USB Pro, J48, JDI, PZDI

LEGEND: (he) house engineer. (ahe) ass't house engineer. (be) band's house engineer. (me) monitor engineer. (ame) ass't monitoring engineer. (bme) band's monitor engineer. (se) systems engineer. (ae) ass't engineer. (tech) technician. (cc) crew chief. HC: house console. MC: monitor console. HS: house speakers. PMS: personal monitor systems. MS: monitor speakers. HA: house amplifiers. MA: monitor amplifiers.

Top 10 grossing tours according to *Billboard*. Some tours did not report grosses for all shows; rankings may be affected as a result. Equipment and crew information are provided by the respective sound reinforcement companies.

THE POWER
TO REACH
YOUR GOALS

NewBay Media provides the information you need to know — and the audience you need to reach — in the Broadcast & Video, Professional Audio, Musical Instruments, Systems Integration, and K-12 Education markets. Our services help readers, service providers, manufacturers, and associations reach their full potential, and exceed their expectations.

ONE COMPANY. ONE GOAL. YOURS.

Learn more at www.nbmedia.com, or contact Steve Palm, CEO, at spalm@nbmedia.com.

NewBayMedia IN PRINT | ONLINE | IN PERSON

Arena Updates 1979 Audio System

BOULDER, CO—The Coors Events Center at the University of Colorado Boulder may be nearly 40 years old, but the 11,500-plus capacity venue is kept up to date with regular upgrades, from its playing surface to its video production room, to its brand-new audio system, which replaced the original one that debuted with the venue's opening in 1979.

Key to the new system are Bose Professional RoomMatch DeltaQ line array components, chosen by Steve Pizzi, Assistant Athletics Director, Coors Events Center and Game Day Operations, and Jason DePaepe, Associate AD, Facilities and Game Day Operations, after they discovered them at a college facilities conference. Englewood, CO-based AV solutions provider AVI Systems tackled the project, working directly with Bose Professional.

As part of that, Bose and AVI developed a system that would accommodate different kinds of events; using Bose Modeler software, the design team tested a variety of speaker

configurations, and even different seating layouts, in preparation for any potential future changes.

Ultimately, the venue now sports 15 arrays of RoomMatch modules configured from nine different combinations of horizontal and vertical waveguides. A full 10 arrays hang above the court, covering the audience seating bowl with two downward-firing arrays providing on-court coverage. In the main system, two arrays facing each side of the court are configured, from top to bottom, with two RM7010 RoomMatch modules to cover the upper seating and with an RM9020 and an RM9040 module below to extend coverage to the court-side seats.

At both the north and south ends of the court is a single array configured with an RM9010 cabinet at the top and three RM9020 modules below. Above each corner of the court, covering the wedge-shaped seating beneath, is an array consisting of an RM7010, an RM9020, an RM7020

and an RM5520 module. Two hangs each of two RM9010 modules directly above the free-throw lines deliver audio to the players and officials on the court. A single, centrally located line array of six RMS215 dual 15-inch subwoofers provides low-frequency extension.

A separate five-box array and a small delay array are intended to provide voice reinforcement for events taking place on the stage area at the arena's north end. The single array is positioned directly above the north end basket and includes two RMS215 subs at the top, with one each of RM9020, RM12020 and RM12040 array elements below. A delay array of two RM9020 modules is flown toward the south end of the venue.

A total of 40 RoomMatch Utility RMU108 two-way surface-mount speakers on a 70V distributed net-



The Coors Events Center now sports a Bose Professional RoomMatch DeltaQ speaker system.

work are installed on the concourse level, in the restrooms, and at the building's entrances. All of that is connected via an Audinate Dante-based audio-over-IP system for the entire building.

Powering it all are three racks of eight-input Bose PowerMatch PM8500N configurable 4000W amplifiers, and the system is managed and processed using a Bose ControlSpace ESP880 eight-channel digital signal processor fitted with a Dante card.

Bose Professional
pro.bose.com

IMS Serves Martin Audio at Squash Finals

PHILADELPHIA, PA—IMS Technology Services once again handled production for the US Open Squash Championship, held at Drexel University's Daskalakis Athletic Center in Philadelphia. Inside the event's custom ASB glass squash court, the Egyptian male and female champions—Ali Farag and Nour El Tayeb—made history as the first married couple in sporting history ever to win the same major sports title on the same day.

Using a line array to cover the 1,000-plus spectators was both a budgetary and logistical impossibility, so IMS opted to cover the space this year with Martin Audio CDD-LIVE 12s and 8s. IMS director of audio Chris Leonard noted, "There's no good place to put subs at this event, so having a speaker with the low-end power of the CDD-LIVE series really helped us out with adding excitement to the audio quality and coverage. This was the seventh year we've done this event and by far the best sounding one yet."

The system was built around four CDD-LIVE 12s, with one flown in each corner from a special truss while two CDD-LIVE 8s were flown over a VIP bar area outside of the main area of coverage. An additional CDD-LIVE 8 was used to assist



Martin Audio CDD-LIVE 12s covered the crowd during this year's US Open Squash Championship, held at Drexel University's Daskalakis Athletic Center in Philadelphia.

Leonard in monitoring the event from backstage.

The system was connected via Audinate Dante, he said: "I could run the signal in stereo to give it an extra-wide feel. It allowed me to easily distribute signal across the venue with enhanced audio quality and greater flexibility.... In the past, we've had trouble getting the ref's mic loud and clean enough across the whole venue, but I could do it now across the whole space without any feedback and with great clarity. When I was playing the music and stings, the U.S. Open Tournament director Graham Bassett noticed the low-end energy in the space and mentioned to us that the audio sounded noticeably better than in the past."

Martin Audio
martin-audio.com

Analog Church Goes Digital in Issaquah

ISSAQUAH, WA—Eastridge Church in Issaquah, WA recently updated audio in its 1,400-seat main sanctuary with the addition of a Roland Professional M-5000 OHRCA Live Mixing Console.

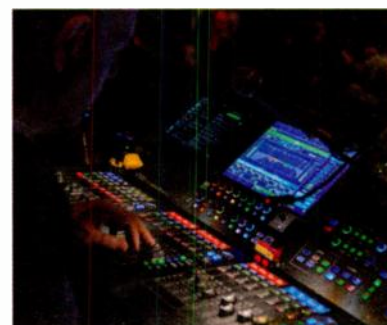
"I'm an old analog guy," said Steve Reeser, Eastridge Church's creative director, "so I came kicking and screaming into digital." The new desk won him over, however, as it makes the most of a PA that he's not thrilled with: "[The console's] audio imaging is pretty much untouchable; it has completely changed my whole opinion of using LCR where you've got spoken word and you've got music. I'm able to create a great image in the room, even though the sound system we've got was misconfigured when it was first put in; this console

has made this sound system actually work."

When working on the M-5000 at front-of-house, Reeser said, "Another crucial component was the ability to have an M-48 slave at the board, so that no matter what anybody did to their personal station, I could take it over immediately and fix it." Eastridge has 10 Roland M-48 personal mixing stations on stage, plus one at FOH so Reeser can monitor each personal mixer on the stage and fix or make adjustments remotely: "I have no problem being able to fix stuff for the musicians. I can fine-tune what that player is looking for, and then they can save it so it's always the same for them. The relaxation on stage is so much better than with other personal mixers. It's just been a joy.

"One of the things that I was really excited about was that it has all the Roland effects onboard," he continued. "So, you've got the DSV3000, you've got the SRV, you've got all the classic Roland stuff right there." Eastridge will likely add a Waves SoundGrid card and SoundGrid server, followed by an XI-Dante expansion card for the M-5000, he said.

Roland Professional A/V
pro.av.roland.com



Steve Reeser, Eastridge Church's creative director at the HOW's Roland Professional M-5000 OHRCA live mixing console.



Jewel Kusek

DPA Microphones has named **Jewel Kusek** as its new general manager of DPA Microphones, Inc. in the United States. In her new role, Kusek will be responsible for the strategic financial leadership of DPA, overseeing all aspects of operations, including finance, human resources, sales, logistics and customer relations.

Previously, she served as controller for Next Level Resource Partners, LLC in Denver, CO; vice president of Accounting at Tristar Web Graphics; and as a financial analyst for Hunting Energy Services, both in Houston, TX. Kusek holds a bachelor's degree in accounting from the University of Houston-Downtown.

Elsewhere in DPA's global footprint, **Nikolaj Forsberg** has been appointed to the post of EVP of Sales. Based at DPA's headquarters in Denmark, Forsberg will be responsible for overseeing global sales activity and helping to develop new prospects for DPA's product portfolio. Prior to joining DPA as a consultant in April, Forsberg was global head of sales (Special Cargo) for the Maersk Line, where he was responsible for sales revenue of more than \$500 million. He also has additional experience in marketing, web sales and tech business.



Jon McGarry

Yamaha Corporation of America, Professional Audio division, has added to its sales staff with the appointment of **Jon McGarry** to a new group that will specifically handle the

Commercial Installation Solutions (CIS) product line. McGarry was previously at Revolabs, one of the Yamaha group of companies where he was the lead field sales engineer for the Eastern U.S. and Canada. He attained status as a Certified Technology Specialist (CTS) from InfoComm. Prior to Revolabs, he was the IT and conferencing technologies and AV specialist at Genzyme Corporation. Based in East Aurora, New York, McGarry will support the new Northeastern CIS territory.



John Li

LOUD Audio has announced the appointment of **John Li** to the position of general manager, China and VP Global Operations, based in Shenzhen, Southern China. Prior to joining LOUD, Li held positions with Harman Professional and Bosch Automotive Products with operational experience including managing P&L, sourcing, supplier development, planning and quality management. Li also holds two Bachelor degrees and a Masters degree. His appointment, coupled with LOUD's newly expanded office in Shenzhen, is expected to help the company leverage the electronics ecosystem and supply base in Southern China.



Mario de Arce

Focusrite Pro has named **Mario de Arce** to the role of Western U.S. accounts manager, responsible for growing sales of Focusrite Pro's Red, RedNet and ISA ranges. Working closely with channel partners, he provides product sales strategies and workflow solutions based Focusrite Pro's portfolio. He most recently was at Avid, where he was pro audio solutions specialist. Prior to that, he was the pro audio sales manager for Audio One, and Apogee's R&D testing engineer and South American sales Representative.



Ryan Fitzsimmons

Fishman has appointed **Ryan Fitzsimmons** as marketing manager; he will be responsible for managing the company's website, social media, trade shows, graphic design, and marketing communications. Fitzsimmons comes to Fishman from Maine's Bourgeois Guitars, where he spent the last three years as the marketing manager. As a singer-songwriter, he has won numerous regional awards and performed at the Newport Folk Festival.

Group One has appointed **Rob Lewis** as regional sales manager for the Calrec Audio line of digital audio consoles. Based in San Francisco, Lewis will report directly to Group One president Jack Kelly and will manage

60SECONDS



JEFF HAWLEY

*Allen & Heath USA /
American Music & Sound*

Q: What is your new position, and what does it entail?

A: I am the marketing manager for Allen & Heath USA, working under the American Music & Sound umbrella. The shortest version of the job description is probably "handle all aspects of marketing for the brand in the US," so it would include strategy and execution at all levels.

Q: How has your background prepared you for your new role?

A: While I have been in the music products industry for many years and that will certainly help, my past life (in a chronological sense, not a metaphysical one) was that of a professional jazz musician, an audio engineer and a producer. It is this part of my background that informs and guides most of the work I'm up to now with the team. I'll be continually striving to look at the world from that vantage point, from the view of the customer.

Q: What new marketing initiatives are we likely to see from the company?

A: The current line of Allen & Heath products is really top-notch. It is truly unrivaled in many different aspects and across many different product ranges. The support for customers out in the field using the gear and for the sales network is tremendous—yet the profile and overall awareness of the brand doesn't always follow. I'll be focusing on closing that gap. In short, look for an increase in consumer-focused marketing and storytelling.

Q: What are your short- and long-term goals?

A: I'd say that the biggest short-term goal is to really listen and gain a deep understanding of the market. I am well aware of our relative market share and the various industry players, but what are touring engineers saying about Allen & Heath? How can we best support the needs of AV installers? What are their pain points? Those sorts of qualitative insights don't come from industry reports or fancy marketing tech tools; they require a real focus on listening to the proverbial 'word on the street'. My long-term goal follows from that sort of focused listening—reacting to their comments and meeting their needs and ultimately positioning Allen & Heath as the most recognized, trusted and loved brand in the space.

Q: What is the greatest challenge that you face?

A: I'm not sure if it is necessarily the greatest challenge, but the pace of technological change is difficult to manage from a marketing standpoint. Whether or not we are exactly holding to Moore's Law, it sure feels like it. We are increasingly faced with the 'latest and greatest' product coming at us as we work out how to best support and transition the last 'latest and greatest' product that seems like it just launched last week. Product lifecycle management seems to be increasingly tricky for those of us who deal in very tech-focused product categories.



Rob Lewis

all Calrec sales in the southeastern U.S., in addition to assisting the entire Calrec team with the overall business. Previously, Lewis served six years as director of U.S. territory sales for Harman International—Studer. There, he rebuilt the U.S. sales and technical support team. Prior to that, he served as business development and sales contractor for Salzbrenner Stagetec Mediagroup—Stagetec, USA. He also put in nine years at Euphonix, serving first as product marketing manager and then international sales director, Pacific Rim.

Celestion has announced the appointment of **Darrell Vasquez** as business development executive.



Darrell Vasquez

Vasquez will work together with Celestion's sales and distribution partners in the U.S. and Canada to expand their offerings to new markets, as well as service their current clientele. He most recently worked in Direct Sales and Consumer Relations at Fender Musical Instruments Corporation in Scottsdale, which included work with its specialty brands. Prior to that, he held several roles with Best Buy Corporation, including positions in home theater sales and installation, business account management and the musical instrument marketplace. He has also handled merchandising throughout the Nevada and Arizona territories for Bose Corporation.

Making Waves for a Quarter Century

GILAD KEREN, CEO, WAVES AUDIO, LTD.

BY GLENN GREENBERG

Having developed an interest in pro audio during his last year in the Israeli military, Gilad Keren turned a meeting with studio owner Tommy Friedman, a key player in Israel's recording industry, into the first step of a long and successful career. "When I got home [from the meeting], I went to my mother and said, 'You know, I think I know what I'm gonna do with my life,'" he says. "And from that day on, I had the fever, the bug."

Keren went to work for the late studio owner when he was 21, running his own PA company on the side, but his career reached a turning point when a cousin introduced him to Meir Shaashua, with whom he would co-found Waves Audio, Ltd., a leading developer of audio plug-ins and signal processors for the professional and consumer electronics audio markets. Currently, Keren serves as Waves Audio's CEO, with Shaashua as Chief Technological Officer.

The two fast friends dreamed of using their combined skills to develop a digital Vocoder. "This was around 1981, and we already realized early on, that the world was going digital," he recalls. Eventually Keren furthered his education at the Technion (Israel Institute of Technology), where he studied applied math. "Shaashua was also there doing research for the military," he says. "Two years later, I went out and bought a development system—a Motorola 5600. DSP had just been announced and Meir and I would get together over the weekends in our spare time and develop what was to become the Waves Q10 [equalizer]."

Keren says he and Shaashua eventually realized that developing a Vocoder was too ambitious a project. "Since a Vocoder is essentially a set of digital filters, we decided to start with making a good digital filter first," he explains. "The whole concept of a Graphic User Interface and controlling the curves using a GUI was the goal. There were no audio tools doing anything like that at the time."

Looking back, Keren notes the now-primitive nature of the technology available. "At that point, when a hard disk was 20 or 40 mb, we were talking about how much music you could put on it! And the PC couldn't do audio processing. It was way too underpowered," he says. "Our first computer was running at 75 MHz. Our first code was written in DOS. For the first prototype of the Q10 interface, we were working on Windows 1.0, but by the time we finished, it was Windows 2.0."

The pair presented a prototype of their interface to three companies—



Gilad Keren, CEO, Waves Audio

Audio Animation, Wave Frame and New England Digital—at the 1989 AES convention, in New York City. "All of them were venture-capital-based, and in the end, all of them went bust," he says. "Audio Animation wanted to hire us, but they didn't want us to work in Israel. We were thinking of doing a partnership, but nobody was willing to go that route, so in '89, we moved to Knoxville and joined them. We worked at Audio Animation for two years until the company ran out of money and by the summer of 1992, our gig with them ended, and that's when we said, 'Okay, let's go back to Israel and make Waves.'"

The main lesson from the experience at Audio Animation was "what not to do," Keren says. "It was obvious that we needed to take all our know-how and retool it for the Macintosh system. We acquired Sound Designer and I met with the founders of Digidesign, which was then a relatively small company. They opened up their API architecture to third parties, which was precisely the op-

portunity we were looking for. Our dream was to make plug-ins and it was October of '93 when we brought the first Waves plug-in, the Q10, to AES."

Waves Audio, Ltd. has grown considerably since its founding 25 years ago, in terms of manpower, number of products, technical expertise, and global reach of the company's sales and marketing division. Waves has two main offices—headquarters in Tel Aviv, home to engineering and support, and Knoxville, TN, which encompasses sales, the main Internet hub, IT, and the company's storage facility. Smaller offices are located in the Ukraine and Taiwan. The company employs around 150 people, with the majority at the Tel Aviv offices. According to Keren, the person at the center of it all is Meir Shaashua. "He is the man behind the algorithms," Keren says. "Meir and his team of R&D engineers are the engine behind Waves. It takes a lot of people to keep our 150-plus plug-ins up to date and ready to be used in every host and every platform."

Keren emphasizes the variety and quality of the company's products. "Under our Maxx brand, Waves has solidified its consumer electronics division, offering semiconductor and licensable algorithms for consumer electronics applications. Our technologies dramatically enhance audio performance and are used by industry leaders such as Dell, Google, TCL, Fujitsu, Asus, Hisense and more."

He cites Waves Audio's SoundGrid technology as a noteworthy innovation that provides "a powerful, cost effective, and extremely low-latency environment for high-precision audio processing and efficient Audio-over-Ethernet networking."

Keren also mentions the eMotion LV1 Live Software Mixer, which he says is gaining popularity in the Live sector due to its "superior sound quality, distinctive portability, as well as its quick, convenient and user-friendly workflow needed in demanding live environments."

The company has also made a mark on the burgeoning world of virtual reality (VR) with its Waves 360 Ambisonic Tools, which include the B360 Ambisonics Encoder, the Nx Virtual Mix Room over Headphones plug-in, and the Nx Head Tracker. The tools can be used in 360-degree mixing or mixing in non-acoustic environments, with uses from surround monitoring to enhancing the consumer-listening experience. "We are extremely excited about future applicable repercussions of this technology," Keren says.

When it comes to facing competition, Keren says the company's main focus has not changed since Waves was founded. He acknowledges that it is relatively easy to create a small company that makes a plug-in, but is quick to add that supporting the product over time, and making it run on multiple systems, is "very, very difficult." Keren notes that the level of expertise required in signal processing is constantly growing, to meet rising expectations. "For the past 25 years," he says, "we've done our part to help raise the bar and we will continue doing that."

Keren attributes much of the company's success to a lesson he learned early on: "A good company is just like a good person," he says. "You need to be ready for hard work, you need to pay attention to detail, you need to listen, you need to be ready to admit your mistakes and move on. Our goal has always been, and still is, to contribute the very best tools possible to the artistic and creative process, and to develop and provide solutions that enable unparalleled sonic quality for all audio applications."

Waves Audio, Ltd.
Waves.com



advertiserINDEX

ADVERTISER PAGE

Acoustics First	8
Audio Technica	2
B & H	51
BOSE	15
D&B Audiotechnik	41
DPA Microphones	33
Full Compass	1,25
Genelec	4
Hafler	16
KEF America	21
Neutrik USA	35
PreSonus	52
Primacoustics	19
Radial Engineering	13,17
RCF SPA Inc.	39
Shure Inc.	7
Sweetwater Music	
Instruments & Pro Audio	10-11
Whirlwind	9
Yamaha Pro Audio	3

Pro Sound News (ISSN# 0164-6338) is published monthly by NewBay Media, L.L.C., 28 E 28th Street - 12th Fl, New York, NY 10016. Pro Sound News is available without charge in the USA to qualified professionals engaged in sound recording, broadcast, video recording, audio-visual, sound reinforcement and associated business. The publisher reserves the right to refuse applications and restrict free copies sent to a company or organization. For subscription information or to email customer service, please visit our online Subscribe Center at www.MyPSNmag.com. Reprints available upon request, call our Reprint Coordinator at Wright's Reprints: 877-652-5295. Periodical postage paid at New York, NY and additional mailing offices. POSTMASTER: Send address changes to: Pro Sound News, P.O. Box 234, Lowell, MA 01853. Please allow 6-8 weeks for address changes to take effect. © Copyright 2017 by NewBay Media, L.L.C. PRINTED IN U.S.A.

600 MHz

(continued from page 1)

its Band 71 services by November 1. That list included additional parts of Wyoming and Maine, plus Northeast and Southwest Oregon, West Texas, Southwest Kansas, Oklahoma's panhandle, Western North Dakota, Coastal North Carolina, Central Pennsylvania, Central Virginia and Eastern Washington.

In late October, the carrier announced that it has targeted 26 more U.S. counties for deployment of the services by the end of 2017. T-Mobile's updated list covers large swaths of Pennsylvania, regions of South Carolina, Virginia, West Virginia, Milwaukee, Oregon and Salt Lake City, and includes counties adjacent to Washington, DC and Philadelphia.

"I don't want to sugarcoat it—it will be painful," said Joe Ciaudelli, Sennheiser USA's head of spectrum affairs. He was joined on the panel at the AES Convention by Shure's Mark Brunner, Jackie Green of Audio-Technica spin-off Alteros and moderator Karl Winkler of Lectrosonics, all key members of the group that has been raising awareness of the wireless audio business with the government over recent years. "We're your real representatives in Washington," said Winkler.

While the FCC's schedule for stations to transition to their new post-auction frequencies and make way for the carriers' new services potentially stretches over three years, T-Mobile is doing everything it can to speed up the process. The company announced at the beginning of October that it has

entered into a partnership with FOX Television Stations to assist in repacking its 600 MHz spectrum. Earlier this year, T-Mobile partnered with PBS and America's Public Television Stations (APTS) to assist rural translators in the move to new airwaves.

The deal with FOX will accelerate the FCC's scheduled 10-phase TV station spectrum repack by 16 months, according to T-Mobile's announcement. As an example of the agreement's results, WWOR-TV will repack in early 2018, more than one year sooner than the originally scheduled FCC deadline of August 2019.

"I don't want to sugarcoat it—it will be painful."
Joe Ciaudelli, head of spectrum affairs, Sennheiser USA

WWOR-TV, located in New Jersey, serves the New York metro area.

On October 10, Maryland Sound Industries in Baltimore, MD, posted a copy of a letter it had just received from T-Mobile on Facebook. Signed by Dan Wilson, senior manager, Spectrum Engineering for T-Mobile, the letter advised BAS (Broadcast Auxiliary Services) licensees—that is, those with Part 74 licenses—to regularly review the list "to make sure that affected licensees know where T-Mobile's licenses will be used next." It is incumbent on licensed and unlicensed wireless audio equipment operators to vacate frequency spectrum in the 600 MHz band as soon as the new licensees announce an intention to begin using it, whether for testing or full-time services.

The overriding message from the AES panel was that wireless opera-

tors should get their Part 74 licenses. The process is not easy, panelists cautioned, directing applicants to contact a handful of experts who can guide them through the procedure for a nominal fee.

But it's not all bad news, as Ciaudelli noted: "We did gain access to some alternate bands" from the FCC, and manufacturers are responding with new products. For example, Shure and Sennheiser offer equipment in the 1.9 GHz or DECT band, and Neutrik recently launched its point-to-point Xirium Pro system, operating at 5 GHz. Equipment meeting the FCC's

criteria for operation in the 1.4 GHz band will arrive in three to five years, Brunner predicted. Part 74 license requirements have also been changed to make it easier to operate in VHF.

Going forward, said Winkler, band planning—allocating certain frequency bands for different types of gear—and coordination with other users will be essential. Use just enough power to get the job done, he said, and select equipment that is spectrally efficient with wide bandwidth and good filtering.

"Be aware of the transition," advised Brunner. Plan ahead, be prepared to retire non-compliant gear and update your inventories. The major manufacturers are offering trade-in programs during the transition.

"Scan early and often," said Brunner. "You need to be aware of your environment." Above all, he said, operate responsibly.

AES Trends

(continued from page 1)

means to both literally and figuratively network audio in 2017.

The two conventions' synergies could arguably be seen as a metaphor for the continued rise of Audio over Internet Protocol, or AoIP. When paired with video content, these days, the workflow of audio engineering is increasingly distributed via Ethernet and manipulated via GUI, or touch devices, so the discussion of networked audio was everywhere at the convention and can be expected to only expand in coming years.

In manufacturing news, growth of the networked audio products sector was underlined with the announcement of Focusrite's new division, Focusrite Pro, focused on AoIP connectivity (see page 14). Many brands are embracing this networking future,

whether the protocol is proprietary REAC (Roland), SoundGrid (Waves Audio), EtherSound (Digigram), Dante, or open standards such as AES67, AVB, RAVENNA, etc.

Meanwhile, network-oriented discussions were taken a step further with events such as "How To Make An AES70 Device" and "How To Make An AES70 Controller" demo sessions, presented by the Open Control Architecture (OCA) Alliance. The event focused on the practical implementation of AES70, an open standard for control and connection management of professional audio and AV media network devices.

The sessions, led by Bosch's Jeff Berryman, included Focusrite I/O, a Bosch Dante implementation and RAVENNA/AES67-enabled Genelec monitors, comprehensively connected via a single network and centrally managed by Archwave's uConnect connection manager software. The goal was to demonstrate that software

and how, with today's open AoIP standards, the AES70 standard can achieve integration of various products from different manufacturers by utilizing controlling and connecting devices, aided by AES67 for audio streaming over networks.

"As audio networking continues to gain traction in just about every sector of our industry, from broadcast through live to installed applications, people's knowledge and understanding of the technologies involved are increasing proportionately," remarked Archwave Technologies CEO, Arie van den Broek. "Sessions like these are a vital part of the education process, and we are pleased to note that we are now moving beyond the stage where we need to explain what AES70 is and how it fits into the audio networking landscape to showing people how to actually use it in the real world."

AES
aes.org

equipment for sale

JOSEPHSON CS50H Omni Condenser Microphone
for calibrated system measurements
Josephson Engineering
www.josephson.com

acoustical products

AcousticsFirst
Materials to Control Sound & Eliminate Noise
Sola, ArtDifuser, BlockAid
888-765-2900 Tail-Free Number
MADE IN USA

PRIMAACOUSTIC
Take control of your room™
Acoustic Panels • Room Kits • Isolators
www.primacoustic.com

Sound Productions
800.203.5611
NEED HELP SELLING YOUR USED GEAR?
CONSIGNMENTS ACCEPTED
CONSIGNMENTS@SOUNDPRO.COM

For the latest industry news and information visit us online at **prosoundnetwork.com**

Sound Productions Since 1973
Pro-Audio Lighting Video
800.203.5611
WWW.SOUNDPRO.COM
YOUR DIRECT SOURCE FOR 352 PRODUCT LINES

ALLEN & HEATH DLIVE
CHAUVET PROFESSIONAL
QSC K12 SERIES
YAMAHA TF5
SHURE QLX-D
EY Electro-Voice EKK

prosound NEWS
To advertise in the classified section of **prosound** NEWS
Contact Zahra Majma at (212) 378-0400 x517 or zmajma@nbmedia.com

YOUR 'GO TO' FOR PRO FOR 30 YEARS

SPEAKERS & COMPONENTS **AMPLIFIERS** **CABLES, STANDS & MICS**

MIXERS **LIGHTING & STAGE EFFECTS** **RACKS, CASES & HARDWARE**

PARTS EXPRESS AUDIO COMPONENTS & SOLUTIONS
Parts Express has over 18,000 audio/video products in stock and ready to ship. Visit us online today!
parts-express.com

Save \$15 on orders \$150+!
Use promo code PSN32U at checkout.
*Offer expires 1/31/18

To advertise in the classified section of **prosound** NEWS

Contact Zahra Majma at (212) 378-0400 x517 or zmajma@nbmedia.com



STAY ONE STEP AHEAD with NewBay Media's **FREE** Electronic Newsletters

ONE-STOP SHOPPING: Simply visit **www.nbmedia.com** and click on the "Email Newsletters" link. Then choose as many newsletters you need.

ALL ENTERTAINMENT TECHNOLOGY TOPICS COVERED: Audio, video, systems contracting, multimedia, and more—you'll find it all here.

INFORMATION GOES STRAIGHT TO YOU: Why waste your valuable time searching for the news and information that affects your industry when it can arrive right in your e-mail.

Sign-up today by visiting **www.nbmedia.com**

In The Moment

BY JAQUES SONYIEUX

Portugal. The Man is a workingman's band, having released no less than eight albums since its inception in 2004 and maintaining a touring schedule of approximately 300 dates per year. Normally, the band's mantra is to put out 'an album a year'—but its latest album, *Woodstock*, took four years to complete as the group kept building an arsenal of new material and evolving the overall production. A stark departure from its previous album yet still instantly recognizable, *Woodstock* contains the smash hit, "Feel It Still," which has hit Number One in the *Billboard* charts. *Pro Sound News* spoke to keyboardist Kyle O'Quin about staying in the moment.

ON STAYING RELEVANT:

In the past, we always did an album a year—we'd just get in the studio and do it, then put it out. The idea was to just capture the best you could do that year, and then go and do it again next year. While creating *Woodstock*, we spent so many months—over the course of this project, there were dozens of songs, and so many that we didn't record—I can't imagine how many hundreds of hours went into it. We essentially completed another full record we didn't release called *Gloomin + Doom-in*, which is super cool with stuff that is not on *Woodstock*. I think it is some of the coolest music we've done, but when you when you are sitting on older material, it's not as relevant—especially lyrically. The stuff we were writing back then is not really reflec-

tive of the world around us right now, especially considering everything that's happened with politics. The whole world has kind of changed. So we just got really focused and put together *Woodstock* instead.

ON GEAR AFFINITIES:

There was nothing conventional about how we recorded this record. It was recorded in seven different studios, and while we were recording, we would just sit there and pass around instruments. It was kind of crazy, because we all kind of play everything. We had a lot of Teenage Engineering OP-1 synths on the record—we tend to carry these all over with us. There are also these old Gibson guitars; we used L-30s, which are from the late 1930s and pretty much the only guitars that we write on. Also, John



After 13 years and eight albums, Portugal. The Man is reveling in its smash hit, "Feel It Still."

[Gourley, singer/guitarist] also always carries around a Sennheiser MD 441, and he sung most of [our previous album] *Evil Friends* through that. There is always one of those in the bag, and that is a good mic because it is so directional and it doesn't pick up a bunch of other stuff. When John is doing vocals in the studio, he's not very formal about it. For instance, on our first record, he just sat on a couch and sang all the vocal tracks while he was sitting there holding the mic.

ON DECIDING WHAT TO RELEASE:

We are a democracy and everybody can have his opinion. I would say that if John wants something a certain way, at the end of the day, that is how it is going to be. That said, if we go into a room and write down the eight songs we each want on the record, we will usually pick the same ones. Many times, songs that aren't used eventually get turned around into ideas for other songs since we are always writing new stuff. It is an interesting question: Would you want all your old demos released? We were once on a plane a couple of years ago and our engine blew when we were 10,000-feet high. The crew was like, 'Brace for emergency landing!' People were crying all around us, and John was texting to our manager, giving instructions on what to release and what not to release in case we didn't make it. You never know.

ON 'FEEL IT STILL!'

I don't think any of us could have anticipated the success of this song. Having a number-one hit on AAA, we were like, 'Wow, that is crazy.' We were trying to write a good song, but we weren't trying to write a big hit. Asa Taccone, singer of the band Electric Guest, produced it. John was just playing the bassline in the song one day, and Asa recorded it on his phone with voice memo and immediately started pushing everybody on it. Then he started bouncing on the table and chopping together a drum beat with

his hands, making all the 'heys' and the 'whoops' and then pitching them. He was trying to get John to write lyrics for the bridge, and kept asking 'Is it coming? Is it coming?' in the studio. So that stuck and he ended up leaving it. The vocals that we laid down that day are the same ones on the record, and most of the song was recorded within two hours. Now that it is out

"There was nothing conventional about how we recorded this record."
 Kyle O'Quin, Portugal. The Man.

there, we are in the middle of it, so it is hard for us to get perspective on how big the song is. I can tell that the song is doing really well though, because I am getting weird calls from distant relatives: "Hey, it's your stepmom's sisters' boyfriend!"

ON ATLANTIC RECORDS:

We are lucky because Atlantic is super cool and they have faith in us. Sometimes, this is not always the case between the band and the label. On this record, we missed several deadlines, but everyone was really cool and patient. This resulted in us making the best possible record. Their legacy is a big deal and we are proud to be a part of that—we want to keep adding to this legacy. So far, it has been seven years and they have really helped the band grow and invested in it. It is never a quick ride to the top, or if it is, it is going to be a quick ride to the bottom. They have been patient, super supportive. It is a great label and there is nowhere we would rather be. Jacques Sonyieux is a devout explorer of recording studios and the artists that occasionally inhabit them. Please send any tips or feedback to Jacques at: jacquessonyieux@gmail.com.



JBL 7-Series 705P 5" Powered Master Reference Monitor
JB705P | \$999.00



Apple 13.3" MacBook Pro with Touch Bar (Late 2016, Space Gray)
APMBPTMLH12L | \$1,799.00



Revolabs FLX UC 1500 IP & USB Conference Phone with Extension Microphones
RE10FLXUC150 | \$822.71



Roland VR-4HD HD AV Mixer
ROVR4HD | \$2,795.00



Hitachi CP-DX301 3000-Lumen XGA DLP Projector
HICPDX301 | \$399.00



Datavideo SE-650 HD 4-Channel Digital Video Switcher
DASE650 | \$1,199.00



Focusrite RedNet 1 - Dante Equipped 8-Channel Audio Interface
FOREDNET1 | \$2,099.99



PreSonus StudioLive 32 Series III Digital Mixer
PRSL32S3 | \$2,999.95



Blackmagic Design Teranex AV Converter
BLTNAV | \$1,610.25

TIPS & TECHNIQUES

From the Pros

1 You Don't Need to Slam an Input at 24-Bit

In the analog days, it was often desirable to drive preamps as hard as possible, for tonal purposes. The same held true in the 16-bit world, but for issues relating to the noise floor. However, neither of these issues apply to 24-bit, so give yourself valuable headroom—you'll need it later on.

2 Check for Mono Even though it's 2017

In the old days, one often checked mixes for mono compatibility due to technological constraints of the times. You should still do this today, since your average listener won't hear a mix in perfect stereo (think sitting in the driver's seat, or sitting on the left side of a couch).

3 Try Out a Manual De-Esser on Vocal Tracks

What is a manual de-esser? The answer is, you. Go through the track and manually gain down each sibilance, either by clip or pre-fader automation. Pretty quickly, you'll learn to recognize the football-like shape of a peaky sibilance, which will expedite the process. Sure, it takes time, but it's one of the most natural ways to tame those ear-splitting "ssssss" sounds.

Shop B&H, where you will find all the latest gear at your fingertips and on display in our SuperStore.



www.BandH.com

Where you will find information on over 400,000 items



Visit Our SuperStore

420 Ninth Avenue, NYC
800-875-8508

Cash in or Trade up
Used Equipment
We Buy, Sell, and Trade



Free Expedited Shipping

on orders over \$49*

*Applies to In-Stock Items. Some restrictions may apply. See website for details. NYC DCA Electronics Store Lic. #0906712; NYC DCA Electronics & Home Appliance Service Dealer Lic. #0907905; NYC DCA Secondhand Dealer - General Lic. #0907906 © 2017 B & H Photo & Electronics Corp.



 PreSonus

AIR LOUDSPEAKERS

PreSonus AIR Loudspeakers have a lot more in common with our atmosphere than you may think. Their dual-class D/AB amplifier design allows them to push a whole lot of great-sounding air from here to the stratosphere.

And the sound? Also like air: transparent. The lightweight design makes your formerly cumbersome load-out a breeze.

Don't be surprised when you get a thank-you note from your L5 vertebrae.

PreSonus AIR loudspeakers are available in 10", 12", and 15" top configurations, as well as 15" and 18" subwoofers—each with an easy-to-use LCD screen, EQ, and multiple presets. Get a closer look at www.presonus.com, or get some fresh air at your favorite PreSonus dealer.