

# pro sound

NEWS

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July 2018



DAVID STREICH

## Early Events Warm Up InfoComm Crowd

BY CLIVE YOUNG

LAS VEGAS, NV—This year's InfoComm was the largest ever, and it was also the first held under the auspices of the re-named Audiovisual and Integrated Experience Association (AVIXA). Despite being held in Las Vegas, luck had nothing to do with the show's suc-

cess; instead, it was the result of careful planning and thoughtful expansion.

The show took over much the Las Vegas Convention Center, using 550,000 square feet for exhibits, demo rooms and special events space, all of which made the show physically the largest InfoComm to

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**STILL WIDE AWAKE IN AMERICA**—In 2015, U2 kicked off a four-year conceptual touring project that began with the Innocence + Experience arena tour and continued with 2017's *The Joshua Tree* stadium excursion, marking 30 years of the landmark album. Now Bono (seen here belting into a Shure Axient Wireless mic) and company have returned to arenas to bookend the effort with the Experience + Innocence tour. Sound director Joe O'Herlihy discusses the tour and looks back at mixing U2 for 40 years in our Live Sound Showcase on page 40.

## Showing Some MOXE

Geared largely toward female artists, Nashville's MOXE is a studio retreat on 20 acres of woodland recently opened by artist and producer Jordan Hamlin, who designed and constructed the facility.



## Live Sound Pros Acquire UltraSound

Live sound veterans Ralph Mastrangelo and Derek Featherstone have acquired UltraSound, longtime tour sound provider for the Grateful Dead and the Dave Matthews Band, among others.



## 'Phoning In Critical Listening

BY STEVE HARVEY

Headphones were invented in 1910 by Nathaniel Baldwin;

while the sound quality has obviously taken a giant leap forward since then, the pro audio world is still finding new ways to make headphones

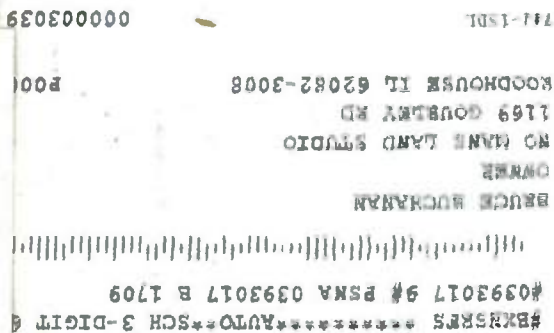
sound as if their wearers are listening to open-air speakers instead. That's not merely a commercial selling point, however; as many consumers' content intake has shifted from sedentary listening and viewing to mobile, on-the-go enjoyment, headphones and earbuds have become crucial tools for the consumption of media. As a result, the use of headphones for pro-level critical listening applications has likewise grown in an effort to ensure that media translates to the medium in the best way

possible. In recent times, pro audio has taken a variety of approaches to tackle that issue.

One uncertain approach is via crowdfunding. As an example, Ossic, a San Diego startup that promised "the world's first headphone that instantly calibrates to your anatomy," failed to deliver and shuttered its operations in May.

Ossic raised \$2.7 million on Kickstarter and another \$515,970 on Indiegogo from more than 22,000 backers over a two-month period in 2016. The Ossic X headphone design incorporated

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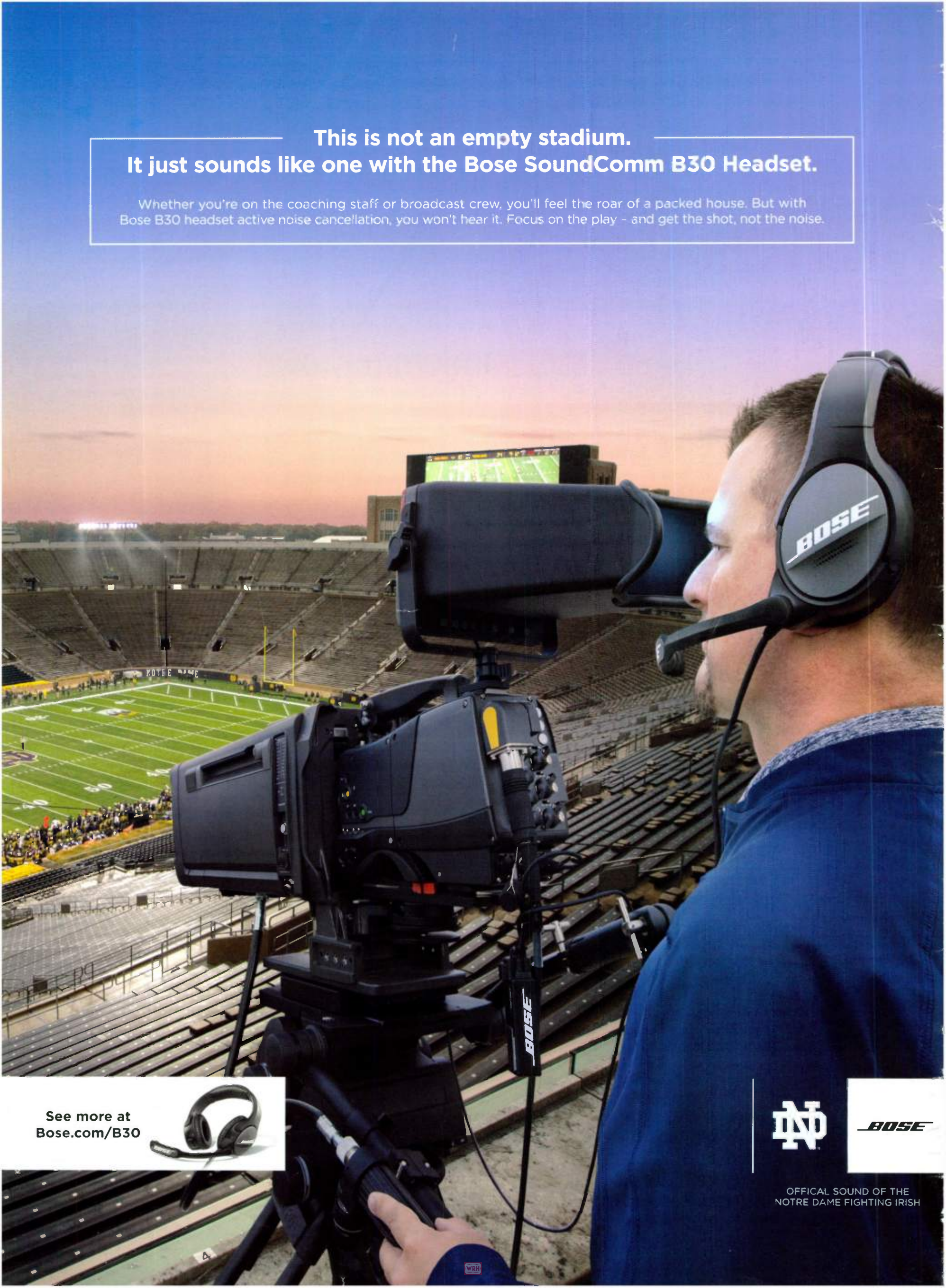
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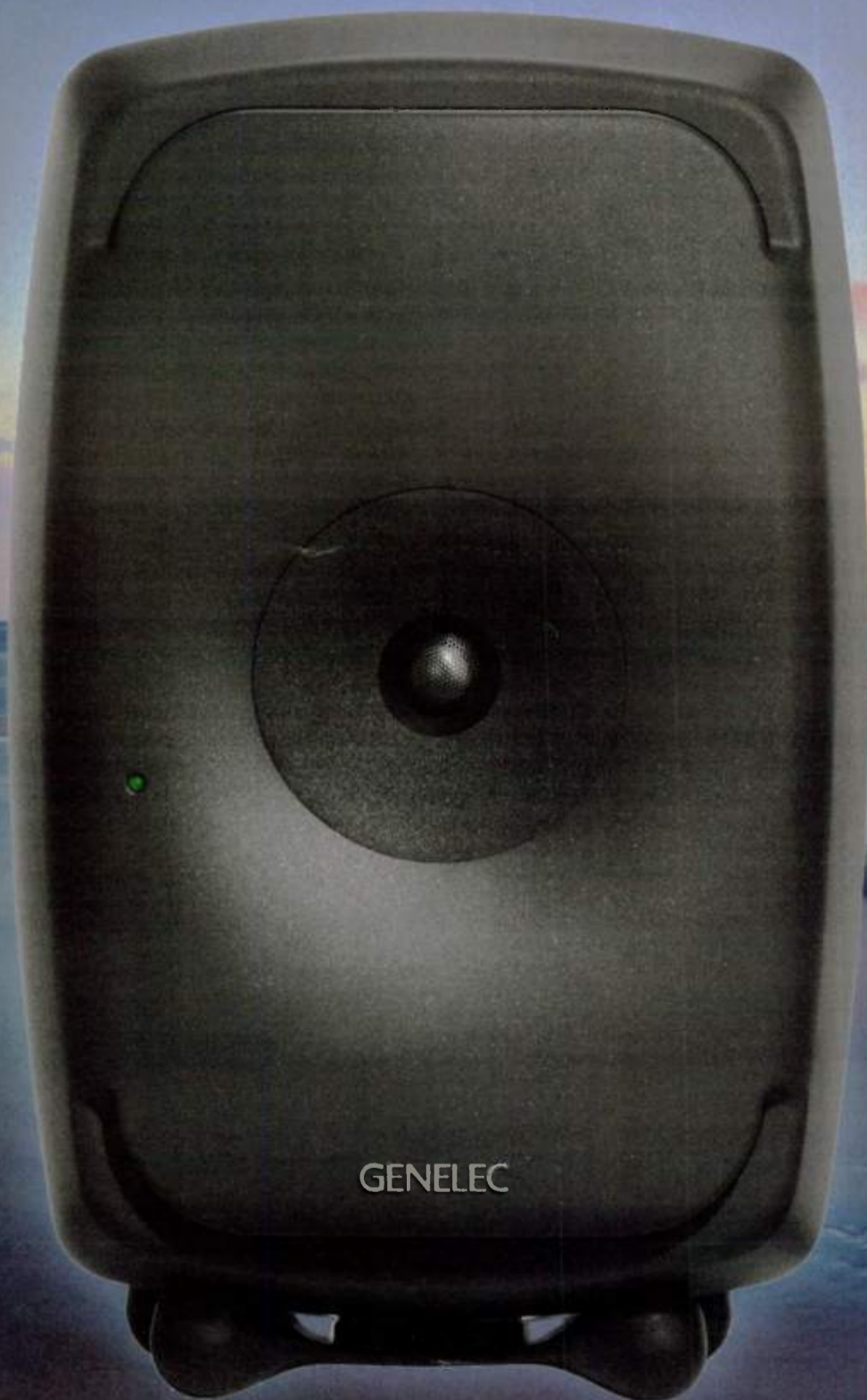
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# QSC Marks 50th Anniversary

BY MARY BAKIJA

COSTA MESA, CA—If anyone tries to argue that the old proverb “If at first you don’t succeed, try, try again” is nothing but a pithy saying, point them to the example of QSC. Launched as Quilter Sound Things

in a garage in Costa Mesa, CA, in 1968, founder and chairman of the board Pat Quilter was simply trying to provide good solutions for local musicians—a far cry from the QSC we know today, 50 years later.

“When we started this company, we planned to take over the world with high-powered guitar amplifiers,” said Quilter, who built on an interest in electronics when he launched the business with Barry Andrews, co-founder and board member. “Unfortunately, we were not the only company who vied for that position. A number of others were very successful early on, and it was depressing for us that we were not one of those companies. But not having early success was one of the keys to our ultimate success. It forced us to really learn how to run the business.”

While the team reworked its knowledge and expertise to develop power amplifiers, that focus on business operations was the real key to the company’s longevity, said Barry Andrews, who took an interest in the

management side of the business.

“We all realized we had to become excellent operationally, excellent in our product development efforts, our sales and marketing, and we had to become excellent manufacturers,” he said. “At the beginning, we struggled with most of these things.”

John Andrews, Barry’s brother, the third founder and board member, joined QSC when he was still in high school. He agrees that the initial failure—and those smaller ones that, as in any business, inevitably followed—is why the industry is recognizing QSC during its golden anniversary year, including honoring its founders with the AVIXA 2018 Adele de Berri Award.

“We have a long history of learning from failures and successes, and have become stronger as a result,” John Andrews said. “If we’ve ever lacked the skills or capabilities to do something that we deemed critical to our success, we either learned how to overcome the deficiency, or we partnered with people who had the skills



QSC founders John Andrews (left), Barry Andrews (center) and Pat Quilter marked 50 years of their company with a celebratory cake at InfoComm.

we needed.”

“There were a number of times we could have given up because of the potentially depressing circumstances and daunting road ahead,” he added. “We never lost confidence in our ability to become successful.”

As challenging as those moments may have been, this has always been better than the alternative, Quilter concluded: “Don’t underestimate the fear of getting a real job.”

QSC  
www.qsc.com

## briefs

### Revolabs Nabs New Name

HAMAMATSU, JAPAN—Yamaha Corp. has renamed its Revolabs subsidiary, which becomes Yamaha Unified Communications Inc. (uc.yamaha.com). Founded in 2005, Revolabs developed, manufactured and marketed remote conferencing systems, wireless microphone systems and other UC products. Since becoming a wholly owned subsidiary of Yamaha in 2014, it has played a role in Yamaha’s growing UC business activities. The goal of the rebrand is to clearly indicate its relationship with Yamaha, while also raising the recognition of the Yamaha brand and increasing its corporate value.

### Red Dot Dotes on Shure

ESSEN, GERMANY—Shure (shure.com) won two Red Dot Design Awards for its Shure Microflex Advance and UFX-D Digital Wireless microphone systems last month. The Red Dot award is an international product design award issued by Design Zentrum Nordrhein-Westfalen in Essen, Germany, to celebrate and recognize products that are globally distinguished in innovation and distinctive design. Participants from 59 nations entered products and innovations for the Red Dot Award: Product Design 2018 competition.

### Cordial Cables Connects to U.S.

SANTA BARBARA, CA—German cabling manufacturer Cordial Cables (cordial-cables.com) has set up shop in the States, establishing a U.S. partnership with Santa Barbara, CA-based MV Pro Audio. In business for more than two decades, Cordial GmbH has long produced all-German-made cabling with Neutrik connectors, oxygen-free copper cores and sustainable green packaging. Cordial’s offerings are based primarily around two lines: Peak and Encore instrument and microphone cables.



# United Sound Systems Up for Sale

BY CLIVE YOUNG

DETROIT, MI—United Sound Systems Recording Studio has hit the market, with an asking price of \$1.5 million. Since opening as a studio in 1939, the facility at 5840 Second Ave. has recorded artists ranging from John Lee Hooker, Dizzy Gillespie and Aretha Franklin to cult rockers Death, and hosted the first session for Berry Gordy’s Tamla label in 1959, paving the way for Motown Records.

The building was constructed in 1917 and converted into a studio in 1939, remaining an active facility until the 1990s. During that time, artists who recorded there included Charlie Parker, Max Roach, Jackie Wilson, Bob Seger, the MC5, the Doobie Brothers, Miles Davis, Luther Vandross and Anita Baker, among many others.

Marvin Gaye’s “What’s Going On” and Isaac Hayes’ “Shaft” were recorded at United, as were Keith Richards and Aretha Franklin’s mid-1980s remake of the Rolling Stones’ “Jumpin’ Jack Flash” and Franklin’s duet with Eurhythmics’ Annie Lennox for “Sisters Are Doing It for Themselves.” George Clinton and Parlia-

ment Funkadelic recorded “Mother’s Connection” at the facility, and John Lee Hooker laid down “Boogie Chillun” at United as well.

United has had a roller-coaster existence over the last decade. Closed for years, the facility fell into disrepair



United Sound Systems has recorded artists including Marvin Gaye, John Lee Hooker, Keith Richards and Aretha Franklin, among many others.

and financial troubles. It was purchased by Danielle Scott at a 2009 foreclosure sale for \$20,000, after which the studio underwent sporadic restoration for the next five years, eventually opening for tourism and the occasional session in 2014.

In 2013, however, United’s days looked to be numbered when the property was earmarked to be demolished as part of a project to expand the nearby I-94 highway. A cam-

paign by preservationists—the Detroit Sound Conservancy—prevented the demolition, and the facility was designated a local historic district by the City of Detroit in 2015. Last June, the site was granted a historical marker that recounts the history of the studio and its importance to the Detroit music scene over the years.

Currently, United is zoned for commercial use; located in the city’s burgeoning Tech Town entrepreneurial area, an urban technology and research business park, the studio is also near the Detroit Pistons NBA team’s upcoming training facility, currently being built.

As photos from the real estate listing reveal, despite a recently remodeled kitchen and bathroom, United Sound Systems shows its history and could use some TLC in numerous areas. Ed Wolfrum, chief engineer at United in the late 1960s and early 1970s, told *Crain’s Detroit Business* in 2016 that some historically important equipment had been removed during the post-2009 renovations, opining, “It’s sort of wrecked now.”

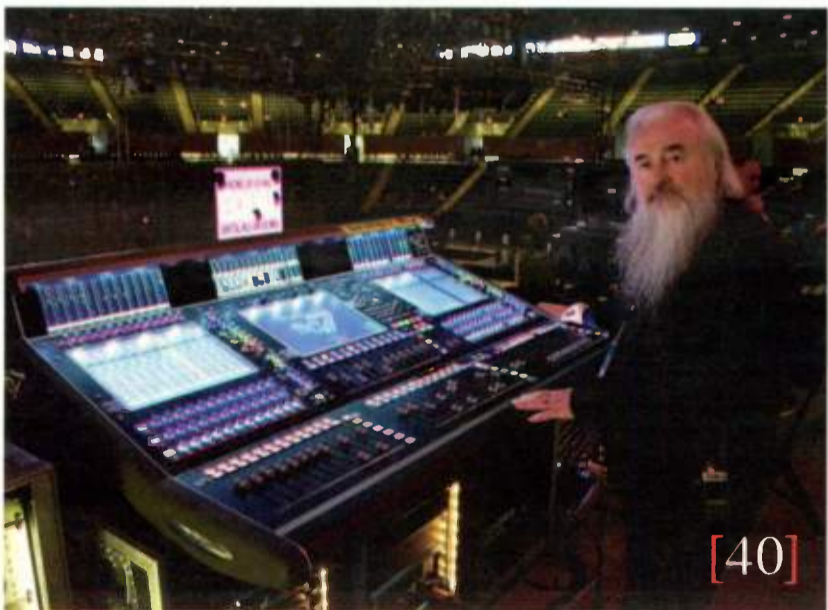
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SOUNDRECORDING

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The latest installment in Future's Need to Know series, which explores complex topics and how they apply to each industry served by our websites and magazines, delves into cybersecurity, providing an overview and a specific pro-audio take on the topic.

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Jacques Sonyieux talks with Ian McCulloch of Echo & The Bunnymen about black mold, why the best vocal take is always among the first three, and why the danger of covering one's own songs should be ignored.



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## The Next Wave of Urban Studios is Not Quite What You'd Expect

Since the turn of the millennium, major recording studios have been steadily disappearing from the urban landscape. There's a number of reasons for this. Popular music has moved away from live instruments, so there's less need for a big live room. The revenue model of the music industry has imploded, though it's been growing again in recent years. And then, of course, there's the rise of DAWs, plug-ins and the rest, democratizing somewhat the ability to create quality recordings without having to invest hundreds of thousands of dollars.

The main culprit behind most studio closings in the big cities, however, has been something else entirely: the rent. Here in New York City, where *Pro Sound News* is based, the list of facilities that closed because of explosively rising rents is horrendously long—and sad, too, as the studios always seem to get replaced by luxury high-rises. The Hit Factory closed in 2005 and turned into 27 apartments starting at \$1 million (Adding insult to injury, they kept the name for the development). Clinton Recording on 38th Street, sold in 2010, was demolished to make way for 20 residential units and a ground-floor commercial space. Sony Music Studios? The building sold in 2007 for \$44 million and the site was razed, to be replaced by luxury condos. And those are just the first ones off the top of my head.

Studios may be closed-door facilities, but they bring flavor to a neighborhood. That's one of the key reasons anyone moves into an area—because its desirable attributes reflect how they want to live.

With that in mind, it's no small irony that the hottest new amenity in luxury high-rise developments is ... you guessed it: an on-site recording studio.

Take Henry Hall, a 225-unit leased apartment building marketed to well-off millennials. Part of New York's massive \$20 billion Hudson Yards redevelopment project, the building was constructed on the site of the former Legacy Recording Studio; to pay homage to that history, project designer Ken Fulk gave the building a "jam room" in the basement, outfitted with instruments, studio-quality mics and a DAW setup.

A more professional-level recording studio is slated to be part of Waterline Square, a three-tower residential project on the Upper West Side near Lincoln Center and Julliard School of Music. Scheduled to open next spring, the building will have a studio that tenants can book for private use—an addition that was thrown into the complex's 100,000-square-foot shared amenity space when developers started to get queries from performers and Julliard parents. The cost of booking will be part of Waterline Square's amenity fees.

Such offerings aren't just a New York phenomenon; in Chicago, One Arlington, a 214-unit rental development, has its own basement studio, while down in Florida, the \$2.7 billion Paramount Miami Worldcenter, a development of 512 condos to be completed in the summer of 2019, claims to have the most amenities available anywhere in the world. As a result, its list of 47 niceties (so far) includes a recording studio, tacked on for good measure when a mere jam room seemed underwhelming. Not far away, Panorama Tower Miami, comprising 821 luxury rental units, sports a soundproofed recording space.

Seeing all these developments with their own studios is a surprising, er, development, but for now, they need to be taken with a grain of salt. One suspects that big promises made before construction began may well materialize as a Mac Mini with GarageBand in the corner of a multipurpose room used for yoga and birthday parties. Ultimately an amenity is a feature, not a focus, and to be fair, these buildings are focused on housing people. We probably won't see any Grammy-winning albums coming out of them, but that's fine—creating music is one of the great joys in life, and if developers want to create a space where tenants can lay into a drum set for a few hours, that's actually pretty admirable. Just don't call it a studio.

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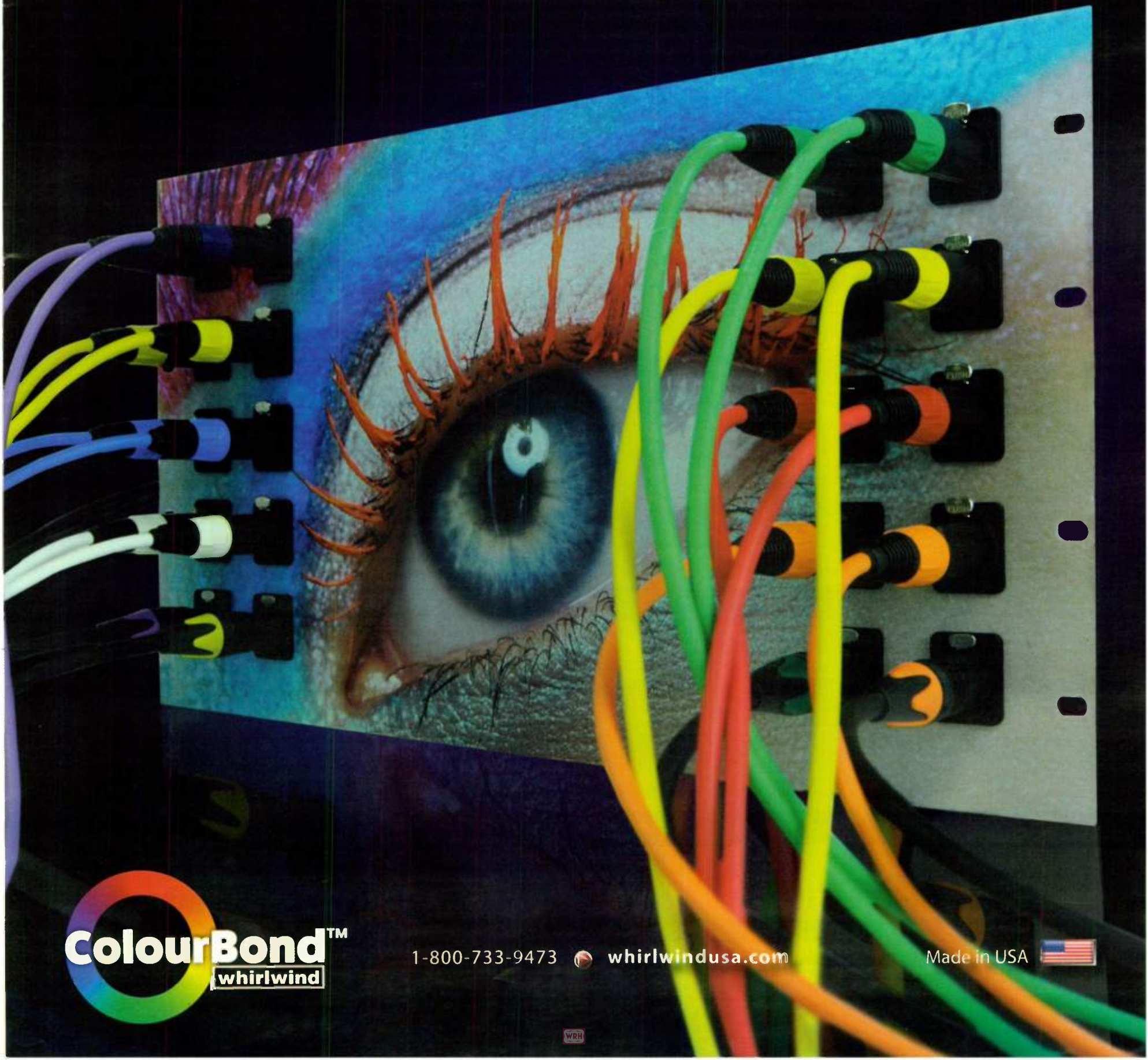
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# 2018 Tony Award Sound Winners Announced

BY CLIVE YOUNG

NEW YORK, NY—The 72nd Tony Awards, held at Radio City Music Hall in New York City on June 10, 2018, saw the high-profile annual awards ceremony for theatrical achievements on Broadway name the 2018 winners for Best Sound Design of a Musical and of a Play. The event marked the first time the two sound awards have been given since their controversial elimination in 2014.

The winner for Best Sound Design of a Play was Gareth Fry, for *Harry Potter and the Cursed Child, Parts One and Two*. The popular two-part play was nominated for 10 awards and took home six, including Best Play. Other nominees for Best Sound Design of a Play award were Adam Cork (*Travesties*), Ian Dickinson for *Autograph (Angels in America)*, Tom Gibbons (*1984*) and Dan Moses Schreier (*Eugene O'Neill's The Iceman Cometh*).

The winner for Best Sound Design of a Musical was Kai Harada,



PHOTO BY MANUEL HARLAN

The Broadway production of *Harry Potter and the Cursed Child, Parts One and Two* conjured up six Tony wins, including Best Sound Design in a Play, won by Gareth Fry.

for *The Band's Visit*. The musical took home 10 of the 11 awards for which it was nominated, including Best Musical. Other nominees for Best Sound Design of a Musical were Peter Hylenski (*Once on This Island*), Scott Lehrer (*Rodgers & Hammerstein's Carousel*), Brian Ronan (*Mean Girls*), and Walter Trarbach and Mike Dobson (*SpongeBob SquarePants: The Musical*).

Awards for the two categories were first given during the 2007-08 theatrical season, but were halted in 2014 when the Tony Awards Administration Committee voted to cancel them, just three days after that year's awards ceremony.

While no reason was initially given for ending the categories, numerous Tony voters said at the time that they didn't know how to gauge and mea-

sure achievement in the field. This year, the reinstated awards were determined using a new method: All Tony nominators voted to create the nomination shortlist, but the actual awards were chosen by a subset of voters chosen based on their trade.

The Best Sound awards were reinstated in late April 2017, with the announcement that the categories would return this year with nominations based on the 2017-18 theatrical season. That reinstatement came after an 18-month review by the Administration Committee in conjunction with numerous industry professionals, including sound designers.

Tony Awards  
www.tonyawards.com

## RapcoHorizon Acquires Lava Cable

JACKSON, MO—RapcoHorizon has acquired all assets of the Lava Cable Company, which produces instrument, patch and speaker cables, as well as power cords, pedal board kits and various parts and accessories.

Founded in 2004, the Lava Cable brand and its products will be supported by RapcoHorizon; as a result, all equipment production, inventory and shipment processes will move from Lava Cable's original facility in Owasso, OK, to RHC's corporate manufacturing facilities.

Lava's website notes that the transition is underway. "We feel we should have a good understanding of our production capabilities and delivery options within the next 30 to 45 days."

Mark Stoddard, CEO of Lava Cable, will be joining the RHC team as the Lava Cable product specialist, supporting all sales efforts of the product line. "Becoming part of the RapcoHorizon family takes Lava to the next level," says Stoddard. "We are very excited about joining with RapcoHorizon, and the entire RHC company. This acquisition provides an incredible opportunity for us moving forward. The expanded resources RapcoHorizon will provide will help solidify our position as an industry leader."

RHC Audio  
www.rapcohorizon.com

## BBC to Close Iconic Maida Vale Studios

BY STEVE HARVEY

LONDON, UK—The BBC has announced that it intends to close and replace its iconic Maida Vale Studios, which over the years has hosted sessions from the likes of Bing Crosby, The Beatles and David Bowie.

Director general Tony Hall announced the closure in an email to staff on June 5, 2018. The North London facility, which opened in 1909, has been under threat of closure for years, having been described by the BBC as "wholly unsuitable for the 21st century."

In his email, Hall wrote: "I understand how much our musical heritage at Maida Vale means to us, to artists and to audiences. We haven't taken this decision lightly. But we're determined to ensure that live music remains at the heart of the BBC, and moving to this new development gives us the opportunity to do just that."

Geoff Barrow of Portishead and Beak, and Radiohead producer Nigel Godrich took to Twitter upon hearing the news, addressing artists, musicians, DJs and fans: "Please use this hashtag to tell the BBC they are



Mock-up of the planned BBC Stratford building

wrong to close down the historic Maida Vale Studio and replace it with a new building #BBCSaveMaidaVale," wrote Barrow.

"This is absolutely insane," tweeted Godrich. "Don't destroy this incredibly important part of our cultural heritage—every bit as important as Abbey Road Studios.... Stop!!!!"

The public broadcaster intends to replace the complex with a new facility in East London at the Olympic Park in Stratford alongside the V&A (art and design museum), Sadler's Wells dance theater and the London College of Fashion. The new facility is expected to be completed by 2020 and will reportedly include recording and rehearsal studios that provide a purpose-built base for the BBC Symphony Orchestra and Chorus and the BBC Singers, as well as the BBC Concert Orchestra. It will also

be used to produce broadcast performances for BBC Radio 1, 1Xtra, Asian Network, Radio 2, Radio 3, 6 Music and BBC Introducing.

Maida Vale Studios is perhaps best known for hosting live performance recordings for DJ John Peel's Radio 1 shows. Over the years, the facility hosted live recording sessions by a long list of artists including The Beatles, David Bowie, Radiohead, Led Zeppelin, Adele, Jay-Z, Nirvana, Joy Division and Oasis. Some of those sessions have been released as retrospective albums.

The BBC Symphony Orchestra made the multi-studio complex its home beginning in the 1930s and continues to use the facility for rehearsals, performances and recordings. The BBC Radiophonic Workshop, well known for its *Doctor Who* TV series theme song and pioneering electronic sound design and music work by Delia Derbyshire, Daphne Oram and others, was based there until 1998, when the department was closed. Bing Crosby made his final recordings at Maida Vale Studios in 1977, just days before he died.

BBC  
www.bbc.co.uk

# Women's Audio Mission Holds First L.A. Event

LOS ANGELES, CA—Women's Audio Mission has long been an advocate of raising the presence of women in the pro audio world, through educational efforts, classes, panels at industry conventions and more. The organization took its next step with that effort on June 9, when it held WAM @ Capitol, its first recording arts conference for women at Capitol Studios. The event marked the first time that WAM presented training in Los Angeles; the non-profit is based in San Francisco.

The event, sponsored by Capitol Music Group, The Recording Academy Producers and Engineers Wing, and Cloudinary, sold out, bringing together more than 100 aspiring women engineers and music producers for a day of panels and workshops.

Panelists and presenters included mix engineer Marcella "Ms. Lago" Araica (Pink, Madonna, Jay-Z); senior vice president of Business and Legal Affairs of Universal Music



Women's Audio Mission hosted WAM @ Capitol, its first recording arts conference for women, at Capitol Studios on June 9.

Group Jennifer Baltimore; drummer Michel'Le Baptiste (Fifth Harmony and Beyoncé); singer, songwriter Blush (Meghan Trainor, Disney); front of house Engineer Amanda Davis (Janelle Monáe, Tegan and Sara); singer-songwriter Jane Handcock

(Rick Ross, Kelly Rowland); chief operating officer of Capitol Music Group Michelle Jubelirer; VP of Capitol Studios Paula Salvatore; and music producer and beatmaker TRAK-GIRL (Jhene Aiko, Luke James).

The conference included in-

depth sessions on subjects ranging from mixing, tracking, live sound, songwriting and beat production to the music business. Back in its home base of San Francisco, WAM provides hands-on training, experience, career counseling and job placement to women and girls in media technology for music, radio, film, television and the Internet.

A networking reception ended the day with a visit by surprise guest, Al Schmitt, the acclaimed engineer and producer with 160 Gold and Platinum album credits to his name.

Attendees seemed pleased with the event; Ainjel Emme, Producer/Recording Engineer, who attended the conference, noted afterwards, "Thank you, Terri, and everyone at Women's Audio Mission for putting this event together. It was a magical and moving experience that will ripple through the work of every woman who was present."

Women's Audio Mission  
www.womensaudiomission.org

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# SEC: Audio Entrepreneur Defrauded Investors of Millions

BY KATIE MAKAL

DALLAS, TX—Multiple audio-oriented oil ventures founded by sound entrepreneur Paul Gilman are a sham, according to the U.S. Securities and Exchange Commission.

Filed in Dallas' federal court on June 4, an SEC complaint claims that Gilman used two of his companies—Oil Migration Group and WaveTech29—to defraud 40 investors of approximately \$3.3 million, and makes similar claims about his stadium sound company, GilmanSound.

“Although Gilman has no apparent experience in the oil and gas industry, he claimed OMG and WaveTech would revolutionize the industry by using soundwave technology to lower the viscosity of oil and enhance water separation and purification processes involved in oil and gas exploration and production,” says the SEC document. “In truth, OMG and WaveTech were sham enterprises that operated as fraudulent vehicles for Gilman to solicit, receive and misappropriate investor funds.”

According to the SEC, nearly all



GilmanSound audio technology is used in Globe Life Park in Arlington, TX, home of the Texas Rangers MLB team.

the money Gilman raised was used to fund a lavish lifestyle. “Gilman spent substantially all of the investor funds on personal expenses and non-business items,” including “luxury Las Vegas hotels, restaurants, designer clothing, airline flights, home furnishings, ATM cash withdrawals at Las Vegas casinos, as well as transfers to his personal bank accounts,” the filing states.

The complaint also alleges that Gilman defrauded investors in GilmanSound, a company he launched in 2009 that licenses software to optimize sound in sports stadiums. GilmanSound provides services at Major League Baseball stadiums for the Texas Rangers and Houston Astros; the SEC charges suggest that a substantial amount of the GilmanSound

investor funds were misused for Gilman's personal expenses.

The SEC complaint notes, “Gilman lured investors into the OMG and WaveTech ventures by highlighting his musical past and ongoing GilmanSound efforts to legitimize his claimed soundwave expertise to persuade others that he was capable of developing these technologies.”

Gilman's attorney, John Teakell, gave a statement to *USA Today* on June 5: “Mr. Gilman believes that the evidence will show that the subject technology was being developed and continued to be developed. Therefore, he had no intent to defraud anyone.”

Gilman is a musician and composer who has recorded music for TV commercials, composed and recorded his own music albums, and produced and starred in a documentary (*Paul Gilman's Ocean Odyssey*) about his musical encounters with whales and dolphins.

In a 2013 interview in *Sports Business Journal*, Gilman said of GilmanSound, “The technology itself evolved from mastering [a song] in the recording studio. In a studio, you do everything you can to make it the best you can, then send it to a mastering lab and they fine-tune it. We're kind of like a mastering lab in a sports facility.”

## Community Professional Loudspeakers Turns 50

LAS VEGAS, NV—As InfoComm rolled into the end of its first day, visitors left the convention floor, but instead of heading into the desert heat outside, they poured right into the demo room of Community Professional Loudspeakers, and with good reason: The venerable company was hosting a packed-house party, celebrating its 50th anniversary in style.

Founded by Bruce Howze in 1968 to develop concert-worthy loudspeakers, Community evolved its market focus from tour sound to MI and

now to install, though Howze's technical leadership has been constant throughout.

Howze recalls, “Everyone was making horns from wood, sheet metal or cast iron. We thought fiberglass would be an ideal material for small runs. It was lightweight, strong, portable and relatively easy to mold to shape. We could make horns that were far more accurate to mathematical equations, without the imperfections of wood, and with far less weight.”

“At the time, touring systems were mainly comprised of large folded bass horns, topped with multicellular high frequency horns,” he explains. “There was nothing that could do 500 Hz well, which left a big hole in the midrange.... We focused on that midrange right at the outset, and it continues to be paramount in everything we do.”

Over the years, Elvis Presley toured with Community's Leviathan in the '70s; cities like Venice opted to use Community to provide audio flood warning; and the company's systems are today used at many Olympic and world-class stadia.

There's other landmarks in the company's history: Steve Johnson joined Community as CEO in 2013; the following year, Community updated its corporate brand identity, and in 2015, Audioprof Group International acquired a majority share in Community. Through the acquisition, Community became a member of Audioprof's installed audio portfolio, along with European-based Apart Audio. The company isn't slowing down either, having kicked off 2018 with the launch of its new IV6 Modular Vertical Array system, intended for installed indoor or outdoor applications.

Community Professional Loudspeakers  
www.communitypro.com



At InfoComm, Community's 50th anniversary celebration was the place to be.

## AVnu Bows Milan

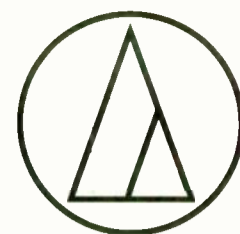
LAS VEGAS, NV—AVB networking took a leap forward at Info-



Comm 2018 with the introduction of Milan, which is said to be the first fully realized, standards-based protocol built for deterministic, interoperable, future-proof media networking in the pro AV market.

A user-driven protocol for professional media that guarantees that all Milan devices will work together, the protocol builds on the technical benefits of the IEEE audio-video bridging (AVB) open standards, such as time synchronization and guaranteed quality of service, as well as risk-free coexistence of control and media data on one network. Milan further defines device requirements at both the network and the application layer for compatible media streams, formats, media clocking, redundancy and controller software.

AVnu Alliance  
www.avnu.org



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## Green Day Greets Buenos Aires

**BUENOS AIRES, ARGENTINA**—When Green Day recently played the Estadio Velez Stadium in Argentina, the band had Buenos Aires Live Shows on hand to provide lighting and sound—the latter tackled with a d&b SL-Series GSL System large-format P.A.

The system was making its South American debut, and was new to both the local crew and Green Day's audio team, which includes Kevin Lemoine, the band's long-standing FOH engineer, and system tech Clark Thomas.

For the sold-out crowd of 37,000, the system sported 14 GSL8s and two GSL12s per side as the main arrays, with 16 J8s as out fills. That set-



When Green Day played for 37,000 fans in Argentina, audio provider Buenos Aires Live Shows fielded its new d&b audiotechnik GSL system.

up was supported by 18 GSL-SUBS and eight V7P front fills, all powered by D80 amplifiers using ArrayProcessing. The new GSL System is now d&b's flagship, taking over from the J Series.

"This is the best expression of live mixing I have ever encountered," Lemoine commented. "Now

I want to try different microphones on sources because I can actually hear the nuances of them—different compressors, different preamps and different EQs because now they can really and honestly be heard. This is a thrilling idea, really, and the thought of using the GSL on a daily basis cannot happen fast enough. From someone who is familiar with every major P.A. system, it's nice to know what is really the best, and I can't wait to hear it again."

System tech Thomas was happy with the performance, noting, "GSL is the nicest P.A. I have ever had the pleasure of working with. It is truly a full-range, high-fidelity system. It throws quite far while maintaining tonal balance, and I feel it'll work wonderfully with any style or content. And I must say, I could not hear any noise coming from the rear of the array when I walked around."

d&b audiotechnik  
www.dbaudio.com

## Audio Plus Added to Transmission Asia

**BANGKOK, THAILAND**—EDM is a worldwide phenomenon, and providing audio for the recent Transmission Festival Asia required going worldwide as well. As a result, the massive event found UK-based audio provider Audio Plus shipping a Funktion-One Vero/Evo system to Bangkok, Thailand.

United Music Group has been holding Transmission Festivals around the world for 10 years, usually with Audio Plus providing sound. In 2009, organizer and promoter Anco van der Kolk approached Audio Plus to provide P.A. for the original Transmission events in the Czech capital of Prague. Following those early European shows, Transmission spread wings, going global as it replicated each themed experience for audiences in Melbourne and Bangkok.

When no suitable Funktion-One system could be sourced in Southeast Asia, van der Kolk turned to Audio Plus, which agreed to ship the

required gear to Thailand for the event. The system used at the Bangkok International Trade and Exhibition Centre (BITEC)—the venue for Transmission Asia—mirrors the one used at Transmission's debut in Prague last year, albeit adapted to suit the requirements of the site.

Funktion-One's Vero vertical array system formed the heart of the P.A. The two main hangs comprised five Vero V60 mid-high enclosures with 60-degree horizontal dispersion, five Vero V315 mid-base enclosures and four V90 mid-high enclosures with 90-degree horizontal dispersion per side. A center-spaced sub array of 24 Vero V221 bass enclosures provided the low frequencies for the venue.

Two Evo 7Ts, two Evo 7THs and two Evo 7TL-215s per side were flown as delays, while six Resolution 5Ts were used as fills along the downstage edge. Two PSM318s covered the DJ booth.

Behind the scenes, amplification comprised four V-Racks (three PLM20K44 per rack), two PLM20K44 and three Audio Plus ES8 Amplifier Racks (with two MC2 E100 and a XTA DP448 in each). Audio Plus also provided a bespoke control system that included a DiGi-Co SD8 mixer with custom Lake drive system incorporating Dante audio networking and distribution.

Funktion One  
www.funktion-one.com



Audio Plus shipped its Funktion-One Vero/Evo system to Bangkok for Transmission Asia.

## Adjusting Volume for Vino Viewing Room

**KELOWNA, BC**—Sandhill Winery recently augmented the acoustics in its reverberant wine "viewing room" with the help of Chad Johnson of AVcom Technical in Kelowna.

Sandhill Winery estate manager Patricia Leslie explains, "The winery was formerly a cellar storage area for Calona Wines, so it was built with industrial finishings such as concrete floors, glass walls, and metal posts. The cellar space was transformed into an urban winery for the Sandhill Wines brand in 2014 [and] had very poor acoustics since it had all solid surfaces, so when people were chatting, the sound echoed and guests could not hear what the presenter doing the wine tasting was saying."

Winemaker Howard Soon tracked down Johnson of AVcom Technical to discuss what could be done to tame the room. As Johnson recalled, "Mr. Soon's main concern was how the acoustics of their new winery were impacting their guests' experiences."

Johnson chose Primacoustic's Paintables line of acoustic panels in part because high-resolution images could be printed directly on the panels. "Solid colored panels



Chad Johnson of AVcom Technical used Primacoustic acoustic panels to calm the reverberation in Sandhill Wines' viewing room.

wrapped in fabric just wouldn't have looked right on the feature wood wall. That's when we got the idea to space the panels out into a large 16:9 layout and put a picture on them that turned them into their own piece of art."

The image used in the hexaptych is of the King Family vineyard on the Naramata Bench (one of six of the Sandhill vineyard locations). Leslie had taken the photo with her mobile phone while out on a bike ride and was especially pleased with the result: "It's a great product combining a sound-softening panel and a beautiful graphic.... It's practical art."

Primacoustic  
www.primacoustic.com



# AES Milan Explores the Power of Sound

MILAN, ITALY—The AES Milan 144th International Convention, held May 23-26 at the NH Hotel Milano Congress Centre, made a point of emphasizing its theme, The Power of Sound, as it aimed to fulfill the AES' mission of promoting advancements in the science and practice of professional audio, as well as "bringing leading people and ideas together," noted AES president David Scheirman.

As always, the event provided an opportunity to learn about popular topics in the industry, ranging from recording methods and equipment to research and innovations in sound reinforcement technology.

AES executive director Bob Moses began the event at the opening ceremonies by welcoming attendees and praising the volunteers and staff who make AES conventions possible. Speaking to the assembled crowd, Scheirman noted how the organization now has more than 12,500 members worldwide and has opened new professional sections in Nigeria and Taiwan, along with a new student section in Quito, Ecuador—the first AES sections in these countries.

The AES has seen an 8 percent membership increase in the first quarter of 2018. While highlighting the benefits of membership, including access to the largest repository of audio knowledge on the planet—including more than 17,000 papers in the AES online e-library and over 200 videos in the AES Live: Videos series—Scheirman encouraged all audio professionals to become members and for all members to "get involved." Nadja Wallaszkovits and Alberto Pinto, co-chairs of the 144th AES International Convention, made appearances, as did keynote speaker Dr. Marina Bosi, who provided an insider's view of the history of the science of perceptual audio coding, from its beginnings in the 1980s to the current state of the art. She also gave a peek ahead to the future.

Throughout the four days of the AES Milan Convention, workshop sessions were held, including "The Art of Vocal Production," "Styling Your Live and Recorded Classical, Jazz and Acoustic Ensemble Sound" and "ANTON—Universe in 3D: Ambisonics in Electronic Music Production." Additional workshops focused on techniques for VR, 3D and spatial content, with dedicated sessions on miking, recording and stereophonic production.

Meanwhile, a series of recording

and production tutorials; the Networked Audio Track; acoustic analysis and measurement; and specialized SR workshops all proved popular.

AES  
www.aes.org



AES Milan Convention co-chairs Alberto Pinto (left) and Nadja Wallaszkovits (center), with keynote speaker Dr. Marina Bosi



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The spacious live room of Third Coast Recording's Studio A.



Bill Chrysler at Third Coast's SSL 4000G console, located in Studio A's control room.

## Making Waves at Third Coast

BY STEVE HARVEY

GRAND HAVEN, MI—After more than three decades on the road with the likes of Maroon 5, John Mayer and Christina Aguilera, monitor engineer Bill Chrysler is looking forward to getting on the tour bus for the last time. But he has no plans to give his ears a rest; rather, he plans to spend a lot more time at Third Coast Recording Company, the two-room facility he owns and operates on the shore of Lake Michigan.

"I'm getting older—I'm 64. I'm really looking forward to getting off the road," says Chrysler, speaking on the phone during a break in Maroon 5's

nationwide Red Pill Blues Tour. "And I just love the studio environment."

Chrysler partnered on Third Coast with Joe Sturgill, erstwhile frontman of the band Four Finger Five and now leader of TruthInFiction. They were previously renting a facility, but a few years back they had an opportunity to purchase a 10,000-plus square foot former car sales and service center-turned-dry cleaning business that had been acquired by a church.

Recording clients just kept coming, he says, so they found a construction crew that could build out two studios in the downtime between bookings. Chrysler may have learned a thing or two in the process,

but to keep out of trouble with the acoustics, he sought advice from Jay Kaufman of Kaufman and Associates in Los Angeles. "Jay did a room for John Mayer and one for Jesse Carmichael [Maroon 5 guitarist]; I got to know him through the Mayer camp. I ended up sending Jay some money. He saved us from having to fix things later."

Third Coast's two studios occupy the former car showroom. The former garage houses Th3rd Coast Media Solutions, a video company. "They signed a five-year lease with us—and we've started doing their post-production work," he says.

They specialize in 360°, AR and VR projects and have demonstrated

some of the newer technologies for Third Coast, Chrysler reports. "You put the camera in the middle of a session and you can look at any of the players or into the control room. I'm pretty sure we're going to be doing that on a regular basis."

Back in the day, Chrysler worked for sound and lighting company Electrotec, which was founded in the UK in the mid-1970s. He caught his first big break in 1983, mixing monitors for Roxy Music, and went on to work with Barry Manilow, Paul McCartney and, well, you name them, he probably worked with them.

He even brought a piece of Electrotec with him to Third Coast—three pieces, in fact. "We designed our own mixing boards [back then]—the blue Lab-Q—and we had Sound-

(continued on page 24)

## Engineer/Fuzz Tone Inventor Glenn Snoddy, Dead at 96

BY CLIVE YOUNG

MURFREESBORO, TN—Glenn Snoddy, recording engineer, studio owner and inventor of the Fuzz Tone, died of heart failure in Murfreesboro, TN, on May 12. He was 96.

Born in 1922 in Shelbyville, TN, Snoddy worked with radio equipment during World War II; upon his return from the war, he parlayed that experience into a career as an engineer for various Tennessee radio stations, engineering Grand Ole Opry broadcasts and more.

As his experience and reputation grew, Snoddy left radio to go into recording as an engineer for Nashville's noted Quonset Hut Studio in 1960. It was there that perhaps his most notable achievement—the creation of the Fuzz Tone—took place.

In modern music, guitar distortion has long been a sound identified with youth, used to convey excitement, power, fury and more. Ironically, Snoddy was 39 when he recorded Marty Robbins' 1961 single, "Don't Worry," thought to be the first song to include distortion on purpose. Guitarist Grady Martin was plugged into a faulty preamp, and the ragged sound wasn't discovered until playback, but when Snoddy and producer Don Law heard the result, they loved how it affected the song. They opted to keep it in rather than run another take.

When the single hit the Top 10 in the country charts, that distorted sound quickly became in-demand. Underlining its distinct sound, Martin returned to the studio a few months later to record an in-

strumental through the same preamp, released on Decca as "The Fuzz."

Snoddy subsequently created the Fuzz Tone, an early guitar pedal, to provide that aggressive sound on demand. Gibson released it in 1962 as the Maestro FZ-1 Fuzz-Tone, and though initially a slow seller, the Fuzz Tone began flying out of retailers' doors three years later when Keith Richards used one on the Rolling Stones' "(I Can't Get No) Satisfaction."

In the meantime, Snoddy kept recording artists like Patsy Cline and Johnny Cash, and later helped found the Nashville Chapter of the Recording Academy in the early 1970s. By that time he'd gone out on his own,



Recording engineer Glenn Snoddy invented the Fuzz Tone.

PHOTO COURTESY NAMA ORAL HISTORY PROGRAM

opening his own studio, Woodland Sound, in 1967. Over the years, the facility, housed in a former cinema, recorded artists like Neil Young, Tammy Wynette, the Nitty Gritty Dirt Band and others, with some of its most high-profile recordings including "The Devil Went Down to Georgia" by the Charlie Daniels Band, "Dust in the Wind" by Kansas and "Elvira" by the Oak Ridge Boys.

Snoddy is survived by his children, Glenda, Diane and James; four grandchildren; and a great-granddaughter.

# Nocturne

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## Jordan Brooke Hamlin Builds Her Dream Studio in the Woods

BY STEVE HARVEY

NASHVILLE, TN—*Stay, retreat and create* are the watchwords at MOXE, a residential studio and inspirational creative environment set way back in the woods on a 19-acre lot north of downtown Nashville. Designed, owned and operated by women, the facility is helmed by Jordan Brooke Hamlin, a multi-instrumentalist, producer and engineer who has worked with the likes of Grammy Award-winning duo the Indigo Girls, Lucy Wainwright Roche, Rachael Yamagata, Missy Higgins and Audrey Assad.

“Place affects what you create,” says Hamlin, who has been a touring and studio musician for the past 15 or so years. She got into engineering and producing 10 years ago: “I’ve mainly been driven by curiosity. I don’t feel like I know anything else other than trying to chase what sounds good to my ears.”

Hamlin had been working out of a small studio at her house, renting a big room when the need arose. Then, an offhand remark to a business associate led to MOXE. “I mentioned that my ultimate dream would be to have my own studio in the woods. She said, ‘Then why don’t you do it?’” Hamlin says.

Having found a suitable location, “We ran utilities all the way to the back of the property and built from scratch,” reports Hamlin. She designed the building using Google SketchUp 3D modeling software. “Then I had my architect friend make it real.”

She has an engineering assistant, Helen Vaskevitch, who moved from Oregon to work with her, initially helping with construction and welding. “She was oddly up for it, but not everybody would be,” laughs Hamlin.

For the first release to come out of MOXE, Lucy Wainwright Roche’s album *Little Beast*, “I needed to be free of the board for two specific days. I engineered everything, but we had Gena Johnson, who works with Dave Cobb at RCA, come in.”

Otherwise, Hamlin likes to keep her world small, she says. “I often find myself holing up with the artist for the first week of a project, thinking through the character of the songs. Only then can we know what clothes to put on that character. Once we figure that out, I can see what environment we want to create.”

The idea behind MOXE, she says, was to be able to create the appropriate sonic, aesthetic and psychological space for an artist. “In the main tracking room, there are giant curtains that can deaden the room in the most dramatic way; it sounds like you’re recording in a different room. Then we have projectable fabrics that we can pull across. If an artist wants to make a record with a certain kind of feel, we can write video scripts and project 360 degrees around them, so that emotionally they’re getting into the place they’re trying to get to.”

There are decorative touches that double as sound design; one room has a rope ceiling, while the acoustic cloud above the console in the control room is a swirl of basket-weave. “You can do this with a rectangle of wood, but you can use different materials and accomplish the same goal with the bonus of it being beautiful and soulful,” she says.

The control room looks down into the live room, which offers expansive views of the woods. “I can stand and really see the artist, or I



The acoustic cloud above the console in the control room is a swirl of basket-weave.

can sit, if I need to be in my own world and not look at what is going on.” For the artist, she says, “It’s important to have an experience where you’re not as cognizant of being watched. It feels like you’re on a journey to figure it out for yourself as a performance. We both get to choose whether we want to be insular or open.”

The mixing desk is a 40-input Rupert Neve Designs 5088, fitted with 24 mono input channels and 24 Shelford 5052 mic preamp/EQ modules, plus eight additional stereo input channels. Hamlin had been working with Norman Druce at Atomic Instruments to design and build a custom console, but the project fizzled out. After a conversation with Josh Thomas, general manager at Rupert Neve Designs, she says, “All the testing and deliberating and comparing of the past year crystalized.... In that moment, I knew that the 5088 was the right desk for us.

“I can’t tell you how many times I’ve been so thankful to have this console instead of the way we were going to go. This is so much better.”

A variety of outboard gear, including some choice ADM, API, Helios and Neve pieces, offers analog alternatives to the Waves

Platinum bundle, UAD, Native Instruments and other plug-ins also on hand. The Pro Tools HDX rig is paired with three Lynx Aurora 16-channel converters.

Hamlin reckons she had “12 killer channels,” plus all her touring instruments and amplification at her home studio, which she moved into MOXE. “And I kept buying stuff. Once I knew the studio was going to get made, I started ramping up.”

Many of the choices are unusual. “I get that there are certain things that make people comfortable,” she says, “but I like things where you have to engage with your ears again. It feels good to discover something and be surprised.”

Accommodation includes a downstairs apartment with a separate entrance, kitchen and seven-person hot tub, plus three upstairs guest rooms. Tielines run throughout the building, including to a multi-use room referred to as “the gym,” enabling any space to be accessed for its reverb qualities or creative inspiration.

During the custom console discussions, Hamlin bought a pair of Atomic Instrument SixTen studio monitors, which feature a rear-loaded 10-inch sub and aesthetically offer a tip of the hat to vintage Altec speakers. “The Atomics open everything up; you can hear all the space between everything. They expand everything but they’re not super hyped,” she reports.

“I love music—I’m not cynical about it quite yet—and one of my favorite things to do is sit in the studio and listen to records. I like to listen to this old Joni Mitchell record, *Turbulent Indigo*, thinking, ‘I hope it heartens them, somewhere, to know that someone is listening to their mix on super hi-fi speakers and hearing every dimension that they put into it.’”

MOXE  
www.moxe.space



The mixing desk is a 40-input Rupert Neve Designs 5088, fitted with 24 mono input channels and 24 Shelford 5052 mic preamp/EQ modules, plus eight additional stereo input channels.

# Apple Drops Intel: What Does It Mean for Us?

BY CRAIG ANDERTON

*"Difficult to see. Always in motion is the future." —Yoda.*

*"Stand firm ... carry on." —Winston Churchill.*



The latest Apple rumor is that the company is going to replace Intel's chips with their own starting in 2020. Of course, 2020 is light years away in computer time, and Apple has been known to change its mind. (Seen any Apple cars lately?) While this move makes sense, I'm going to go out on a limb and explain why any angst may be unjustified for audio pros.

In 2016, Apple CEO Tim Cook said, "Some folks in the media have raised the question about whether we're committed to desktops... We have great desktops in our roadmap." Then in April 2017, Apple senior vice president of worldwide marketing Phil Schiller said the company was completely rethinking the Mac Pro, and talked about an upcoming modular design. He added that the redesign would not appear "this year," which many interpreted as meaning that it would appear the next, in 2018. Apple didn't disabuse people of that notion. Maybe Apple was just being coy because plans weren't firmed up yet, or maybe it was a tactic to discourage people from switching to the suddenly fashionable (and powerful) Microsoft Surface Studio.

Granted, there was a Mac Pro refresh in 2017; both the low-end and high-end models got two more cores and better graphics. But there was no USB-C or Thunderbolt 3 connectivity, or anything fundamentally different in the hardware. Now Apple has committed to a 2019 launch date for the revamped Mac Pro. But will it use Apple chips? Let's zoom out.

Apple is a consumer electronics company, not a computer company. We don't use consumer machines: they're today's equivalent of yesterday's mainframes. I may be very wrong, but I don't see any reason for Apple to jettison Intel's powerful chips in its most powerful computers. Creating silicon at that level for a fairly insignificant product line (single-digits revenue share) doesn't seem worth it.

But given that iPhones, iPads, Apple TV and Apple Watches already use ARM processors, I could easily see non-Intel chips working

their way into notebooks and iMacs. Apple would not only have better margins, but consumer device technology has to be able to turn on a dime and Apple would no longer be held to Intel's delivery timelines. The current Mac

Mini is over three and a half years old, and the MacBook Air hasn't changed much since 2010. It's time for a serious refresh. This would also facilitate merging iOS and macOS, which despite past pronouncements from Apple about wanting to keep them separate, appears inevitable.

Ultimately, I see three possible scenarios:

The worst one for pro audio Mac users is that Apple decides it isn't worth the trouble to produce high-power desktops for a small professional market, dumbs them down,

*(continued on page 24)*

## DC PRO AUDIO

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Model H8530  
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**ARTIST:** HOOBASTANK  
**ALBUM:** PUSH PULL  
**LABEL:** NAPALM RECORDS  
**PERSONNEL:**

**Produced by:** Matt Wallace  
**Mix Engineer:** Paul David Hagar

**Studio:** Studio Delux (Van Nuys, CA)

**Mastered by:** Emily Lazar at The Lodge (New York, NY)

**EQUIPMENT NOTES:** Neve 1073, Quad Eight MP-227, Chandler LTD-1 and Germanium, Altec 1567-A, Aurora Audio GTQ-2, Tannoy Super Gold monitors, Yamaha NS-10 M monitors, Avid Pro Tools 12



**ARTIST:** VACATIONER  
**ALBUM:** MINDSET  
**LABEL:** DOWNTOWN  
**PERSONNEL:**

**Produced by:** Daniel J Schlett

**Engineered by:** Daniel J Schlett

**Studio:** Strange Weather Brooklyn (New York, NY)

**Mastered by:** Greg Calbi at Sterling Sound (New York, NY)

**EQUIPMENT NOTES:** API Legacy AXS console, Dynaudio M3A monitors, Abelton and Avid Pro Tools via BURL B80 Mothership



**ARTIST:** NIK FREITAS  
**ALBUM:** DAY & DARK  
**LABEL:** SELF-RELEASED  
**PERSONNEL:**

**Produced by:** Nik Freitas  
**Engineered by:** Nik Freitas

**Studio:** Poppy Peak (Alhambra, CA)

**Mastered by:** JJ Golden at

Golden Mastering (Ventura, CA)

**EQUIPMENT NOTES:** 1979 Audioarts 20 x 8 bus console, Adam F7 monitors, Avid Pro Tools



**ARTIST:** MICHAEL LEONHART ORCHESTRA  
**ALBUM:** THE PAINTED LADY SUITE  
**LABEL:** SUNNYSIDE RECORDS  
**PERSONNEL:**

**Produced by:** Michael Leonhart

**Engineered by:** Jens Jungkurth, Michael Leonhart, Mauro Refosco, Daniel Freedman, Andrew Raposo, Alec Boulton, James Yost

**Mix Engineer:** Michael Leonhart  
**Studios:** Diamond Mine, Candyland North (New York, NY), B&L (London)  
**Mastered by:** Katsuhiko Naito

**EQUIPMENT NOTES:** Spectra Sonics 1024 console, Neve 8068; Altec Big Red, Genelec 1031, Mackie Hr824 and Auratone monitors; Apple Logic and Avid Pro Tools



**ARTIST:** MIKAELA DAVIS  
**ALBUM:** DELIVERY  
**LABEL:** ROUNDER RECORDS  
**PERSONNEL:**

**Produced by:** John Congleton

**Engineered by:** John Congleton

**Studio:** Elmwood West (Los Angeles, CA)

**Mastered by:** Paul Blakemore at CMG Mastering (Cleveland, OH)

**EQUIPMENT NOTES:** Neve 51 series console, Focal and

ATC SCM50 monitors, Avid Pro Tools



**ARTIST:** YOYA  
**ALBUM:** THE HALF TURN  
**LABEL:** NEW PROFESSOR MUSIC  
**PERSONNEL:**

**Produced by:** Alex Pfender  
**Engineered by:** Greg Cortez, Alex Pfender

**Mix Engineer:** Alex Pfender

**Studios:** New Monkey Studio (Van Nuys, CA), Tiny House (Hollywood, CA)

**Mastered by:** Carl Saff at Saff Mastering (Chicago, IL)

**EQUIPMENT NOTES:** Early 1970s Trident Triad A-Range console, Tannoy FSM 2x15 (mains), DynAudio Acoustic BM15A (nearfield), Avid Pro Tools



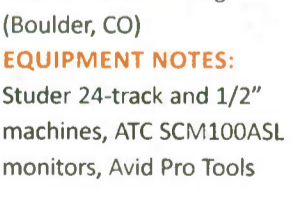
**ARTIST:** CASS CLAYTON  
**ALBUM:** CASS CLAYTON BAND  
**LABEL:** SELF-RELEASED  
**PERSONNEL:**

**Produced by:** Taylor Scott  
**Engineered by:** Geoff Gray, Alex Stricker

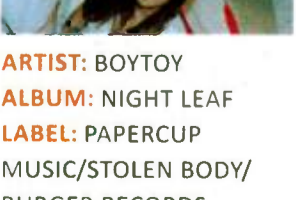
**Studio:** Far & Away Studios (Boulder, CO)

**Mastered by:** David Glasser at Airshow Mastering (Boulder, CO)

**EQUIPMENT NOTES:** Studer 24-track and 1/2" machines, ATC SCM100ASL monitors, Avid Pro Tools



**ARTIST:** BOYTOY  
**ALBUM:** NIGHT LEAF  
**LABEL:** PAPER CUP MUSIC/  
**STOLEN BODY/**  
**BURGER RECORDS**



**PERSONNEL:**  
**Produced by:** Kyle Mullarky  
**Engineered by:** Kyle Mullarky

**Studio:** Pump House Studio (Topanga Canyon, CA)

**Mastered by:** Paul Gold at Salt Mastering (Brooklyn, NY)

**EQUIPMENT NOTES:** BAE Audio 312A console, Barefoot Sound MicroMain monitors, Tascam MS 16 tape machine, Avid Pro Tools



**ARTIST:** HONEST IAGO

**ALBUM:** 29 PALMS

**LABEL:** SELF-RELEASED

**PERSONNEL:**

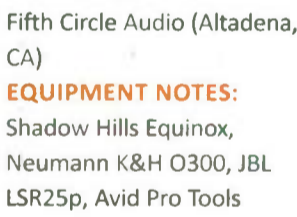
**Produced by:** Nick Tipp

**Engineered by:** Nick Tipp

**Studio:** Soniferous Mobile Studio (Newbury Park, CA)

**Mastered by:** Nick Tipp at Soniferous, Ben Maas at Fifth Circle Audio (Altadena, CA)

**EQUIPMENT NOTES:** Shadow Hills Equinox, Neumann K&H O300, JBL LSR25p, Avid Pro Tools



**ARTIST:** EYES

**EVERYWHERE & DEAD SPACE COLLABORATION**

**ALBUM:** SOUL CYCLE EP

**LABEL:** PSYCHO DISCO!

**PERSONNEL:**

**Produced by:** Kyle Tatum, Brian Doyle (Eyes Everywhere), Steven Brantley (Dead Space)

**Engineered by:** Kyle Tatum, Brian Doyle (EE), Steven Brantley (DS)

**Studio:** Home studios in New York, NY (EE), and Dallas, TX (DS)

**Mastered by:** Kyle Tatum

**EQUIPMENT NOTES:** Ableton Live, KRK Rockit 8s (EE), Mackie MR8 mk3 (DS)



**ARTIST:** MG SOUND

**PLACIDO DOMINGO**

**ALBUM:** GRANADA

**LABEL:** MGSOUND.COM

**PERSONNEL:**

**Produced by:** Gregg Field

**Engineered by:** Gregg Field

**Studio:** Home studios in Vienna, Austria, with producer Gregg Field to complete his contribution—"Granada"—to Arturo Sandoval's *Ultimate Duets* album, released on May 18, after previous sessions in New York City and Madrid.

## United Welcomes VEVA

HOLLYWOOD, CA—Music preservation and archiving company VEVA Sound, which defines, creates and implements industry standards for how sound recordings are verified, validated, preserved and entered into the digital supply chain, has relocated from Burbank, CA, to Frank Sinatra's former Reprise Records label office at United Recording ([unitedrecordingstudios.com](http://unitedrecordingstudios.com)).

## T-Funk Goes 3D

SOUTH WINDSOR, CT—Telefunken Elektroakustik ([telefunken-elektroakustik.com](http://telefunken-elektroakustik.com)) has launched a 3D immersive sound and video experience in collaboration with Power Station New England and the band Ripe that enables viewers to target specific microphones and solo specific sounds in a performance recorded through the studio's Neve 8068 console with a full range of Telefunken microphones.

## Firehouse 12 Adds Sankens

NEW HAVEN, CT—Newly appointed New England-based Sanken dealership Parsons Audio has hit the ground running with the sale of a pair of Sanken Chromatic ([sankenchromatic.com](http://sankenchromatic.com)) CO-100K high-resolution microphones to the Studio at Firehouse 12, in New Haven.

## MG Sound Hosts Placido

VIENNA, AUSTRIA—The third time was the charm for opera superstar Placido Domingo, who traveled to MG Sound ([mg-sound.com](http://mg-sound.com)) recording studios in Vienna, Austria, with producer Gregg Field to complete his contribution—"Granada"—to Arturo Sandoval's *Ultimate Duets* album, released on May 18, after previous sessions in New York City and Madrid.

## Adding Gear Deep Inside the Bunker

CAMBRIDGE, UK—Perhaps best known as a drummer and percussionist, Ralph Salmins is a member of The Waterboys, but he's also a studio owner, having built The Bunker just outside London in Welwyn Garden City in 1995, primarily as a recording and producing space for himself. However, in recent months he has been joined by recording engineer Haydn Bendall.

"I play drums on Haydn's productions and have done so for many years, and he often records for my projects, too," Salmins explains. "He's around a lot of the time, recording and mixing various artists and projects of his own."

Recent projects handled at the facility include *Elvis Symphonic*, *Beach Boys Symphonic*, *Georgie Fame*, *Audio Network* and the *Peaky Blinders* soundtrack.



Ralph Salmins (left) and Haydn Bendall hunker in The Bunker.

"We have great vintage drums, piano and vintage keyboards ready to go in a relaxed, wonderful-sounding environment," Salmins says. "We do lots of rhythm section recording as well as brass and vocals and small string sections. The signal path of the 1976 Harrison 2824 console, Vintage Neve, API and DW Fearn mic pre's go through the Prism Sound converters, which gives us beautiful results."

Salmins and Bendall each contributed their own Prism Sound ADA-8XR multichannel audio converters to the space. "I chose this converter because it offers the most amazing sound—something that, in my view, is unsurpassed by anything else," explains Salmins, whose ADA-8XR includes an MDIO-HDX card.

"The plug-and-play integration with my Pro Tools system is fantastic. It really is a very easy-to-use unit that offers exceptional audio quality." Salmins adds that the unit is now permanently connected to the studio's Pro Tools system and is used on everything recorded there.

The Bunker  
www.ralphsalmins.com/the-bunker

Prism Sound  
www.prismsound.com

## Radiohead's Selway Surrounded by Soundtrack Work

LONDON, UK—When not hitting the skins for Radiohead, drummer Philip Selway is perpetually at work on outside projects, the latest of which is the soundtrack for the upcoming moody vampire tale *Carmilla*.

Much of the work has taken place in Oxford, England, at Evolution Studios; studio owner Nicholas Moorbath commented, "Philip and I have worked together in the past, so I was delighted when he brought his latest film project to Evolution."

Directed by Emily Harris, the film is an atmospheric coming-of-age love story inspired by Joseph Thomas Sheridan Le Fanu's Victorian Gothic vampire novel of the same name. The film's production company, Altitude Film Entertainment, describes it like this: "15-year-old Lara lives with her father and her strict governess, Miss Fontaine, in total isolation and is struggling to find an outlet for her curiosity and burgeoning sexuality. When a carriage crash nearby brings a young girl into the family home to recuperate, Lara is enchanted by the eponymous Carmilla."

To capture the right vibe, Selway recorded himself and others, Moorbath reported: "He is an incredibly talented composer and multi-instrumentalist, and we had great fun recording the Elysium string



Surrounded by PMC at Evolution Studios are Philip Selway (left) and Nick Moorbath.

quartet, the cellist Laura Moody and various other instruments that Philip played. The score is complex and interesting and the whole film is fantastic, with exquisite cinematography."

In order to accommodate the project, Moorbath expanded his stereo PMC twotwo.8 active reference monitor system to 5.1. "I was very grateful to PMC, who agreed to lend me the additional monitors I needed to complete this project," Moorbath says. "I am now extending Evolution, and by the end of this year I will have a permanent

surround mix suite that will, of course, be equipped with twotwo.8s.

"I first came across PMC two-two monitors during a Pro7ect annual songwriting retreat in Brighton, which PMC was sponsoring. They had equipped Pro7ect's pop-up studios at Hotel Pelirocco with two-two monitors and I was really impressed by their clarity and accuracy. That experience led me to order a pair of the flagship twotwo.8s for Evolution, which I chose for their smoothness and power."

PMC  
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Sound Thinking

TASCAM  
www.tascam.com

## Third Coast

(continued from page 18)

craft build five pairs from our design. They then got to use our design and take it further, which became the Series Four,” he says.

Chrysler has two of those original blue Electrotec desks, and when he started Third Coast, he put an original black-faced Series Four in the main control room. “I’ve recapped that whole thing, put in new ICs, new faders. It’s fun. That’s my ’57 Chevy—it’s therapeutic,” he says.

Studio A is spacious, designed specifically for musicians to track together live, he says. “When we started building, there weren’t many big rooms still around, especially in our neck of the woods in Michigan. Acoustically and sonically, it sounds great. The big room disperses well. You put a gobo in there and you can mic an acoustic guitar in the room with a drum set and get away with it,” he says. The tracking space includes multiple iso booths, including separate drum and guitar rooms.

About a year ago, Chrysler bought an SSL 4000G from a facility in Chi-



An original black-faced Soundcraft Series Four console lives in Third Coast's Studio B.

cago, installed it in the A room and moved the Soundcraft into B. “Studio B is smaller, tighter,” he says. “It’s acoustically symmetrical, designed for mixing. Even when B wasn’t open, the control room was finished, so we did a lot of our mixing back there.” Both live rooms are tie-lined to both

control rooms.

The B room works well when bands want to overdub, he says. “We can always bring in any of our mic pre’s, but there’s a lot of records that were tracked on that thing. It doesn’t sound like a standard Series Four.”

The SSL is kept in shape by Bruce Millett’s L.A.-based company, the Desk Doctor. “Tony, his tech, has a vacation place right next to Grand Haven and comes out regularly. He’s probably been [to the studio] close to 10 times and has really got it tweaked nice.”

Outboard, there’s a mix of vintage and newer microphones, mic pre-amps, dynamics and effects processing. Then there are the instruments.

“We have a lot of vintage keyboards, all in great shape,” he says, listing a Hammond B3 and a C3, both mid-1950s, plus four Leslie cabinets, a ’73 Fender Rhodes Suitcase and a ’70 Wurlitzer 200A. The vintage backline includes Marshall heads, an AC30 and a ’65 Fender Twin Reverb. “Apart from 3 inches of speaker cable,” he

reports, “it’s all original.”

There are plenty of drum kits to choose from, he continues, and Third Coast works closely with Dream cymbals. “They make wonderful dark cymbals for recording that are just amazing.”

A Studer A810 2-track machine in the A room serves almost as a hardware plug-in. “We’ve run so much through it: almost every bass track, acoustic guitars, vocals. Pretty much everything gets mastered to 2-track on it, just so we can soften it up,” says Chrysler, offering an option to the Pro Tools master.

As his Medicare enrollment approaches, Chrysler is obviously pleased to be packing away his in-ears for good. “It’s going to be a wonderful transition for me,” he says.

It will most likely still involve long hours, though, he admits. “But I’m really looking forward to just going home at night.”

Third Coast Recording Company  
www.thirdcoastrecording.com



The “smaller, tighter” Studio B is often used for overdubs.

## Anderton

(continued from page 21)

boots the Intel chips and cedes the market to Windows.

A somewhat better option is that Apple starts moving more of iOS (which, let’s face it, needs work) over to macOS and dismantles the wall between the two. The notebooks and iMacs favored by students, companies, home users and others become less expensive, increasing market share. macOS remains enough like “vintage” macOS that software companies don’t have to go too crazy

porting to a new processor architecture or folding the changes into their Intel code. Also, the machines remain powerful enough for pro audio applications that aren’t excessively demanding.

The best option for pro audio is that Apple follows through with its 2019 modular computers, which are so good that they reignite the Mac Pro line. They continue to use powerful

Intel CPUs even while the consumer devices become more ARM-oriented, and macOS still does what we need (even though some will grouse about “consumer creep,” like they did when Logic Pro acquired some GarageBand

vibe). And given that pro machines are big investments, Apple decides that the computers are powerful enough for professionals and makes them expandable, giving them a longer us-

able life. Apple needs to get the design right only once, and the computers can coast for years yet still keep people happy. Maybe the reason for launching in 2019 instead of 2018 is that Apple needed more time to get these right.

For now, I think we can safely follow Winston’s Churchill’s advice (or if you prefer, “Don’t Panic” from *The Hitchhiker’s Guide to the Galaxy*). But remember, we’re dealing with technology, Apple and rumors. It’s always Yoda who gets the last laugh.

Author/musician Craig Anderton updates craiganderton.com every Friday with news and tips. His latest album, *Simplicity*, is now available on Spotify and cdbaby.

I may be very wrong, but I don’t see any reason for Apple to jettison Intel’s powerful chips in its most powerful computers.







PHOTO BY RALPH LARIMANN

briefs

### SMPTE Releases Report

WHITE PLAINS, NY—SMPTE has released the results of the SMPTE 2018 Innovation and Technology in Media Entertainment Survey (smpite.org/2018survey), which examined artificial intelligence and machine learning (AI/ML), immersive media, the Better Pixels Project and professional media over managed IP networks. More than 90 percent of respondents considered moving media over IP “an essential issue for the future of the M&E tech industry.”

### CCTV Goes IP with Clear-Com

ALAMEDA, CA—A recently upgraded hybrid solution combining Clear-Com (clearcom.com) IP, wireless and traditional components—including 15 Eclipse HX Omega frames, 20 Eclipse HX PiCo frames, 200-plus V-Series intercom panels and 10 sets of FreeSpeak II wireless belt-pack systems—with a network of four existing Eclipse frames, 146 V-Series panels and 25 FreeSpeak II belt-packs at China Central Television (CCTV) has created potentially the largest IP-based comms system in the broadcast world.

### White Mark Designs Suite TV Room

SUFFOLK, UK—Post-production company Suite TV has opened a fourth studio at its London premises, a 20- by 15-foot studio designed by White Mark (white-mark.com) that is equipped for Dolby Digital 5.1 surround sound and DTS, with a 5.1 Genelec monitoring system, custom-designed furniture by AKA and a Screen Excellence projection screen.

### SBE, ATSC Team for Certification

WASHINGTON, DC—The Society of Broadcast Engineers (sbe.org) and the Advanced Television Systems Committee (atsc.org) are jointly developing a new Specialist level of SBE certification that will benchmark proficiency in the ATSC 3.0 System standard. An individual must first hold one of the SBE core-four certifications: CBT, CBRE/CBTE, CSRE/CSTE or CPBE.

## MPEG-H Trialed at *Eurovision*

BY STEVE HARVEY

LISBON, PORTUGAL—The European Broadcasting Union (EBU) and Fraunhofer IIS conducted the first live production trial of the MPEG-H TV Audio System, with immersive and interactive sound, at the 2018 *Eurovision Song Contest* in Lisbon, Portugal, in May. For the demonstration, sound engineers from Fraunhofer installed microphones high above the floor of the Altice Arena, combining them with audience mics and commentator feeds to create a 5.0+4H (height) ambient mix.

This was the 63rd annual *Eurovision Song Contest*, which is the world’s longest-running international television music competition; it has become one of the most-watched non-sporting events in the world, attracting a global audience of approximately 200 million. Contestants are primarily from EBU countries, but competition has expanded over the years to include Russia, Australia and Israel, this year’s competition winner.

Videohouse, headquartered in



The 2018 *Eurovision Song Contest* final took place on May 12, 2018

Belgium, supplied the remote media production facilities for the show’s world feed on behalf of EBU and Portugal’s RTP public broadcasting company. The show was broadcast over three days, including the semifinals on May 8 and 10 and the finals on May 12.

Riedel supplied a massive, all-fiber communications and signal distribution system for the production, with a MediorNet real-time media net-

work providing redundant and decentralized signal routing and transport. Riedel also supported the production with a 25-member on-site engineering team.

Fraunhofer’s team—research engineer Adrian Murtaza and sound engineers Andreas Turnwald and Christian Simon—mixed, authored and monitored the MPEG-H Audio immersive sound production in

(continued on page 26)



## A Change of Pace in Hollywood

BY STEVE HARVEY

HOLLYWOOD, CA—As previously noted in the pages of *Pro Sound News*, the demands of the streamers—Netflix, Amazon and their ilk—have brought about an evolution of the media production process. One independent post house, Pace Pictures, has responded with a new business model, offering on-demand production workspace that can scale with the needs of the project and—oh, by the way—a fully equipped picture and sound post shop, including a Dolby Atmos mix stage.

The idea, says Heath Ryan, the Australian founder of L.A.-based Pace Pictures, is to bring the office space-on-demand model to the media production and post-production community. “The concept, in tandem



Pace is a fully equipped picture and sound post shop, including a Dolby Atmos mix stage.

with IgnitedSpaces, is to have offices upstairs that allow a film or TV show to come in and start a production with one desk, then grow as their production grows.”

Approximately 45,000 square feet on two upper floors of the high-rise on Hollywood Boulevard that previously housed Soundelux is subdivided into private offices, conference

rooms, shared areas, breakout rooms and events spaces with views of Hollywood and downtown L.A. Space is available on monthly contracts. “It’s a lot higher-end with a lot more consideration for the needs of entertainment clients—content security, privacy—than a normal office-on-demand concept,” says Ryan, whose 15-year-old company previously offered editorial services out of Studio City and Westwood.

The scalable and flexible production workspace concept appears to dovetail nicely with the way that Netflix, located about a mile away, and Amazon work, says Ryan. “They have so much going on, they’re not interested in setting up offices and bays all the time.”

(continued on page 26)



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## Eurovision

(continued from page 25)

a special container located in the TV compound next to Videohouse's OB facilities. There, they combined the audience microphones, audio feeds from the main production and the feed from each country's commentary booth (37 in total), in addition to the stereo and 5.1 mixes provided by the EBU and its production team, to create a 5.0 mix—no LFE channel—with four height channels.

To capture the immersive mix's height component for the MPEG-H Audio trial, the Fraunhofer engineers suspended a Hamasaki square comprising four Schoeps MK8 figure-of-eight capsules on an Ambient A-Ray support system approximately 85 feet above the center of the arena floor. The rig was positioned slightly above and about 30 feet out from the main audience P.A. system.

To create the ambient mix, Murtaza and Turnwald explained via email, "We panned the 26 mono microphones distributed over the arena close to the audience, and the more distant Hamaski square using the Nuendo DAW's onboard 3D panners."

They also noted, "Careful delay calculations were necessary to avoid echoes. Tuning the delay on each of the microphones turned out to be a

key element in sound designing the ambience."

The team used an RME MADI Router to combine the signals coming from the Videohouse OB van and the commentaries coming from the Riedel intercom into one MADI stream. "The four overhead signals were pre-amplified in the arena roof using an RME Micstasy and then sent to the TV compound via 300 meters [984 feet] of optical MADI fiber," they reported.

"The combined MADI streams were then recorded by two Video Devices PIX 270i recorders and passed on to the Nuendo DAW for mixing and monitoring. We didn't use a hardware mixing console, as there are nearly no consoles with 3D panners on the market yet."

The European Telecommunications Standards Institute's DVB specification published in early 2017 supports the MPEG-H TV Audio System, as well as Dolby Laboratories' AC-4, for its next-generation audio component, as does the ATSC 3.0 broadcast specification. Both audio systems support objects, which enable personalization features such as alternate languages, a feature that Fraunhofer demonstrated in Lisbon.

"Since the MPEG-H Audio system allows for authoring content in a very flexible way, the languages selected for delivery in the MPEG-H Audio stream varied over time, depending on the participant coun-



Riedel supplied a massive, all-fiber communications and signal distribution system for the production.

tries," the team explained. "For example, during one demonstration, the Portuguese, English, French, German and Finnish languages were selected."

During the trial, personalization features could be experienced via an MPEG-H player interface installed on a tablet. Listeners could select different languages, control the prominence and volume level of the dialogue in the mix, and pan the commentary.

The trial also demonstrated various presets that were authored live. "The presets, in this case, used the same mix of the ambience in 5.0+4 height channels," the team elaborated. The difference between the presets was the relative level of the commentators in the mix. "The 'Default' preset was similar to the mix that would be usually produced for broadcast, while the 'Dialogue+' preset was designed

for better speech intelligibility," they explained. A "Venue" preset provided an immersive experience of the Altice Arena without commentary.

The production's Riedel MediorNet backbone consisted of six MetroN core routers, 24 MediorNet modular frames and 30 MicroN high-density media distribution network devices. The MediorNet network was deployed in a decentralized configuration, ensuring redundancy of all video and audio signals for commentary, intercom, signal distribution and radio communications, including the feeds for monitors in commentary booths and for displays and projectors in the Altice Arena.

Fraunhofer IIS

[www.iis.fraunhofer.de/en.html](http://www.iis.fraunhofer.de/en.html)

Riedel

[www.riedel.net](http://www.riedel.net)

## Pace

(continued from page 25)

The concept includes the use of the lobby for those renting space upstairs. "We deliver a concierge experience. Even if you've only got one desk upstairs, you can make this a landing place for your clients."

Pace has moved its picture and sound services into the first-floor complex built out and formerly occupied by Soundelux. Once production work is completed upstairs, says Ryan, "they can come downstairs to do their post as needed." As upstairs, the downstairs facilities can also be scaled to meet demand. "And this can be four-walled," says Ryan. "Bring your own mixers and whom-ever you need for your production, and we provide the very best as far as the rooms go."

The 20,000-square-foot first-floor site is outfitted with a variety of services, including several Blackmagic DaVinci Resolve Studio color grading suites. One is equipped with a Barco 4K HDR digital cinema projector and doubles as a small screen-

ing room; another is used frequently for VR, including music concert and festival projects from a production company renting offices upstairs; and a third supports Dolby Vision, specifically for Netflix projects. Four Avid edit bays will soon be joined by a five-station, headphone-only editing bullpen.

The company's sound division has partnered with re-recording mixer Michael Minkler, a three-time Academy Award-winner for *Dreamgirls*, *Chicago* and *Black Hawk Down*, who took the lead in designing the Dolby Atmos room together with staff from the Formosa Group and Westlake Pro, which supplied and installed all the equipment. The room features a dual-operator Avid S6 mix system and a 24-speaker array—including six overhead—of 5-inch JBL 7 Series reference monitors, with Meyer Sound cinema speakers behind the screen.

"I don't think there's a single analog audio cable in this entire rig; everything is run over Ethernet and MADI," says David Tichauer, Pace's mix technician and re-recording mixer. The machine room racks are crammed with Focusrite RedNet

boxes, including nine HD32R units bridging the three Pro Tools HDX rigs—two 64 I/O playback machines and a 128 I/O recorder—to the Dante network. RedNet AM2 headphone boxes are also available around the mix stage.

"I have a soft spot for Dante. I used to work for Focusrite," says Tichauer, who was previously employed in technical support for the company. He joined Pace just as the Dolby Atmos room was being completed.

"It's an amazing-sounding room," he says. "It sounds much bigger than it is. In fact, people who have walked into this room say it's way bigger than they remember."

Three additional JBL 705i speakers and stands are available for nearfield mixing. "We set those up and roll in a TV. It works amazingly well," he says.

Minkler did some predubs for *Mamma Mia 2: Here We Go Again* on the stage before moving to Universal for the mix. "He called me and said it translated perfectly," Tichauer reports.

Pace Pictures has already hosted numerous projects in addition to

the *Mamma Mia* sequel mix and VR concert films. Finished projects include indie feature films *Silver Lake*, *Flower* and *The Resurrection of Gavin Stone*, the CW TV series *iZombie* and a Mariah Carey music video related to Sony Pictures' animated feature *The Star*.

"It's been a dream of a system to work with," says Tichauer, who notes that the facility passed with flying colors when the security auditor came by before the *Mamma Mia* predubs. "We just installed a new central server. It's very secure—everything is offline, the RAID arrays are encrypted, and everything is password-protected."

An ADR/voiceover recording room and adjacent booth are also nearing completion. "I've done a little bit of work in there already," he says. "I tuned the room with the JBL Intonato box with no acoustic treatment and it was usable. Once we get the treatment in there, it's really going to shine."

Pace Pictures

[www.pacepictures.com](http://www.pacepictures.com)

IgnitedSpaces

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innovations: the manufacturer's view

# Refinement with Neodymium

## CELESTION CDX14-3040 COMPRESSION DRIVER

BY PAUL CORK

Product development is a process of continual refinement. At Celestion, our engineers have long made use of finite element analysis techniques to advance the mechanical, acoustic and electromagnetic performance of each new product beyond that of previous designs, even those that have become industry standards.

Celestion's new CDX14-3040 compression driver is a perfect example; it stands on the shoulders of industry giants. It's based on a traditional design approach to deliver a high-quality HF response with a familiar sonic character. The device offers several performance advantages over its predecessors, however, including lower overall distortion and reduced size and weight.

In 2014, we introduced the CDX14-3030, a 1.4-inch exit/3-inch voice coil compression driver with an all-in-one titanium diaphragm and surround. During its development, we took the opportunity to take what is essentially a tried-and-tested approach to large-format compression driver design and put a little bit more science into it. We rigorously applied finite element analysis (FEA), which essentially breaks down a complex puzzle into many small equations that a computer can solve within minutes, enabling us to better optimize and improve the design.

This device was developed during a period when neodymium prices were skyrocketing, which meant that it featured a heavier, bulkier ferrite magnet. Fast-forward a few years and neodymium prices are more stable, so we decided to develop an updated version of the 3030 on a neodymium platform. The resultant CDX14-3040 also has a 1.4-inch exit, a single-piece titanium diaphragm, 3-inch edge-wound copper-clad aluminum voice coil, and an annular three-slot phase plug, but instead of ferrite, it features an equivalent neodymium magnet. Like the 3030, it delivers 75W RMS (AES standard) power handling with a sensitivity of 106.5 dB from 500 Hz to 20 kHz.

Again, we applied FEA to advance the performance of the compression driver design. We investigated the shape of the surround to improve the linearity of the excursion. We also

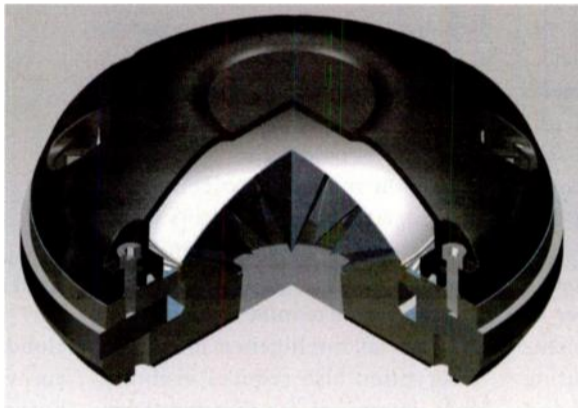


The neodymium-based CDX14-3040 has a 1.4-inch exit, a single-piece titanium diaphragm, 3-inch edge-wound copper-clad aluminum voice coil, and an annular three-slot phase plug.

did more work on the phase plug to improve the modal suppression. Titanium can be subject to fatigue; as the diaphragm flexes under certain conditions, it can become brittle and eventually crack.

By applying FEA to the geometry and the surround, we were able to reduce stresses and eliminate the possibility of fatigue.

The CDX14-3040's diaphragm surround has a periodic geometry, which minimizes the modes around its circumference. The shape of the surround's geometry has effectively eliminated the circumferential modes, yet still allows a linear excursion. Further, the geometry of the high-temperature plastic clamp ring is optimized for stiffness to ensure that the dome is always held rigid, preventing the diaphragm from bending. The diaphragm assembly is located into the magnet with a precision-cut aluminum locating ring, ensuring that the coil is always held concentric to the magnet gap. Obviously any offset of the voice coil can allow it to hit the magnet assembly. The locating ring is probably one of the most important



parts of the driver, but it's so often overlooked.

Between the cover and the clamp ring, we have a semi-rigid layer of plastic—a polymer similar to rubber—that spreads the clamping pressure more evenly across the diaphragm assembly. This means that the diaphragm assembly is more likely to stay flat, which holds the dome without allowing it to deform.

The aluminum cover is die-cast, and inside, we've included some acoustic treatment to damp the resonances in the cavity to absorb the radiation to the rear of the dome. It also fools the sound into thinking the cavity is slightly bigger than it is. Having a large cavity behind the driver allows the device to work down to a lower frequency, because the air load behind the diaphragm can be the limiting factor to its inward ex-

ursion. That helps eliminate another potential source of distortion: that it may work in one direction better than the other.

We recommend a crossover frequency of 1 kHz, but it really depends on the power being applied and the size of the horn. Our recommendation is made on the understanding that customers will test it thoroughly to their satisfaction before they release their product.

Now that line arrays are commonplace, issues of size and weight are very important. By keeping the diameter of the drivers as small as possible, the exit holes in the front of those drivers can be positioned as close together as possible. The distance between the exit holes will determine how well the drivers couple and up to what frequencies.

If you can get the drivers really close together, they'll couple to a higher frequency, and you're less likely to

get lobes in the response. By using a neodymium magnet, we have reduced the size and weight of the CDX14-3040 compared to its predecessors, facilitating closer coupling. Neodymium is a more magnetically powerful material, which means that for the same gap flux, you can use a whole lot less of it. The diameter of the CDX14-3030 is 180 mm, or 7 inches. Compare that to the diameter of the CDX14-3040, which is

only 131 mm, or just over 5 inches. We have also put a bevel on the back cover, allowing it to fit into narrower or more trapezoidal-shaped speaker cabinets. That also helps reduce the weight. We made significant use of FEA on the magnet assembly, too, to minimize the amount of steel required.

Celestion's new CDX14-3040 is one of the most compact compression drivers and lightest in its class: it's around 500 grams (1 pound) lighter than other, similarly performing products out there. Individually, that might not sound like a great deal, but when you're touring with a serious line array, performing in large venues night after night, that can add up to a significant saving.

Paul Cork is head of engineering at Celestion.

Celestion  
www.celestion.com

# Need to Know: Cybersecurity

EVERY ENTERPRISE IS AT RISK AS ATTACKS DIVERSIFY AND ADVERSARIES GET SMARTER

BY PAUL MCLANE

*Editor's Note: Welcome to Future's third edition of Need to Know, a series exploring complex topics and how they apply to each industry served by our websites and magazines.*

Malicious cyber activity cost the U.S. economy between \$57 billion and \$109 billion in 2016, according to the White House Council of Economic Advisors. Cyber threats are ever-evolving, and the sophistication of adversaries keeps growing. But, according to the White House report, the private sector may, for any number of reasons, be tempted to underinvest in cybersecurity.

National security officials echo the concern. "Our daily life, economic vitality and national security depend on a stable, safe and resilient cyberspace," said the U.S. Department of Homeland Security in explaining why it devotes a large web resource to the topic.

The department this spring released a strategy hoping to help reduce vulnerabilities, build resilience, counter malicious actors and make the ecosystem more secure. It identifies 16 "critical infrastructure" sectors where a loss of networks would have a debilitating effect on the country. But even trying to define the sectors demonstrates how broadly the subject touches every corner of American life; they range from commercial facilities and manufacturing to the communications sector and healthcare.

Homeland Security took particular note of a growing concern about the threat of "wide-scale or high-consequence events" that could cause harm or disrupt services on which the economy and millions of people depend.

How might your own business be whacked? A threat can come via denial of service attacks; destruction of data and property; disruption of business, perhaps for ransom; and the theft of your property and financial and strategic information. Reports of data breaches and cyberattacks are everyday news. Lewis Morgan on the IT Governance Blog curated more than 60 such stories in the month of May and counted the total of breached records that month at more than 17 million—"actually quite low when compared with previous months."



## THREATS IN BURSTS

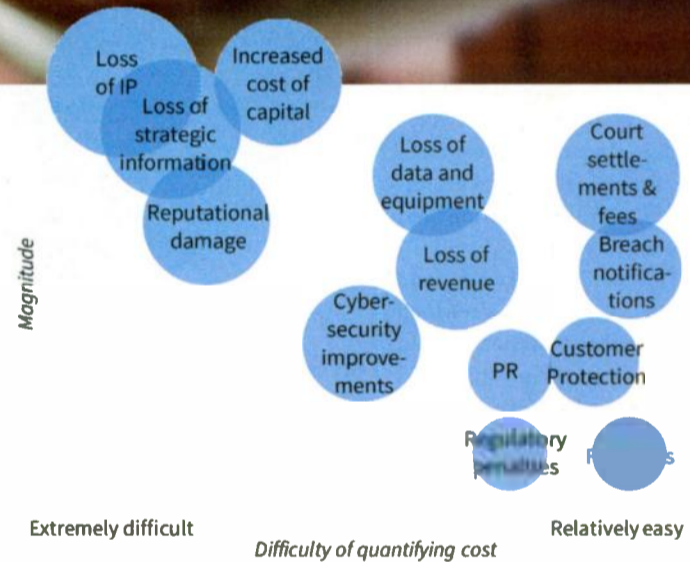
In its 2018 Annual Cybersecurity Report, Cisco said malware is definitely becoming more vicious and harder to combat. "We now face everything from network-based ransomware worms to devastating wiper malware," the company stated. "At the same time, adversaries are getting more adept at creating malware that can evade traditional sandboxing."

While encryption can enhance security and is used by roughly half of global web traffic, Cisco continued, encryption provides bad actors with a powerful tool to hide command-and-control activity. "Those actors then have more time to inflict damage."

Artificial intelligence may help. "Encryption also reduces visibility. More enterprises are therefore turning to machine learning and artificial intelligence. With these capabilities, they can spot unusual patterns in large volumes of encrypted web traffic. Security teams can then investigate further."

Cisco made note of several other trends and findings:

- Short, pernicious "burst attacks" are growing in complexity, frequency and duration. "In one study, 42 percent of the organizations experienced this type of DDoS [distributed denial of service] attack in 2017. In most cases, the recurring bursts lasted only a few minutes."
- Many new domains are tied to spam campaigns. "Most of the malicious domains we analyzed, about 60 percent, were associated with spam campaigns," Cisco reported.
- Security is seen as a key benefit of hosting networks in the cloud. "The use of on-premises and public



An "adverse cyber event" can cost your business in numerous ways. This graphic is from a report by the White House Council of Economic Advisors.

cloud infrastructure is growing. Security is the most common benefit of hosting networks in the cloud," the security personnel respondents say.

- One bad insider can be a big threat, and a few rogue users can have a huge impact. "Just 0.5 percent of users were flagged for suspicious downloads. On average, those suspicious users were each responsible for 5,200 document downloads."
- It's not just your IT assets that are at risk. Expect more attacks on operational technology (OT) as well as Internet of Things (IoT) devices. "Thirty-one percent of security professionals said their organizations have already experienced cyberattacks on OT infrastructure."
- The multivendor environment affects risk. "Nearly half of the security risk that organizations face stems from having multiple security vendors and products."

## IOT RANSOMWARE

Another observer taking stock is Aid-

an Simister, the global senior vice president for Lepide Software.

Writing in a post on the CSO website, he, too, predicts artificial intelligence will assume a larger role. But while AI may help the good guys, he notes, hackers too can use it to launch more sophisticated cyberattacks.

Many businesses, Simister predicted, will not comply with the European Union's new General Data Protection Regulation on data protection and privacy (the thing you've been getting all those emails about). He predicts some companies will choose to ignore it, accepting the risk.

We're also likely to see a growing number of companies adopt multifactor authentication in response to data breaches involving weak, stolen or default passwords.

He expects that more sophisticated security strategies may find wider adoption. These may include the use of "remote browsers;" deception technologies that imitate a

## Cybersecurity: The Pro Audio Files

By Tom Kenny

Even when artists recorded in a single room, with a single producer and master tapes locked up by the label, there was theft, which today we call piracy. Even at a top-selling concert, with an all-analog signal chain, there were bootlegs made, later to be sold. The human factor in the entertainment media security chain hasn't really changed, but today, there are far more points of access and far more ways to pilfer a project.

Until recently, the main focus on security of media and media assets in the digital age involved the distribution chain, whether a song, movie or live performance. Over the past five years, highlighted by well publicized hacks of Sony, HBO and others (and there are many, many others that are not reported, experts agree), the emphasis is shifting to the production and post-production chains.

Consider how many points of contact a typical song, motion picture or television show might have during its life, from concept to distribution. Files are created by writers and turned into demos at home, then sent as WAV files to editors, then to mixers, marketers, distributors, and finally sent by email to producers on laptops for song approval. Multiply that by ten for an album, by 100 for a feature film. Then add Dropbox, Google Drive, Hightail or straight-up email. The number of points of contact—and potential security breaches—rise exponentially.

For now, on a production level, most organizations seem to be dealing with cybersecurity through file encryption of stored data, or "data at rest" (not moving through a network). The MPAA requires studios and vendors that touch elements to have procedures in place to deal with encryption at rest. Twelve years ago, NBCUniversal consulted Fortium, a UK company specializing then in email and corporate security, about its practices.

"They had identified an area in post-production where they had large volumes of content being edited in the clear," recalls Mathew Gilliat-Smith, CEO of Fortium. "They had an MPAA audit checking their systems and they were pretty good, except for a small hole in post-production picture and sound editing. That's where our MediaSeal product got going."

MediaSeal handles files at the kernel level, the operating system level, so that the Fortium system remains file-agnostic and can work in Adobe Premiere, Avid, Aspera, Object Matrix or any other platform. "Any security system is about ease of use," Gilliat-Smith says. "There's a psychological gap with people taking a different step to what they normally do. Our job was to make it easy to use and simple to integrate into any workflow."

In the ensuing 12 years, Gilliat-Smith notes, some headway has been made in preventive measures, though most facilities, organizations and

individuals continue to react only after a crisis.

Meanwhile, the boom in networked AV systems has given rise to entirely new levels of concern in the venues and performance spaces of the future. Dante, AVB and AES67 interoperability protocols all tout military-grade security, and they are effective. But as has been proven time and again over the last five years, across all industries, nobody is totally secure.

As Benson Chan, a senior consultant at Strategy of Things, wrote in January in advance of ISE: "A new generation of AV systems is coming to market. Powered by such emerging technologies as IoT and AI, these systems promise to bring disruptive change. At the same time, these systems pose significant cybersecurity risks.... In many corporate environments, AV and IT are still separate organizations responsible for their respective systems. IoT technologies can fall into a 'no-man's-land,' with no single organization that is responsible for it. In a network, AV cybersecurity vulnerabilities don't fall into neat organizational boundaries. Hackers look for any point of entry, whether it is on the AV, IoT or IT side. AV cybersecurity is not AV's problem, or IT's problem. It's everyone's problem."

Sobering thoughts indeed, though it drives home the message that security is only as strong as the weakest link in the chain.

*Tom Kenny is content director of Mix magazine.*

company's critical assets; systems to spot and identify suspicious behavior; better network traffic analysis; and "real-time change auditing solutions" that do things like detect abuses of user privileges or suspicious activity in files and folders.

But Simister, too, sees the risk of more attacks backed by hostile governments; in response, he predicts more efforts to train staff and to develop international sharing of information.

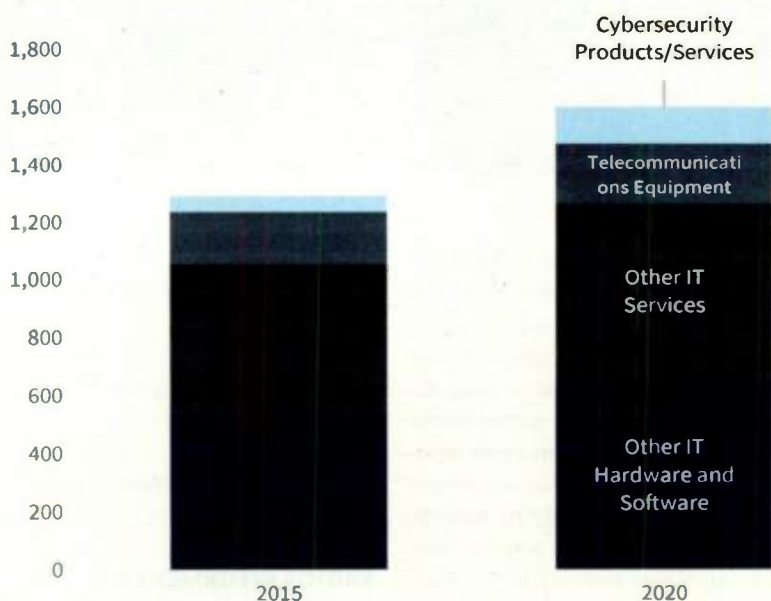
### PRIVACY PARADOX

One change in mindset visible in the market is a de-emphasis on the idea of "perimeter security."

"You are not safe behind the perimeter because the perimeter itself no longer exists," Akamai argues on its website. "Today's world is cloud- and mobile-driven, and the traditional moat-and-castle approach to enterprise security is no longer applicable for modern business practices."

Akamai chief technology officer Charlie Gero argues in favor of what he calls zero trust security architecture. "Companies must evolve to a 'never trust, always verify' zero trust model to secure against the wide variety of threats that exist and are constantly evolving," Akamai stated.

Looking at the consumer economy more broadly, cybersecurity is likely to become more crucial thanks to ongoing developments in areas as diverse as cryptocurrency, interactive



Source: Morgan and Stanley (2016).

Investment projections in cybersecurity (in billions of dollars)

smart speakers and mobile payments.

### THE WEAK HUMAN LINK

IT expert Wayne Pecena, who works in the broadcast and education sectors, says security should be an ongoing process. Yet at many businesses, unfortunately, it tends to be treated as a one-time, set-it-and-forget-it event. Pecena is assistant director information technology of educational broadcast services at Texas A&M University and director of engineering for KAMU Public Radio and Television; he says cybersecurity never ends.

"It is a continuous process of monitoring, evaluation, analysis and prevention as the threat landscape is always in a state of change and evolution," he said.

"I would also not lose sight of the past, as ransomware, phishing [and] distributed denial of service will likely continue at an accelerated pace," he added. "As cloud services and applications continue to expand, I would also keep the cloud cybercrime landscape or Cybersecurity-as-a-Service [CaaS] on my radar."

In Pecena's experience, most organizations spend plenty of time and

money in protecting their IT environment, but often the simplest areas can be overlooked while the focus is on higher-tech matters.

"Social engineering remains one of the largest threats to an organization, and the human factor remains a weak link. The Internet of Things movement brings challenges, as most of these types of devices lack any real internal security capability and instead rely on external protection means."

It was Robert Mueller—yes, that one—who is credited with saying back in 2012 that there are only two types of companies: those that have been hacked and those that will be hacked.

Today that wisdom is often updated to read: "There are two types of companies: Those that know they've been hacked, and those that don't know they've been hacked."

Manage accordingly.

Paul McLane is managing director, content, of *Radio World* and the Future TV/Radio/Video group.

### NEED TO KNOW MORE? ▼

Have a burning question about cybersecurity? Or maybe there's a particular topic you'd like to see us tackle in future installments of Need to Know. Email us at [needtoknow@futurenet.com](mailto:needtoknow@futurenet.com) and we'll put our top minds on it!

KROTOS REFORMER, REFORMER PRO, DEHUMANISER II, DEHUMANISER SIMPLE MONSTERS ■ STERLING MX5 AND MX8 STUDIO MONITORS ■ FLARES PRO EARPHONES ■ ACCUSOUND IX3 AND MX4 BALANCED CABLES

## KROTOS REFORMER, REFORMER PRO, DEHUMANISER II, DEHUMANISER SIMPLE MONSTERS



Krotos Reformer Pro and its free spin-off, Reformer.

As an engineer who works mostly in music, voice and live broadcasts, sound design and Foley are only occasionally part of my workload, so I hope I'm not coming off like an impressionable newbie in my enthusiastic admiration of this group of software tools from Krotos. The software is intended for monster creation, but is applicable to many, many more uses.

Krotos' Reformer, Reformer Pro, Dehumaniser II and Dehumaniser Simple Monsters all use different means of manipulation, control and complexity, but they share many traits. Each works as a plug-in within your DAW (offering convenience over a standalone program), is entirely automatable, and functions in real time (albeit with a bit of latency). These factors will all prove to be important as we dig down.

### KROTOS REFORMER

Reformer is by far the simplest and most limited of the group, but it is also the easiest to use and get results very quickly. Paired up with a Krotos sample library (Reformer comes free with only the Krotos Black Panther library, but the company has numer-

ous offerings, some from BOOM and SoundBits as well), any input can feed the patch, whether it be your live voice or a pre-recorded track. You can use input sounds similar to your desired outcome, or use a sound that is wildly different and even inappropriate. Reformer senses the amplitude and frequency to trigger its sounds, but you can choose to actually hear your input (or not) with the Dry/Wet control. The only other control is playback speed, which can be automated to bring more "realism."

Even without speed/pitch automation, the results were wildly successful. Using a live mic, I could easily mimic a black panther, and even with my somewhat silly attempts at being a scary cat, I was hearing a large, ferocious beast come out of the speakers. The tracking is surprisingly nimble, morphing through a wide range of responses as it follows your voice/input. Sure there's some latency, but I could easily follow the video action and time my voicing to the picture.

Reformer is being offered free for now, although you'll need to load it with some sound libraries to be effective. A huge range of libraries is of-

fered (from animals and electronic to Foley) across a wide range of prices.

Compatible with 32- and 64-bit systems, AAX/AU/VST, iLok account required, sample rates from 44.1 to 192 kHz.

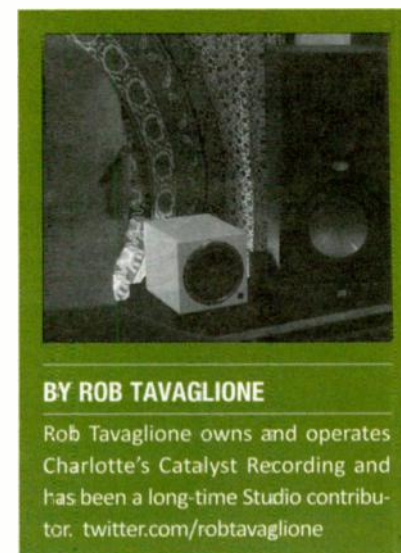
### Krotos Reformer

[www.krotosaudio.com/products/reformer](http://www.krotosaudio.com/products/reformer)

### KROTOS REFORMER PRO

Reformer Pro takes the concept of Reformer and multiplies it by four, plus some extras. Indeed, four different sample sets can be triggered by a single input, with controls for speed, volume and slow/fast reaction. There's a master Wet/Dry to blend your input as desired, as well as a dynamics section and master volume. The GUI visualizes what's going on with a quadrant grid, and this blending of four sounds is automatable with X- and Y-axis values.

There's a Transient Engine that allows precise control of blending specific sounds that occur only at the initial hit of a trigger event, to give sounds more impact and power. There's also a Dynamic Input section that enables specific behaviors and



BY ROB TAVAGLIONE

Rob Tavaglione owns and operates Charlotte's Catalyst Recording and has been a long-time Studio contributor. [twitter.com/robtavaglione](https://twitter.com/robtavaglione)

tuning of response sensitivities, which is easily automated, and opens the door to extreme customization, especially for continuous sounds.

Getting a mix between your four sounds is easy and sounds fantastic, so triggering live with your voice is quite possible. But the real fun lies in recording voice and then automating the parameters—not only using mutes and volume rides for dynamic blends, but also changing pitches, adding transient sounds and tweaking the Dynamic Input controls to truly animate your results.

Reformer Pro is definitely well suited for the creation of monsters and creatures, but it can excel as a platform for a wide range of Foley and sound effects, too. Reformer Pro comes with four libraries: Black Leopard, Fruit Squish, Leather and Electronic.

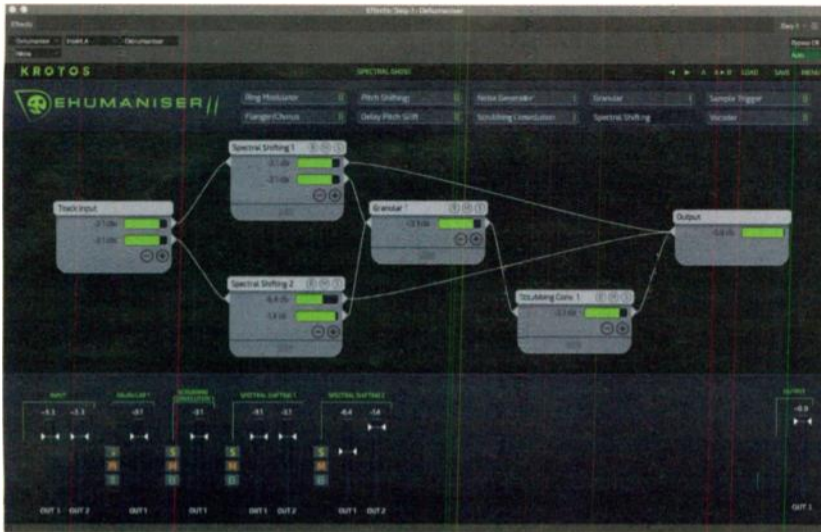
\$399 in VST/AU/AAX, iLok account required, includes the Krotos Bundle for free (3.8 GB of sounds, normally priced at \$449).

### Krotos Reformer Pro

[www.krotosaudio.com/products/reformer-pro/](http://www.krotosaudio.com/products/reformer-pro/)

### KROTOS DEHUMANISER 2

This is where things get complicated, but also where limitations cease to be a factor. Dehumanizer 2 takes a modular approach to sound creation, with a series of modules that can be placed in complicated arrangements, using virtual cables to interconnect. Modules have five outputs each, as well as gating and EQ, and include the basic input and input type, as well as ring modulator, pitch shifter, noise generator, sample trigger (where you add your own sample, control its varispeed and reverse), flange/chorus, delay pitch shift (loops the audio and introduces a pitch shift with each repeat) vocoder, granular (breaks the audio into grains and allows stuttery, fragmented and pitch-shifted results), scrubbing convolution (allows amplitude to control the sample's playback position) and spectral shifting (allows amplitude to control pitch, in bizarre ways loaded with



In Dehumaniser II, modules can be arranged as needed, but won't create a feedback loop.

anomalies). I found that last trio of modules to be where the unusual and unexpected secrets lie, and their results could be breathtaking, with dramatic effects and response well beyond the natural or organic.

You can arrange these modules as you see fit, constructing both parallel paths and serial paths, without fear of creating a feedback loop, as Dehumanizer 2 won't allow such a faulty connection. You can blend your input sound to taste, in particular at each individual module used, allowing some really intriguing results and combinations. There's also a master Wet/Dry, master limiter and a totally cool stereo-spread control that couples nicely with some of those funkier modules, once again offering otherworldly results.

Using your own voice as a live input to trigger one of Dehumanizer's 100-plus presets is a blast and also a very time-effective activity, as even though super-deep complexity is offered here, once a sound has been selected, the artistic use of that sound is effortless and really quite fun. In fact, parameter sets can be stored as "drawers" and quickly selected/copied to a new module—a huge time-saver. The amount of expressiveness is ridiculous; using granularity, adjusting the sensitivity of a module to amplitude or pitch and setting sensitivity to peak or average input levels allows true artistry. As you've guessed, Dehumanizer 2 is already widely used in film, especially in sci-fi, action and horror genres.

\$399 in VST/AU/AAX, Mac or Windows, iLok account required, upgrade from Dehumanizer for \$180.

Krotos Dehumaniser 2  
www.krotosaudio.com/products/dehumaniser2

**KROTOS DEHUMANISER SIMPLE MONSTERS**

As deep and fun as Dehumanizer 2 is, Dehumanizer Simple Monsters is even more fun with its brilliant approach to monster and creature sound creation. It starts with the core

sound of any given patch, which has a number of rather unusual controls. Size, Fury, Age, Character and Wildness allow variation in output that varies rather differently based on the specific sound selected, and they are

all quite interactive. DSM appears to introduce noise, randomness and pitch changes to create what truly sounds like alien wildness, or creature fury, or mutant age ... or at least what I imagine such things to sound like.

Designed to be easier to use than Dehumanizer 2, the plug-in's sliders allow quick intuitive control of parameters, even for the non-technical user. We technical types will revel in the dual X/Y grids provided for automated control, which can be assigned parameters to open up a world of complex behaviors and results.

I would have been satisfied with the amount of control and flexibility here, but Krotos adds a sample player to each patch that sends the results into the realm of the incredible. The provided sample patch can be replaced with your own, but either way, that sample can be played back with scrubbing convolution (the

same module used in DH2). You can change the response envelope by moving nodes on the graph, allowing amplitude to control sample playback position.

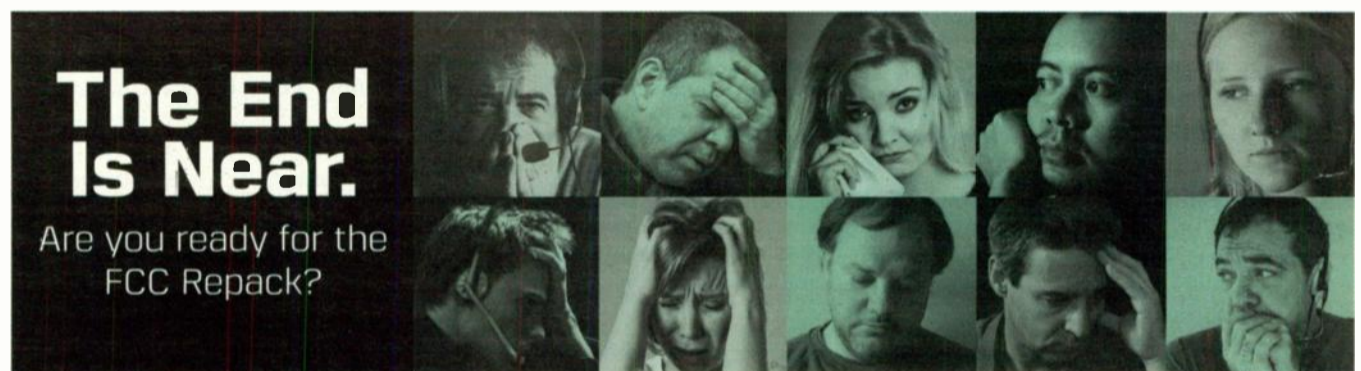
Do not underestimate the importance of this feature, as it enables a degree of animation and lifelike behavior (well, bizarrely lifelike, at least) that would otherwise be unobtainable. Simple Monsters' dynamism and responsiveness will delight voice actors and give them plenty of fodder. Once you hear such deft manipulation of audio, you'll recognize what is surely DSM processing in a slew of modern films; yes, this is how filmmakers achieve such impressive monster, creature and alien sounds.

\$99, upgrade from Dehumanizer Lite for \$40.

Krotos Dehumaniser Simple Monsters  
www.krotosaudio.com/products/simple-monsters



Dehumanizer Simple Monsters offers controls like Size, Fury, Age, Character and Wildness.



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## STERLING MX5 AND MX8 STUDIO MONITORS

A new series of affordable two-way nearfield monitors is not newsworthy, nor are great sounding monitors for reasonable prices—but monitors that cost this little and sound this good? Now *that* is newsworthy. Sterling Audio, a division of Guitar Center, has brought its MX line to market, which includes three models with either 3", 5" or 7" woofers. I've reviewed the two largest models of the line here.

The MX 5s and 8s feature a 1" silk dome tweeter with neodymium magnet, a four-layer voice coil on the woofer, bi-amplified Class A/B amplification (a total of 70 and 125 watts, respectively), rear ports, a WaveGuidance VH tweeter waveguide (that allows wide dispersion both horizontally and vertically), XLR/TRS/RCA inputs, a non-stepped level control, a high-frequency control (10 kHz at +/-2 dB)

and a low-frequency control (75 Hz at +/-3 dB).

I tried out the MX5s first and was surprised at just how "complete" they sounded. At reasonable 85 dB-ish levels, dynamics were open, bass reached low enough, low-mids were only mildly scooped, there were no nasal bumps, no empty notches. The top was just a little edgy but nice. I turned them up a bit and found their max output (about 98 dB at the mix position about 5 feet out) displayed no rattles or odd resonance; dynamics got noticeably compressed and the upper-mids got a little nasty. The sweet spot was plenty wide, rather "tall," too, and they threw out to nearfield distances, if not quite reaching the mid-field.

With the bass EQ in the +2 dB position engaged, I liked the balance much more. That top end seemed plenty smooth now, and the bass extension, as well as its uniformity and definition, were downright excellent for a mere 5" monitor. Just for fun, I tried the MX5s with both EQ points, high and low, at the -2 dB position and found that slightly beautifying mid-dip at around 350 Hz now gone and the overall sound to be quite flat—more of a reference balance, if not a particularly musical one.

Rather impressed with the 5s, it was time to try the MX 8s, which share just about every feature of the 5s except for a larger woofer and a slightly lower crossover point (3 kHz for the 5s; 2 kHz for the 8s). Sure enough, the 8s reached a little lower in their response, although the 5s actually seemed

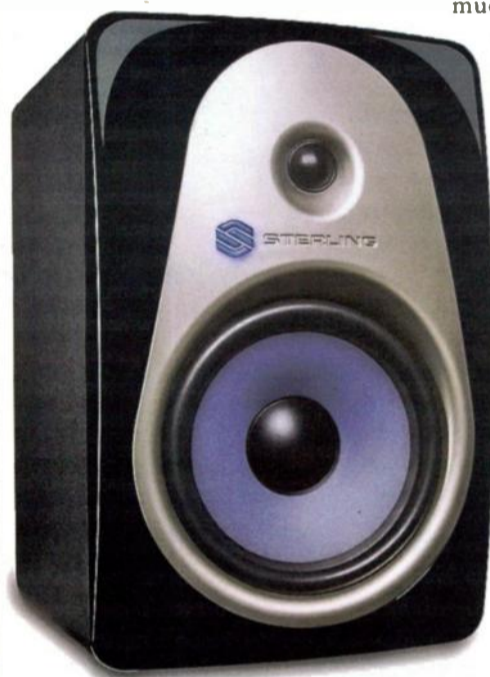
to have sweeter low-mids! High-mids sounded a little different, too—a little forward and more forceful with the 8s. I cranked them up only to find them quite like the 5s: slightly restricted dynamics at medium volumes, a little scratchy at higher volumes and favoring that +2 bass EQ to smooth them out a little.

At this point, I decided to swap out my usual 4' XLR cables for some 6' Accusound cables that I've also been reviewing and found some interesting results. The slight high-mid overemphasis and the touch of hollowness in the low-mids that made the 8s seem harsh at high volumes cleared right up with the Accusound cables! The 8s now had that same musicality and complete-ness that the 5s had, but with a slightly bigger and more forceful sound.

I checked to make sure I was not mistaken and indeed, the MX5s are \$129 each (online direct) and the MX8s are \$179 each. That makes them low-priced in a crowded field of low-price competitors from the likes of Adam, JBL, KRK, M Audio, Mackie, Yamaha and others. With this in mind, I sauntered down to the local Guitar Center, plugged my thumb drive into their iMac and ran through all of the above manufacturers at both 8" and 5" models. Long story short, the Sterlings had the best top end except for the Adams (and their sweet ribbon tweets), the most balanced bottom of all except for the KRKs, volume and dynamics right there with the pack, and the best "performance-per-dollar ratio" of the entire group, by a wide margin.



The MX8 includes XLR, TRS and RCA inputs, as well as high- and low-frequency controls.



Sterling Audio is a house brand of Guitar Center, with products like this MX8 studio monitor.

The MX5 and 8 monitors do not have advanced features like networking, room analysis or software control; they don't even have peak indicators, output limiters (as far as I can tell) or a midrange control (desktop or wall-mount mid-dips are common these days). They don't have common consumer features like Bluetooth, USB inputs or EQ curve presets. The MX 5s and 8s do, however, have top-of-class performance among budget monitors, just enough flexibility of EQ to suit different tastes/rooms, and a price that is a new standard in low. Now there's no excuse to not have a second (or third) set of monitors for comparisons, or a nice set in the B room, or your first pair of good and loud rock 'n' roll monitors for the budding bedroom enthusiast.

Guitar Center  
www.guitarcenter.com

## FLARES PRO EARPHONES

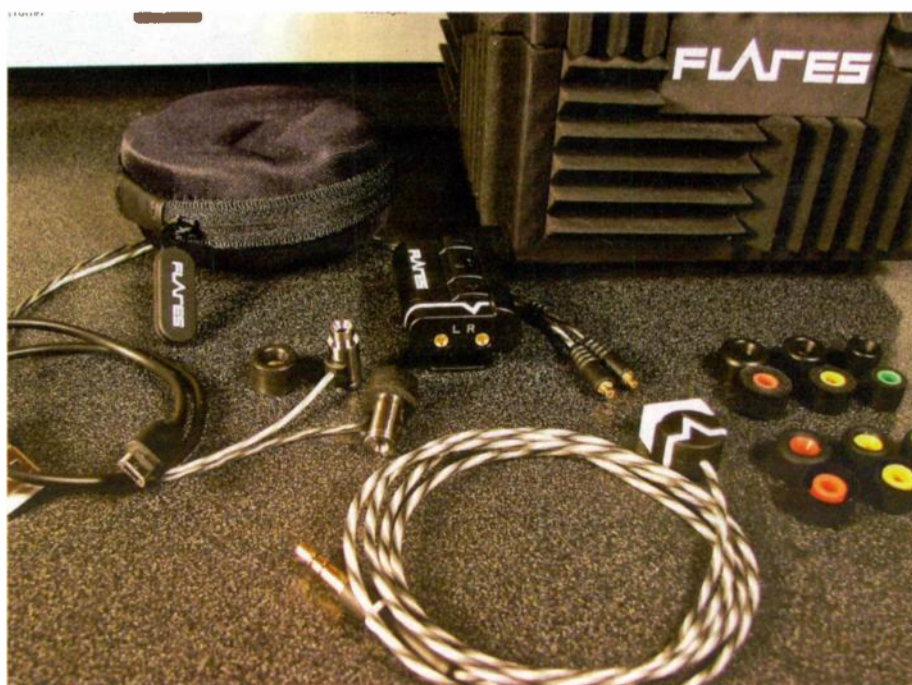
I'm an audio engineer—have been for 30 years now—but unlike many fellow engineers, I have a tolerance for audiophiles and their gear. I'm not trying to cause trouble here, or engage a pointless debate; let's just say that I believe there is some audiophile gear that can excel in our professional world.

I recently reviewed some post-modern earplugs from British manufacturer Flare that have continued to impress, so I brought an open mind when I learned of their Flares Pro earphones and saw their somewhat audiophile-centric marketing. But an enthusiastic assessment from Tony Visconti, as well as a number of forward-thinking features, got my attention.

The earphone body is made from titanium, with 5.5mm beryllium drivers. Flares Pro includes three sets of ear fittings (in three sizes each) spanning the durability-comfort-performance spectrum: everyday (silicone, hardest, most durable, least comfort), audiophile (soft rubber, softest, least durable, highest performance) and universal (water-based foam, good durability and performance, best fit).

The reinforced, oxygen-free, polyaramid cable is not only unusually strong, but it allows circular wrapping rather well. Each earphone's short cable is terminated in a gold MMCX connector

(continued on page 35)



A complete Flares Pro Earphone kit



## ACCUSOUND IX3 AND MX4 BALANCED CABLES

Here we are wading in controversial waters once again, as the audibility of differences in premium cables is the source of much debate. Neither anecdotal accounts nor precise bench tests can settle such questions once and for all, so the best I can do here is tell you what I heard and let you be the judge.

I approached this review with an open mind and a discerning ear; I ignored economics until tests were completed, and I encourage you to do the same.

Bill Benoit from Accusound came over to my Catalyst Recording studio for a demo of the company's products. Accusound makes a number of cables in a number of configurations; we first tackled the IX3 line cable. This oxygen-free, silver-soldered, polyethylene-jacketed, double-braid, shielded cable has a clear jacket and is intended not as a mic cable per se, but as an interconnect cable. We listened to a few mixes through my normal interconnect—some Canare L6ES quad-mic cable with Neutrik ends in a short 6' length—directly connecting a pair of nearfield monitors to my monitor controller. We then used a pair of IX3s in the same exact configuration, with the same mixes, and could distinctly tell a difference. The biggest improvement was in imaging, as certain elements like percussion pops and lively synth patches gained precise placement that seemed to give them almost tangible form. My wide stereo lead vocals were quite wide, with the mono center seeming particularly centered and the fringes alive with my applied texture and ear-candy processing.

Bass response grew a little deeper, but only by a touch. High-end response didn't extend any higher, so much as gain a little more pureness and smoothness. Dynamics seemed slightly more open and unrestrained, but only very slightly. Could any engineer hear what I heard? Probably. Would said engineer deem it important? Maybe yes, maybe no. Could a consumer hear it? Consciously? Only some, subconsciously maybe all. Would they find it important? Probably not.

Next, I tried connecting up my mains with all IX3 cables—six in total: L and R from controller to room EQ, two from EQ to subwoofer, two from subwoofer to tops. Did I hear a difference? Yes. As pronounced as with the nearfields? Not even close. Was the difference similar? Yes—there were slight improvements in all areas, but not as pronounced. Is the differ-



Accusound's IX3 cable (above and right) and MX4 cable (right)

ence noteworthy? To me, yes, and to other scrutinizing types, yes, but to less discerning types, probably not.

Next, for a couple of months, I used a pair of Accusound MX4 mic cables as my main pair for routine day-to-day vocals/overdubs and for my drum overheads in band tracking sessions. These cables are high-strand-count, oxygen-free, silver-soldered, quad-conductor, with polyethylene insulator and copper-braid shielding. The cables definitely sounded great, up to par with my usual Mogami quad mic cables, but I did not notice any differences in noise, clarity or bandwidth.

Then I set up my matched pair of Roswell Delphos LDC mics (via a pair of AMS Neve preamps) as ORTF overheads and recorded my awkward drumming twice, switching out the mic cables only. The Accusound cables definitely had more high-end response, so they seemed a little louder than the Mogamis and created a slightly different-shaped



soundstage. The Accusound imaging seemed slightly wider (as if the width reached 180 degrees, not 160 degrees), and was just a little more detailed in the placements. I continued similar tests with percussion, cation and piano until I was completely sure: the Accusound cables offered a little more high-end, a little more detail and a little more imaging. The significance of this difference was not unlike my IX3 tests; compared to industry-standard cables, the Accusound cables offered slightly improved performance that is discernible to trained ears, probably only subliminally heard by intent listeners, and likely unnoticeable by casual consumers and those suffering from hearing loss.

Everybody wants better signal from better cables, but ultimately this

all had to boil down to economics. An IX3 cable terminated in XLRs in a 6' length will cost you \$90 direct from Accusound (15' for \$115). An MX4 mic cable will run you \$90 for a 15', \$110 for a 25'. Pricewise, this finds Accusound above industry standards, almost up there with expensive entities like Monster, but well below the costs of silver-conductor cables like Zaolla. Are such costs worth it for the increased fidelity? That, I'm afraid, I cannot answer, as it has as much to do with your clientele, prestige, your goals and your budget as it does audio fidelity. I can definitely recommend the Accusound cables for design, build quality and performance, but I'll have to leave the determination of their value up to you.

Accusound Cable Company

[www.accusoundcablecompany.com](http://www.accusoundcablecompany.com)



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## Future Names 2018 InfoComm Best of Show Award Winners in Audio

LAS VEGAS, NV—Future's Pro Audio Group—comprising *Pro Sound News* and *Mix* magazines—has announced the winners of its Best of Show Awards for InfoComm 2018. Future's Best of Show Awards are judged by a panel of engineers and industry experts from submitted nominations. Criteria include ease of installation and use/maintenance, performance, relevance, value/ROI, network friendliness, versatility and reliability.

The following is a rundown (in alphabetical order by manufacturer) of the Pro Audio Group's winning products, with promotional text provided by the manufacturers themselves.

### Allen & Heath SQ-7 Digital Mixer

SQ-7 is the 33-fader flagship console in the SQ series, powered by Allen & Heath's 96 kHz XCVI FPGA engine. Created for AV, corporate events, live productions and houses of worship, SQ-7 offers high-resolution audio quality and a latency of <0.7 ms. The console features 32 onboard mic preamps, plus eight stereo FX engines with dedicated stereo return channels and access to the RackExtra FX library. SQ is designed for in-ear monitor setups, providing 12 stereo mixes (configurable as groups or auxes), and also sports automatic mic mixing.



### Audio-Technica U.S. 3000 Series UHF Wireless Systems

The 3000 Series system offers the same RF audio performance as previous generations, but with improvements. The true diversity 3000 Series systems have an operating range of 300 feet (100 meters) and are available in two frequency bands—DE2 (470–530 MHz) and EE1 (530–590 MHz)—that provide a 60 MHz tuning range—more than twice that offered by the previous 3000 Series models. Frequencies can be scanned and selected on the receiver and then synced with transmitters via IR sync functionality. In addition, the transmitters have a multifunction button that can be set to switch to a backup frequency in the event of unexpected interference.



### Avid VENUE | S6L

Avid VENUE | S6L is a fully modular family of live sound mixing systems intended for front of house, monitor, broadcast and theater. Avid recently expanded the Avid VENUE | S6L family with three new control surfaces, a new engine and two new I/O racks, all on a unified platform and with 100 percent software, hardware and show file compatibility across all system components. A choice of five surfaces—including the new S6L-48D, S6L-24C and S6L-16C—offer from 16 to 48 faders and can be paired with a choice of three engines, including the new E6L-112, and can additionally be connected to any combination of S6L's four I/O rack options, including the new Stage 32 and Local 16.



### Clair Brothers 10SPOT Loudspeaker

Clair Brothers 10SPOT loudspeaker has been designed as a hybrid speaker that combines Clair Curved Array Technology together with the One Series coaxial horn technology, resulting in a unique form factor loudspeaker that occupies little visual space while covering listening areas. Typical applications include distributed systems, under balcony and delay fill, particularly with live entertainment sources. The frequency response



is 90 Hz – 20,000 Hz, allowing for use speech and music reproduction.

### Clear-Com FreeSpeak II IP Transceiver

The FreeSpeak II IP Transceiver (IPT) allows FreeSpeak II wireless intercom belt-pack users to leverage existing AES67-compatible IP networks to distribute their wireless intercom. Two or more 1.9 GHz FreeSpeak II IP Transceivers can form a wireless communication network that is limited only by the user's LAN. Within the LAN, one or more zones of wireless connections can be created with strategically placed IPTs. FreeSpeak II wireless belt-packs are then handed off from IPT to IPT. Each IPT can support up to 10 FSII 1.9 GHz belt-packs; when used in an Eclipse HX matrix system via the integrated E-IPA-HX interface card, as many as 50 1.9 GHz belt-packs can be used at the same time, and up to 64 transceivers can be supported on the one E-IPA-HX card.



### CloviTek CloviFi Wi-Fi HD Audio Transmitter

CloviFi is a Wi-Fi audio transmitter for private listening. It transmits audio from any audio source (e.g., TV) to any mobile device (smartphone, tablet, etc.) using Wi-Fi technology. CloviFi offers multiple ways to connect to audio sources through various inputs—Bluetooth or Wi-Fi connection through an existing network, and Direct Access Point Wireless connection. CloviFi is intended not only for home consumers but also government agencies, private and public companies within the food industry and sports segment and, to a lesser degree, adjacent market segments such as healthcare, industrial, legal court systems, translation, A/V integration, and in-group living settings such as assisted or senior living companies.



### Crestron Avia 12x8 Digital Signal Processor with Dante

The Avia 12x8 Digital Signal Processor with Dante, USB Audio, AEC and Audio Conferencing (DSP-1283) is intended

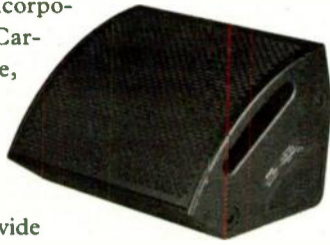


for use in providing sound in any meeting space, performance venue, courtroom, sports facility or house of worship. It integrates with other studio devices using Dante audio networking, which in turn provides an additional 32 mono inputs and 32 mono outputs. Multiple DSP-1283 units can be linked via Dante to expand the number of inputs and outputs in the system. Dante also provides a digital multichannel audio bridge to a Crestron DigitalMedia system via Dante-enabled DM switcher I/O blades. Dante networking enables plug-and-play integration with other Dante-enabled mixers, switchers, sources, amplifiers and computers. The DSP-1283 includes a USB Audio port, which can be connected to a computer, codec or other USB Audio host.



## Fulcrum Acoustic FW15 Cardioid Stage Monitor

The FW15 15-inch coaxial stage monitor incorporates Fulcrum Acoustic's patented Passive Cardioid Technology, which enables tour-grade, low-profile FW15 stage monitors to attenuate rear low-frequency radiation, which interferes with the audience, stage microphones and front fills. The stage monitor sports a coaxial transducer and 75° x 75° horn to provide coverage for monitoring applications, and its large-format 3" compression driver and 3.5" voice coil 15" woofer ensure headroom. The enclosure includes 40° and 55° angles for downstage and upstage distances, respectively, as well as double-grille construction and four input options positioned close to the stage to reduce the visual impact of connected cables.



## Kramer KN-DSP100 Network Powered Server with DSP

According to Kramer, the KN-DSP100 is the industry's first DSP over IP solution, enabling both routing and processing of audio signals. The KN-DSP100 is based on a Kramer Network server powered by a sixth generation Intel Xeon processor. It is fully compatible with any Dante audio signal and offers Waves Audio processing capabilities. As an IT-oriented solution, KN-DSP100 integrates with standard IT infrastructures and enables simultaneous processing of 64 input channels and distribution of over 1,000 outputs. It provides auto-detection of all Kramer devices and their functionality, and can be integrated into existing Dante networks.



## Optocore Festival Box

Optocore Festival Box is intended for music festivals where different bands require different consoles. Up until now, all cables between stage and FOH had to run separately because each console used a different protocol, resulting in a huge amount of cabling. With Festival Box, there needs to be only a single



fiber cable between the stage and front of house. Festival Box is available in two versions: Petit and Grand; the former features six SFP (Small Form Pluggable) slots, one main duplex fiber connection and one auxiliary fiber port, while the latter features 12 SFP slots, two main duplex fiber connections and two auxiliary fiber ports. Each SFP slot can be fitted to any standard SFP transceiver, which allows different cables and different protocols to be connected, such as fiber Optocore, fiber or coax MADI, fiber or RJ45 1G Ethernet and fiber third-party proprietary protocols.

## Shure Designer 3.1

Last year Shure introduced the Designer System Configuration Software, which enables integrators, designers and sales teams to create projects with multiple "virtual" microphones positioned over an imported room layout diagram. Now Designer 3.1 provides system integrators, designers and sales staff with improved workflow efficiency to configure multiple Shure products both online and offline. The new edition offers users a single software tool to design and commission system installations, and enhance performance and usability of Shure Networked Systems products. It supports Shure's expanded product portfolio, including Microflex Advance MXA910 ceiling array and MXA310 table array microphones, P300 IntelliMix audio conferencing processor and the ANIUSB-Matrix USB audio network interface.



## Yamaha DZR/DXS-XLF Series Powered Loudspeakers and Subwoofers

Yamaha has added next-generation lines of powered loudspeakers and subwoofers to its pro audio lineup. The DZR line of powered speakers, along with the DXS-XLF powered subwoofers, use high-performance components and the latest DSP. The digital processing in all powered models, both speakers and subwoofers, is all done at 96 kHz; this, combined with newly developed Advanced FIR-X tuning technology, is said to minimize latency and phase distortion. These "D" models incorporate smart system integration with Yamaha Consoles and other Dante devices via a 2-in/2-out I/O configuration.



## Flares

(continued from page 32)

that can connect to two provided choices: either a connection block that's attached to a long 3' stereo cable (which is terminated with a 1/8" gold stereo mini-plug) or a small wireless Bluetooth receiver. This receiver has a rechargeable battery inside (chargeable with the supplied micro-USB connector/cable) and volume control only.

As a veteran of in-ear monitoring (both in studio and on stage), I know that the paramount factor is good fit, and I am a challenge in this way. My right ear is perfect, my left ear canal is a little smaller and at a greater angle. Hard Apple earbuds, heavy IEMs and lousy foam fittings do not work well for me. The Flares were a good fit, however, as their small size, light weight and tips allowed me the right angle and insertion for even stereo imaging and

proper bass response. I chose the audiophile tips, naturally, but the other two types are good to have around and worthy additions to the kit. (All of my performance observations detailed here are based on the audiophile tips and their superior response.) The phones do get dislodged a little easier than I'd like and are not nearly as snug as custom molds for onstage use. Unfortunately, that sturdy cable is quite microphonic, and nearly any movement results in distracting thuds and thumps.

Crummy earbuds have all 5k these days, while mid-priced ones are all 200 Hz and expensive ones load you up on excessive 80 Hz (in very general terms), but these Flares had a different balance and abundance of bass. The bottom end was deep but not thuddy; there's warmth in the low-mids (if perhaps slightly scooped out), with better-than-most bass note differentiation. The mids were a little sculpted, but not as deeply gouged out as many ear monitors are. The

top was extended, mostly pleasant, maybe a little sharp at 10 kHz and revealed great detail.

I found the Flares to be useful as a second or third mix reference point, although they are not flat enough as a singular mixing solution. They did, however, offer a certain flexibility and relevance based on their Bluetooth feature. Sometimes we have two separate worlds of mix checking: our pro studio environment and the consumer world (our cars, home stereos and office desktops), with very little interplay between them. That's where I found the Flares so useful—by bridging that gap. That is, I could listen to my mixes and other's mixes I'm comparing/referencing to on my mobile devices (and computers) with Bluetooth or in my studio, all through different converters but with the same aural lens: the Flares. These earphones have proven themselves to be up to the task of accuracy in my pro world and the convenience/durability needs of my consumer world.

Neither my Apple buds nor my pro IEMs have been able to cross over between worlds like that.

The Flares Pro kit (ear monitors, cabling, Bluetooth receiver, fittings, carrying case) sells direct for \$464, placing them at a midpoint in the range of in-ear monitors/earphones. These may not be ideal for onstage use by performers, where custom molds, sweat-resistance, durability and high SPL are primary concerns (along with high prices). These Pros are, however, suitable as in-studio personal monitors for performers where comfort, ease of use and non-fatiguing response are paramount. These Pros would really excel as personal monitors for engineers, especially mix ones, where jumping between consumer and professional worlds with a certain degree of confidence is very useful. Sometimes audiophile needs do overlap pro needs, even if we tend to use very different language and perspective.

Flare Audio  
www.flareaudio.com

## Tascam Updates DR Series Recorders

The v2.0 firmware update for Tascam's DR series of miniature digital recorders adds functionality including new recording and monitoring capabilities, real-time level meters during recording, an additional level setting in dual record mode, and the inclusion of MP3 as a recording format. The update, available free at the company's website, works with the DR-10X (with integrated XLR connector), the DR-10SG (with integrated shotgun mic) and the DR-10L/LW (with lavalier mic).



## Audionamix IDC Plug-In

Available in VST, AU, AAX Native and AudioSuite formats for both Mac and Windows systems, the IDC (Instant Dialogue Cleaner) plug-in offers effective dialogue cleaning technology through an intuitive interface, compatible with many workflows. The real-time solution uses an integrated DNN artificial intelligence that automatically detects and separates speech regardless of the surrounding content, according to Audionamix. Unlike traditional denoisers that learn and remove noise, IDC works by separating and preserving speech, regardless of the interference. The software is intended to address complex variable noise interference including weather, traffic noise, music and room ambience.



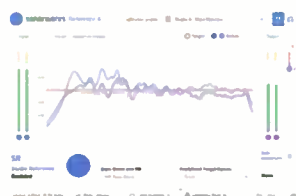
## Sound Devices MixPre-3M, MixPre-6M

The newest members of the company's MixPre M-Series for music creators and performers, the portable MixPre-3M and MixPre-6M multitrack audio recorders can record up to 12 tracks at up to 96 kHz/24-bit resolution. The MixPre-3M records up to three tracks at once and features three Kashmir mic preamps with analog limiters. Its USB audio interface supports five inputs and two outputs. The MixPre-6M records up to six tracks at once, includes four Kashmir mic preamps with analog limiters, and features an 8-in/4-out USB audio interface. Connections are via the XLR/TRS inputs or the aux-in connector. A digital patchbay enables any of the physical inputs, including USB, to be routed to any track.



## Sonarworks Updates Reference 4

Sonarworks is including a new standardization technology, Sonarworks SR, with the latest update of its Reference 4 sound calibration software, which is said to deliver the same studio reference sound on speakers and headphones. By using patented, research-driven digital technologies, Sonarworks SR sets the frequency response to be like completely neutral speakers in a treated room. The calibration of headphones is accomplished using a calibration profile pre-measured in Sonarworks' lab, while the speaker calibration profile is produced by a user on-the-spot using Sonarworks measurement software. The Sonarworks SR standard comprises sound measurement technology and signal processing. The reputed result is +/-0.9 dB among different locations, playback devices and users.



## Harrison AVA De-Esser Plug-In

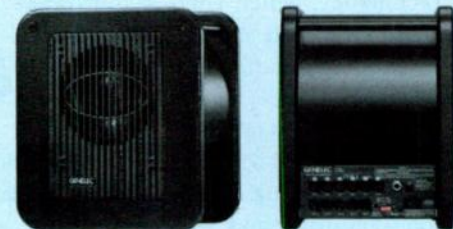
Intended for use in post and film facilities, the AVA De-Esser from Harrison Consoles and Plugivity implements Harrison's fourth-generation algorithm that is tuned to detect and eliminate harsh sibilance while ignoring other fricatives. It includes a Band Solos and Auto-Solo feature to help users dial in the sibilant frequency range. The plug-in is capable of up to 12 dB reduction in sibilance, and adjustable threshold and depth allow fine control over the processor's onset and strength. The plug-in's interface sports six control dimensions accessible in the main graph, and its gain reduction meter appears on the Pro Tools (AAX) and Studio One (VST3)



## firstlook

### Genelec 7050C Subwoofer

The 7050C from Genelec offers an extended low-frequency response and lower distortion than its long-lived predecessor, the 7050B. The subwoofer sports a newly redesigned LSE enclosure, a reported 3 dB increase in SPL capability, plus a bypassable professional bass



management system and universal switched-mode power supply. The 7050C provides five input and output channels with 85 Hz lowpass/highpass filters, plus a discrete 120 Hz LFE signal input with selectable +10 dB boost. It contains a single eight-inch, magnetically shielded low frequency driver, housed in a Genelec LSE spiral enclosure. Adjustable settings include phase and low-frequency rolloff, the activation of the +10 dB LFE level, and the sensitivity of the Intelligent Signal Sensing (ISS) power-saving mode.

mixer strip. Reportedly offering zero latency, the plug-in is applicable for live use as well.

## Elysia Skulpter 500 Preamp

The Skulpter 500 preamp from studio processor manufacturer Elysia features gain stages based on single resistors controlling a fully-discrete Class-A amplifier. A pair of variable saturation/filters and an intelligent one-knob compressor are available to help provide additional coloration. The Skulpter 500 provides a balanced DI input with headroom of up to +19 dBu. Its gain range reportedly starts at 3 dB, extending up to 65 dB; as a result, the unit does not include a pad circuit. The preamp offers a DC-coupled input stage without a coupling capacitor influencing the original signal. Built in Germany, the unit is constructed with gold-plated PCBs, a 4mm aluminum front panel and solid aluminum knobs.



## Avid NEXIS E5 NL Nearline Storage

The high-density on-premises NEXIS E5 NL nearline storage product manages media across various online, nearline and archive storage resources and integrates with Avid media applications, services and workflows. Avid NEXIS E5 NL can be accessed through MediaCentral Cloud



UX or Media Composer and also integrates with MediaCentral Production Management, MediaCentral Asset Management and MediaCentral Editorial Management to drive collaboration, including features such as project and bin sharing. Extending the Avid NEXIS FS (file system) to a secondary storage tier allows users to search for, find and import media, enabling them to locate content distributed throughout their operations. The unit offers scalability from 480 TB of storage to more than 7 PB.

## Ultimate Ears IPX Connection System

Ultimate Ears has put its line of professional custom in-ear monitors through a massive revamp and has upgraded all of its products with the new IPX Connection System. UE Live, the company's new flagship in-ear monitor, sports a hybrid acoustic architecture, along with six balanced armatures, one dynamic driver and the True Tone Plus, an upgraded version of Ultimate Ears' proprietary True Tone Drivers. Each driver is designed to handle a specific frequency range. The IPX Connection System, co-created with estron a/s, provides a lightweight, IP67-certified sweatproof connection between cable and connector, allowing for easy swapping between different cable types. The IPX Connection System can be plugged into any audio interface with a 1/8" (3.5mm) headphone jack.



## Waves DSPRO StageGrid 4000

Waves Audio is now the worldwide distributor for the DSPRO StageGrid 4000, a Waves SoundGrid-compatible stagebox by Porto Alegre, Brazil-based DSPRO. The DSPRO StageGrid 4000 offers 32 mic/line ins, 16 analog outs and AES/EBU ins/outs, all digitally controlled. The unit offers a sample rate of 44.1–96 kHz, as well as two headphone outs with individual volume controls; word clock input and output; BNC connectors; a SoundGrid Ethernet connection; and redundant AC power supply.



## Alteros GTX L.A.W.N.

Alteros has unveiled two handheld transmitters—the GTX24-HHP and GTX24-HHB—for its GTX Series L.A.W.N. ultra-wideband wireless microphone system. The GTX Series L.A.W.N. (Local Area Wireless mic Network) is a fully digital 6.5 GHz solution that supports unlimited repeat deployment (studio-to-studio and location-to-location) of 24 simultaneous uncompanied 48 kHz/24-bit audio channels in any indoor or outdoor broadcast or performance environment. The GTX24-HHP “performer” version wireless handheld mic is intended for live performance applications and accepts thread-on microphone capsules, allowing the performer to select the preferred microphone sound and performance from various manufacturers. The GTX24-HHB “broadcaster” version, which also incorporates interchangeable microphone capsule mounts, includes additional features such as a dedicated flag mount section and talkback button.



## PWS 4x4 Quad Antenna Distro

Professional Wireless Systems’ new PWS 4x4 Quad Antenna Distro works with the Shure Axient Digital Quadversity wireless microphone system. The distribution unit handles up to four receivers and features 470–616 MHz filtering, bias power control/status LEDs for each input, rotary attenuators and dual power inputs that allow for redundant power. Housed in a 1 RU all-metal chassis with reinforced rack ears, the PWS 4x4 Quad Distro is designed and assembled by hand in Orlando, FL.



## EM Acoustics HALO-A Line Array

Following the same core design as the compact HALO-C line, the HALO Arena large-format line array system has a 14.3” x 40.2” x 24.4” enclosure and weighs 145.2 pounds. The loudspeaker uses a proprietary, patent-pending emulation manifold that sets four 3.4-inch diaphragm, 1.4-inch exit compression drivers into a plane-wave array. The HF section is flanked by a pair of 3.5-inch voice coil, 12-inch neodymium low-frequency transducers. A single HALO-A is said to offer a flat, free-field frequency response from 48 Hz to 19 kHz (+/-3 dB) and a phase response which is +/-20 degrees between 150 Hz and 18 kHz. The dispersion pattern control is maintained down to 250 Hz.



## Bose Professional Expands ControlSpace Line

The new ControlSpace CSP-1248 and CSP-428 commercial sound processors offer I/O and simplified configuration for small- to medium-scale projects. Intended to operate as standalone DSPs in commercial applications, they include balanced analog I/O, RCA inputs, eight GPIs, one GPO, a mute contact, RS-232 serial, Ethernet network (for configuration or wall control) and Bose AmpLink out. The CSP models include Bose-proprietary algorithms, configurable using the control software, like AutoVolume compensation, which continuously adapts zone output level based on the ambient noise of that room (when paired with the new Bose ANC sense microphone accessory) to maintain consistent program material.



## SSL L100 Live Console

The SSL Live L100 live console, intended for use in small- to mid-sized live productions, is built around the same SSL Tempest Audio Engine as the other SSL Live consoles, ensuring showfile compatibility across the range and offering the same I/O options, including SSL SuperAnalogue stageboxes (over MADI or Dante), local analogue and digital I/O, and Blacklight. The compact desk sports a 12+2 fader configuration frame, using the same layer/bank switching and Super-Q technology as SSL’s larger models. Users who require more faders can expand the L100 with SSL’s new Remote Tile, and more screen space can be added via an external touchscreen and the addition of tablet control.



## QSC Premium Business Music Solutions

Aiming to serve foreground and background commercial installations with a single, streamlined portfolio, Premium Business Music Solutions is a unified collection of mixers, wall controllers, multichannel amplifiers, loudspeakers and various installation and management apps for configuration and system management. QSC’s collection is based around MP-M Series zone mixers, MP-MFC wall controllers, MP-A Series zone amplifiers, AcousticDesign Series SUB/SAT loudspeakers and MP Install and MP Manage apps.



## EAW UX Amplifiers

Intended for use in installation and production applications using EAW loudspeakers, the Class D amplifier series from Eastern Acoustic Works consists of two four-channel amplifiers—the UXA4406 and UXA4410—and the eight-channel UXA4810, all of which offer 48 kHz digital signal processing. The four-channel models deliver up to 2,500W (5,000W bridged), while the UXA4810 delivers 1,250 watts per channel (2,500W bridged). Each amplifier channel can be configured to deliver its maximum power into 2, 4 or 8 ohms, nominal loads as well as 25V, 70V and 100V constant voltage (CV) lines. The final component of the UX Series is the UX48 processor, which offers processing for four inputs and eight outputs, utilizing up-to-date A/D conversion and DSP technologies.



▶ firstlook

### Sennheiser, Yamaha Digital 6000 Integration

Yamaha and Sennheiser announced in June that upcoming firmware updates from both companies will integrate the Sennheiser Digital 6000 microphone system into Yamaha CL and QL series consoles. As a result, Sennheiser’s EM 6000 and EM 6000 Dante wireless receivers will be able to be monitored directly from the consoles, allowing engineers to check parameters such as RF performance, link quality, audio level and battery status as well as adjust certain parameters without the need for additional software or screens. Digital 6000 integration is already available for Soundcraft Vi000 consoles, and Sennheiser reports that it is working with other manufacturers to integrate with more desks in the future.

There’s more information on all the products featured at [prosoundnetwork.com/july2018](http://prosoundnetwork.com/july2018).



## Live Sound Pros Acquire UltraSound

BY CLIVE YOUNG

MARTINEZ, CA—On June 1, live sound industry veterans Ralph Mastrangelo and Derek Featherstone acquired UltraSound, longtime tour sound provider for the Grateful Dead and the Dave Matthews Band, among others.

The company will remain headquartered in Martinez, CA, with UltraSound operations director Josh Osmond and CTO Geoff Peters onboard. Speaking to *Pro Sound News*, Featherstone noted, “It’s life as usual for our clients. Nothing has changed, except we’ll have more hands on deck.”

UltraSound’s summer touring lineup is highlighted by Dead & Company, the Dave Matthews Band and Primus. Regional clients include notable Bay Area venues such as the Warfield, the Fox Theater Oakland, the Regency Ballroom and Davies Symphony Hall, among others.

Founded in the late 1970s by “Dr.” Don Pearson and partner Howard Danchik, UltraSound grew to prominence in its early years providing sound for acts like Bob Dylan, The Bangles, Tracy Chapman and



Derek Featherstone (left) and Ralph Mastrangelo have acquired UltraSound, longtime audio provider for the Grateful Dead, the Dave Matthews Band, Primus and others.

others during the 1980s and ’90s, but it is most closely identified with touring juggernaut and audio promulgators the Grateful Dead—a pairing that continues to this day with Dead

& Company’s current tours.

In the spring of 1998, UltraSound merged with fellow Bay Area-based sound company Pro Media, which

(continued on page 45)

## UCLA Recruits Bose Professional

LOS ANGELES, CA—The new Mo Ostin Basketball Center at UCLA offers practice courts, sports-medicine treatment areas and lots more, for a total of 11 individual spaces—all of which feature sound provided by Bose Professional systems.

The men’s and women’s gyms are each covered by a pair of arrays

composed of three Bose RoomMatch loudspeakers topped by a RoomMatch RMS215 subwoofer, powered by a Bose PowerMatch PM8500N networked amplifier and managed by a Bose ControlSpace ESP-800 DSP system.

In the trainer’s rooms, a Bose F1 Model 812 Flexible Array loud-

speaker with F1 subwoofer lets users pump their choice of music into the rooms through 3.5-inch jacks on wall panels. These are set up on the floors in a left-right configuration. Elsewhere, in the smaller sports-therapy rooms, Bose FreeSpace DS 16F loudspeakers are complemented by Bose FreeSpace 3 Series I Acoustimass bass modules.

Additionally, Bose speakers powered by FreeSpace IZA 190-HZ amplifiers are installed in the common conference room and video playback room where players and coaches discuss their training programs and watch recordings of their work.

Kevin Borg, assistant athletic director, Facilities & Project Management, noted that sound is particularly important in the Basketball Center due to the facility’s namesake and benefactor, Mo Ostin, the legendary music-business executive who headed both Warner Bros. Records and Dreamworks’ music division, and who Frank Sinatra tapped in 1960 to run his Reprise label.

“When you have a building named for someone who understands sound like he does, you need the absolute

(continued on page 42)



At InfoComm, Renkus-Heinz showed numerous products, including its new IC-Live X steerable array modules, inside its demo room.

### briefs

#### Castle Hills Church Adds A&H

SAN ANTONIO, TX—In the wake of flooding, Castle Hills Church of San Antonio, Texas, recently updated its audio system with an Allen & Heath dLive S Class digital mixing system at FOH and an ME-1 personal mixing system at monitors, sold by American Music & Sound (americanmusicand-sound.com), the ccnsole company’s U.S. distributor.

#### UNT Expands RedNet Network

DENTON, TX—The College of Music at the University of North Texas recently updated its Focusrite (pro.focusrite.com) RedNet network with a RedNet A16R 16-channel I/O interface; two RedNet PCIeR Cards, employed to extend the network to its Logic Pro DAW and MIDI sequencer software; a pair of RedNet AM2 stereo audio monitoring units; and two D16Rs used as the interface with the video system, for embedding audio for video.

#### Gin Blossoms Bloom Via VIO

SAN DIEGO, CA—The USS *Midway*’s annual Freedom Benefit Concert saw Gin Blossoms play for a packed house, with MixOne Sound providing a dBTechnologies (dbtechnologies.com) P.A. based around Flexsys 10s, VIO L210s and VIO S3118s, as well as LVX XM15s and LVX XM12s for all of the wedges. At front of house, MixOne was able to utilize the new beta Aurora Net software to monitor and control the boxes in real time.

#### Waves Zones Out

BROOKLYN, NY—Zone One, a 250-capacity venue, serves up nine shows and nearly 30 artists a week, playing everything from indie rock to techno to underground hip-hop, all of which are mixed on a Waves (waves.com) eMotion LV1 live mixer.

#### Wix Sticks with QSC on Tour

UNITED KINGDOM—Keyboardist and musical director Paul “Wix” Wickens has toured with Paul McCartney for decades. In recent times, his stage rig has grown to include a QSC TouchMix-30 mixer and K.2 series loudspeakers for recording and monitoring, respectively.



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**SENNHEISER**



On U2's Experience + Innocence tour, the band's main stage (seen here) sits atop a massive monitorworld housing multiple DiGiCo consoles, RF gear, guitar stations and more.

DAVID STREICH

## VITALstats

U2

Clair Global (Lutz, PA)

### FOH Engineer:

Joe O'Herlihy

### Monitor Engineers:

Alastair McMillan; Richard Rainey; CJ Eiriksson

### Senior Systems Engineer:

Jo Ravitch

### Crew Chief/Systems

Engineer:

Joel Merrill

### Stage Engineers:

Niall Slevin; Brandon Schuette; Thomas Birkhead

### Techs:

Pascal Harlaut; Hannes Dander; Ann Butt; Brian Slevin

### FOH Console:

DiGiCo SD7

### Monitor Consoles:

DiGiCo SD7

### House Speakers:

Clair Cohesion CO-12, CO-10, CO-8, CP-218

### Monitor Speakers:

Clair Cohesion CP-118

### Personal Monitors:

Sennheiser 2000 Series

### House Amplifiers:

Lab.gruppen StakRak

### FOH Equipment:

Lexicon 480L, PCM70; Summit DCL-200; Manley VoxBox; Avalon VT-737SP; Eventide H3500; Klark-Teknik DN6000; Yamaha SPX1000

### Monitor Equipment:

Lexicon PCM80; AMS RMX16; Yamaha SPX-1000, SPX-990; Amek 9098; Antelope Isochrone Trinity

### Microphones:

Shure Axient, SM48, SM57, SM58, SM81, SM98, Beta 58, Beta 87, Beta 91, Beta 52, Beta 52a, Beta 58, PG58; AKG 451EB, A51, C-414B; Sennheiser MD-421, MKH-416, MKH50; Audio-Technica AT4050; DPA 4099, 4088; Countryman DI; Radial SW8, ProD8, J48

## Speaking from Experience

BY CLIVE YOUNG

"The end of September, 1978 was my first show with U2," muses Joe O'Herlihy, the band's sound director. We're standing on stage an hour before the Irish rockers are due to go on, but while I'm at Nassau Veterans Memorial Coliseum in Uniondale, NY, for a brief moment, O'Herlihy is back at the Arcadia Ballroom in Cork 40 years ago. "I worked with an Irish guitar player, Rory Gallagher, from '73 to '78; I actually had just finished my stint and decided I was coming home. Then I met U2 about three weeks later, and off I went again! The rest is history."

The ensuing four decades provided much of the subject matter for U2's current arena jaunt, which finishes off a string of tours that are conceptually ambitious even for a band that regularly aims for epic. The 76-show Innocence + Experience world arena tour in 2015 presented a loosely autobiographical show that examined U2's life as "innocent" teens in a band. Then 2017 saw the group return to stadiums for 51 shows on *The Joshua Tree* tour, marking the 30th anniversary of its namesake album (and conceptually, the point when the band gained experience). Now 2018 bookends the project with the Experience + Innocence tour, which thematically wrestles with the pitfalls of worldliness.

If it sounds heavy, it sometimes is, but not as heavy as the massive amount of production that goes into the show every night. Once again, the band's audio needs are being handled by Clair Global. The show's visual trademark—much as it was for the 2015 tour—is the unusual staging that allows the band to perform across the length of the arena floor, giving all fans a chance to momentarily have the best seats in the house. A main stage at one end leads to a runway that cuts lengthwise down the venue to the other

end's circular B-stage, dubbed "the E stage"—as in "Experience." Above the runway hangs a massive double-sided screen (initially called the Divider, now nicknamed the Barricade) that shows video to both halves of the venue, even as it occasionally comes apart or presents bandmembers climbing around inside it mid-song.

The challenge for O'Herlihy was to present sound for performances at various positions across the length of the venue; the answer was to create an oval ring of 12 alternating left-right Clair Cohesion CO-12 PA hangs above the perimeter of the arena floor, each backed by eight hangs of three Cohesion CP-218 subs that use the cardioid method for steering bass energy into the arena. "It's a stereo image all the way around the entire building, so you've always got a stereo image, no matter where you are," says O'Herlihy. "The beauty of all of this is that each cabinet is within 75 feet of the listening public; it's very close, but the system is never under stress, so the quality of audio is 1,000 percent, simply because the system is focused for specific distribution to specific areas. It also never gets that loud; if it does, come and smack me."

Covering fans on the general ad-

mission floor are 32 Cohesion CO-10s used for downfill and centerfill above the front of the main stage, runway and E stage, and 18 CO-8s are built into the staging and runway as well. "All the way down, there's a speaker four feet away from you," says O'Herlihy. "The intensity of its level is time-aligned automatically so it gives you the impression of the sound; if Bono is standing there singing, he's singing to you. I think what it does is create interactivity, and this band is all about communicating with the audience. If they can't do that, then it defeats the purpose; the whole thing is connectivity."

Because the system is designed to provide omnipresent audio, the FOH position can be placed virtually anywhere in the venue, so long as it's relatively equidistant between two CO-12 hangs. As a result, FOH tends to be a few tiers up in the stands amidst the audience, allowing O'Herlihy to hear what the crowd hears and gain a much-needed bird's-eye view of a performance that traverses the length of the room. Central to the FOH area is a DiGiCo SD7 console, one of eight on the tour, all of which run at 96k. While O'Herlihy has no issue with emulations and plug-ins, he opts to

use two racks packed with Manley VoxBoxes, Avalon VT-737s, Summit Audio DCL200s and more vintage units—simply because he can.

A massive monitorworld sits be-

(continued on page 42)





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**RCF**



## U2

(continued from page 40)

neath the stage, comprising Niall Slevin's RF base, centered around a slew of Sennheiser wireless systems, and DiGiCo desks used variously by Alastair McMillan (mixing for Bono), CJ Eriksson (Larry Mullen and Adam Clayton) and Richard Rainey (the Edge) as they follow



Sound director Joe O'Herlihy (left) and senior systems engineer Jo Ravitch have worked together since the first U2 show for which Clair provided audio, 35 years ago.

the show via video monitors tracking each bandmember.

"Each console has 128 inputs and we're not duplicating anything," says O'Herlihy. "When they're on the E stage, certain channels are used; when they come into the Barricage, there's another separate set of channels that are used; and the main stage has its own channels. We don't complicate anything by duplication; when you duplicate, you multiply your own chances of error! Also, we believe in 100-percent redundancy—that's why we use the DiGiCo SD7. There's two engines in each of the consoles, so if you have failure in one engine, it automatically switches to the other one because they run concurrently. Even the most educated ear wouldn't hear the change. It is a huge aspect of what we do—biggest tour in the world, nothing can go wrong—so that's why we use this particular product."

The consoles, 200-plus loudspeakers and everything else from Clair Global are a far cry from the band's early days with the audio provider. "We've been doing this for a long, long time," O'Herlihy admits, "and



DAVID STREICH

An omnipresent stereo image is achieved throughout the venue by a dozen Clair Cohesion CO-12 hangs that provide alternate left-right feeds around the perimeter of the arena.

it's incredible the relationship we have with Clair going back. Our 35th anniversary was on the 11th of May—the first show we did with them was The Palladium in New York. We were playing in Las Vegas on the night, and I sent them a note saying, 'Congratulations, guys. 35 years ago today! I'd just like to share this with you.' Loads of notes back—Dave Skaff said, 'I remember driving some extra gear up to New York,' and Troy Clair chips in, 'I remember loading the truck for that!' and he's the president/CEO of the company now.

"And that's the thing—it's so much about the people. You can have the best kit in the world, but kit is kit if you don't have the understanding of the people that are behind it. We do this for two hours every day; there's 22 hours in the rest of the day, so people have to get on with each other, they have to travel in a bus, they have to do that whole thing—and your tour lasts! A lot of the people here have been with me a long, long time. Joe Ravitch, our senior systems engineer, has been with me 35 years—since that Palladium gig, actually."


If a U2 tour sounds like a family affair, make no mistake: it is. "My daughter Sarah is out here, working in tour management," he reports. Motioning to the Barricage, he adds, "My son, Mark, that's his screen. He works for PRG in Los Angeles, where he's our video provider. He came out with us in 1990 and he's been providing the video ever since. Sarah grew up around the guys; we were actually at Park West in Chicago, the 12th of April, 1981, when she was born on the U2 tour, so they know her since she was knee-high to a grasshopper, as they say."

Still, after 40 years of mixing U2, with productions, technologies, children and expectations that have all grown over the years, how does he see his work today?

"Do you know what?" says O'Herlihy. "I've got the greatest job in the world. I wake up every day, I love what I do. How many people get up every day and hate what they do? I feel absolutely blessed and I know it—and that's how I feel about it every day." That sounds like the voice of Experience.

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ES15P - Powered  
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Subwoofer







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Phone (905) 837-8481



## Bose

(continued from page 38)

best sound possible," says Borg. "He was at the opening ceremony for the building; he heard the sound in those gyms and he remarked on how there was no echo when the music is playing. That's astounding, since it's all hardwood and glass. When you clap your hands in here, or when you're running, you can hear the slap and the echo. But not when the music is playing in the speakers—that's how perfectly fitted to the spaces the Bose system was able to be tuned. We were able to totally customize the systems for the spaces."

Bose Professional  
pro.Bose.com

# Sweetwater Renovates Fort Wayne Theater

FORT WAYNE, IN—Every company is located somewhere, but being a part of that region is something entirely different. Over the last few years, it's become clear that Sweetwater is a part of its local Indiana community, whether drawing thousands of musicians and audio pros to Fort Wayne every summer for GearFest, being a sponsor of the region's Middle Waves Music Festival, contributing to (and in one case hosting) multiple local colleges' music programs, backing the recording of local musician/former *The Voice* contestant Addison Agen's first album and more. Now added to that list is the extensive renovation of Fort Wayne's art deco Clyde Theatre into a state-of-the-art music/performance/arts venue.

The building was constructed in 1951 as a movie theater, but it had been shuttered since the early 1990s. With funding provided by Sweetwater founders Chuck and Lisa Surack, along with incentives from local and regional economic development organizations, it was purchased in 2012. In 2017, work began to reconfigure the space as a modern performance and arts venue. Sweetwater provided the technology specifications and fulfilled the venue's massive gear requirements. Acoustic and design was tackled by Russ Berger Design Group.

The 21,000-square-foot main performance space will be outfitted as a multifunctional concert hall and special events center with a capacity for 2,150 in general admission. Chairs can be brought in to seat 830 in theater-style. Artist amenities include 7,000 square feet of dressing rooms and hospitality, as well as backstage loading docks. New HVAC, electrical, plumbing, acoustical plaster, roof and offices were part of the renovation.

The audio system is centered around JBL loudspeakers and subwoofers, with left and right hangs of 20 VTX A12 dual 12" line array loudspeakers, supported by eight VTX G28 dual 18" subs. Front-fill duties are handled by seven VT4886 subcompact boxes, while five F12 loudspeakers are used as delays. The system is driven by 18 Crown I-Tech 4x3500HD and I-Tech 12000 HD power amplifiers. Stage monitoring is also via JBL, with eight VTX M22 dual 12" and two VTXF35/95 dual 15" stage monitors, supplemented by a VTX F18S compact subwoofer.

For FOH and monitor engineers, the house desks are both Avid Venue S6L-192 consoles, with signal routing handled by a Venue Stage 64,



One of the first shows to be presented in the newly refurbished Clyde Theatre was a performance by tribute act Pink Droyd.

with 64 analog inputs, 24 analog outputs and eight digital outputs. Additional processing power is provided by a Waves Extreme server.

The venue has an extensive arsenal of Shure microphones on hand for performers' use, including multiple SM57, SM58, Beta57a, Beta58a, Beta181, Beta87a, Beta52a and Beta98AMP mics. Shure condenser mics include multiple KSM141, KSM32 and KSM44a units. Vocalists and performers can choose to use up to eight Shure Axient wireless mic systems and eight Shure P10T in-ear wireless systems. Telefunken M80 and Drum Mic Packs, and Sennheiser MD421 and e906 mics round out the selection, augmented with Radial JDI, J48 and JDI stereo direct boxes. A full complement of K&M microphone stands supports the extensive mic list.

Surack added, "The Clyde Theatre was a shining light in the Fort Wayne area, and it has been a real thrill to be part of bringing this historic and gorgeous facility back to prominence as a beautiful, world-class venue for music. We left no stone unturned to ensure a comfortable, safe environment for those attending concerts and other events." There will be other events, too, as the Clyde is also available to host private and public events, including weddings, receptions, corporate events, non-profit fundraisers and more.

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ACT / STATISTICS	CREW	EQUIPMENT
<b>1 PINK   BRITANNIA ROW</b>	Dave Bracey (he); Jon Lewis (me-Pink); Horst Hartmann (me-Band); Guillaume Burguez (cc); Johnny Keirle (se); Juan Beilin, Shaun Ayles (ae); Jack Murphy (tech)	HC: DiGiCo SD7; MC: DiGiCo SD7; Yamaha PM10; HS: L-Acoustics K1, K2, K1SB, KARA, KS28; MS: L-Acoustics X15, Clair CM-2; IEM: Sennheiser 2050; HA: L-Acoustics LA12X; MA: Lab.gruppen; WIRELESS MICS: Sennheiser 6000 series; OTHER: Radial SW8
<b>2 TAYLOR SWIFT   EIGHTH DAY SOUND</b>	David Payne (be); Jordan Kolenc (Swift me/cc); Scott Wasilk (Band me); Dan Bluhm (se); Eoin Collins (mtech); Chase Usry (ae); Ike Zimbel (rf coordinator); Turner Pollari (rf tech); Andy Dudash (rf comms); Liam Von Elbe (lead pa tech); Sam Balk, Mike Vultaggio, JP Kearney (pa tech)	HC: DiGiCo SD7; MC: (2) DiGiCo SD7; HS: d&b audiotechnik J Series Array Processed, J-Sub, B22, V8 front fills; IEM: Shure PSM 1000, Wisycom MTK952; HA: d&b audiotechnik D80; HARDWIRED MICS: Telefunken; Shure; Sennhieser; WIRELESS MICS: Sennheiser Digital 9000, 6000; Shure Axient Digital; FOH EQUIPMENT: Neve Portico, Masterbuss; Lexicon PCM 92; Bricasti M7; Waves; Soundcraft Realtime Rack; MONITOR EQUIPMENT: Eventide Eclipse; TC Electronic System 6000; SPL TD4; Waves, Soundcraft Realtime Rack; OTHER: Radial JS2, JS3, J Rak 4, Tonebone Mix Blender
<b>3 JUSTIN TIMBERLAKE   CLAIR GLOBAL</b>	Andy Meyer (he); Paul Klimson (me); Phil Kriz, Justin Lenards (se); Hugo Gudino Jr., Elliott Wiley (mse); Paul Manuel (ae); Dustin Chrysler, Carlos Lopez-Olavarria, Rachel Rozzi, Nathan Sonnenberg (techs); Kevin Leas (RF tech)	HC: DiGiCo SD7; MC: DiGiCo SD7; HS: Clair Cohesion CO-12, CO-10, CP-6, CP-118, CP-218; HA: Lab.gruppen PLM 20000Q; MA: Lab.gruppen PLM 20000Q; OTHER: Radial JX44, SGI44
<b>4 KENNY CHESNEY   MORRIS</b>	Chris Rabold (be); Bryan "Opie" Baxley (me); Phill "Sidehill" Robinson (me-Chesney); Chris "Sully" Sullivan (se); Rich Rossey (patch); Phil Spina (cc); Carl Schmidt, Tanner Freese, Ryan Lewis, Justin Curtiss (techs); Ed Wannebo (pm)	HC: SSL L500 Plus; MC: (2) Midas ProX; HS: d&b audiotechnik GSL; MS: d&b audiotechnik M4; IEM: Shure PSM1000; HARDWIRED MICS: Shure SM91, Beta 52, SM57; AKG C414; Telefunken M60, M80-SH; Sennheiser MD 421; Beyerdynamic M 88 TG; Royer R-122; Radial SW8, J48, SGI, DM1; WIRELESS MICS: Shure AXT400 Axient, AXT200 J5 Handheld, AXT610 Axient; sE Electronics V7 MC1 capsule; FOH EQUIPMENT: Empirical Labs EL8-X Distressor, EL7 Fatso Jr; Rupert Neve Designs 5045 Primary Source Enhancer; Sonic Farm Creamliner Eventide H3000; API 2500 Bus Compressor; Tech 21 SansAmp PSA 1.1; Overstayer M-A-S, Stereo Field Effect, Stereo Voltage Control; Universal Audio UAD-2 Live Rack; Waves Extreme Server
<b>5 BON JOVI   CLAIR GLOBAL</b>	Dave Kob (be); Dave Skaff (me); Adam Stuart (cc/se); Dave Ferretti (ae); Ken McDowell (rf tech); Katie Hughes (tech)	HC: Yamaha PM5000, QL1; MC: DiGiCo SD7 with SD Rack; HS: Clair Cohesion CO-12, CP-218, CO-10; MS: Clair CP-118; IEM: Shure PSM 1000; HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Shure SM 81, 91a, 52a, Beta 181, SM 58; Sennheiser MKH 416, MD 421, MD 409; Audio-Technica AT4047; Neumann TLM 103; Radial J48, JX44, Firefly Tube DI; Countryman DI; WIRELESS MICS: Shure Axient AD4D; FOH EQUIPMENT: Bricasti M7; Summit TLA 100; Empirical Labs Distressor; Yamaha SPX2000; Aphex 612 gates; TC Electronic D-Two; dbx 160A; MONITOR EQUIPMENT: Waves Mercury Bundle; API 3124
<b>6 EAGLES   CLAIR GLOBAL</b>	Tom Evans (he); Ricky Leon, Charlie Hernandez, Jr. (me); Jared Lawrie (cc/se); Erick Ruiz (rf/stage e); Jen Smola, Matt Patterson, Dustin Andersen (techs)	HC: SSL Live L500; MC: DiGiCo SD5; Avid S6L; HS: Clair Cohesion CO-12, CO-8, CP-6, CP-218 subs; MS: Clair Cohesion CM-22; Clair 12am, ML-18; IEM: Shure PSM 1000; HA: Lab.gruppen; MA: Lab.gruppen; HARDWIRED MICS: Shure Beta 87, Beta 57a, Beta 91a, SM58, SM58s, SM81, Beta 56, Beta 58a, SM48; Audix D6, SCX25a; AKG 451; Audio-Technica AT4050; Telefunken M80, M80SH, M81, M81SH; Sennheiser e904, e906, MD409, MD421; DPA FA4018V, 2011C; Radial JDI, J48, SW8, DM1, JX44 switcher, Tonebone Headbone VT amp switcher, North Star overdrive, AC Driver acoust c preamp; WIRELESS MICS: Shure Axient; FOH EQUIPMENT: Bricasti M7, Waves Live; MONITOR EQUIPMENT: Neve 5035
<b>7 U2   CLAIR GLOBAL</b>	Joe O'Herlihy (he); Alastair McMillan; Richard Rainey; CJ Eiriksson (me); Jo Ravitch (se); Joel Merrill (cc/se); Niall Slevin; Brandon Schuette; Thomas Birkhead (stage e); Pascal Harlaut; Hannes Dander; Ann Butt; Brian Slevin (techs)	HC: DiGiCo SD7; MC: (3) DiGiCo SD7; HS: Clair Cohesion CO-12, CO-10, CO-8, CP-218; MS: Clair Cohesion CP-118; IEM: Sennheiser 2000 Series; HA: Lab.gruppen StakRak; HARDWIRED MICS: Shure SM48, SM57, SM58, SM81, SM98, Beta 58, Beta 87, Beta 91, Beta 52, Beta 52a, Beta 58, PG58; AKG 451EB, A51, C-414B; Sennheiser MD-421, MKH-416, MKH50; Audio-Technica AT4050; DPA 4099, 4088, Countryman DI; Radial SW8, ProD8, J48; WIRELESS MICS: Shure Axient; FOH EQUIPMENT: Lexicon 480L, PCM70; Summit DCL-200; Manley VoxBox; Avalon VT-737SP; Eventide H3500; Klark-Teknik DN6000; Yamaha SPX1000; MONITOR EQUIPMENT: Lexicon PCM80; AMS RMX16; Yamaha SPX-1000, SPX-990; Amek 9098; Antelope Isochrone Trinity
<b>8 KENDRICK LAMAR   SOUND IMAGE</b>	Kyle Hamilton (he); Chris Lee (me); John Leary (cc); Tim "Ziggy" Ziegler (se); Michael Pollard (m/rf tech); Alex Reeder, Latoya Sanders (techs)	HC: DiGiCo SD7; MC: DiGiCo SD7; HS: VUE Audiotechnik AL-12, HS-22, AL-8; MS: Sound Image MAZ12; VUE Audiotechnik AL-12 sidefills; IEM: Shure PSM 1000; JH Audio Roxanne; HA: VUE Audiotechnik V3; MA: Crown I-Tech 12000HD; HARDWIRED MICS: Shure, Sennheiser; WIRELESS MICS: Sennheiser Digital 6000; FOH EQUIPMENT: Universal Audio UAD-2 Live Rack; MONITOR EQUIPMENT: Universal Audio UAD-2 Live Rack
<b>9 ROMEO SANTOS   EIGHTH DAY SOUND</b>	Franklin Espinal (he); Javier Morales (me); Krysten Dean (cc); Danny Paleaz (ae); Jay Butler, Chris Smith (techs)	HC: Avid Venue S6L; MC: Avid Venue S6L; HS: d&b audiotechnik; MS: d&b audiotechnik; IEM: Aviom; HA: d&b audiotechnik; MA: d&b audiotechnik; HARDWIRED MICS: Shure; Sennheiser; WIRELESS MICS: Shure Axient
<b>10 DEAD &amp; COMPANY   ULTRASOUND</b>	Derek Featherstone (be/se); Matt Haasch, Ryan Cornelious (me); Lonnie Quinn (mse); Michal Kacunel (cc/se); Sean McAdam (se); Michael Bollella, Cody Scott (techs)	HC: Gamble EX56; Avid S6L (96 Ch. drums) with Pro Tools 12.7; MC: Avid Venue D-Show (96 Ch.), Venue Profile (96 Ch.); HS: (36) Meyer Sound Leo, (22) 1100-LFC, (16) 700-HP, (32) Milo, (16) Mica, (6) Leopard; MS: Meyer Sound MJF-212, MJF-210, 1100-LFC; IEM: Sensaphonics, JH Audio; Future Sonics; HARDWIRED MICS: Milab LC-28, LSR3000; Shure KSM8, KSM9, Beta91, Beta2, SM57; Sennheiser 421, 409, 904, 935; Neumann KMS104; Helpinstill model 280 piano pick-up system; AKG 414, 460; Telefunken M-80; Radial JD7, SGI, DM1; FOH EQUIPMENT: Summit DCL-200, TLA-100; Empirical Labs Distressor; TC Electronic M5000, D-Two; Aphex 622 gates; KNAS Das Ekdahl Quad Massager; UltraSound DRSE Quad Panners; Metric Halo UNL2; TubeTech LCA-2B; UREI 1176; MONITOR EQUIPMENT: Sennheiser EW300G3

**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.

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## UltraSound

(continued from page 38)

specialized in designing and installing audio systems for high-profile stadiums, arenas, convention centers, museums and the like. In the decades that followed, the jointly run Pro Media UltraSound continued to provide audio support to a broad range of clients, including the Dave Matthews Band, Andrea Bocelli, The Cars, Primus, The Lumineers and others.

In late 2016, Pro Media was sold to Panasonic, with the companies' owner, Drew Serb, retaining UltraSound. With Serb looking to retire, discussions for UltraSound's acquisition began in May 2017, with Featherstone, a cornerstone of the company, and Mastrangelo.

New CEO Featherstone has spent the last three decades with Ultra-

Sound; prior to the acquisition, he was vice president of tour and rental. He has mixed front of house for the likes of Primus, The Dead, Phil Lesh & Friends and Tracy Chapman over the years, as well as all Dead & Company tours.

Meanwhile, COO Mastrangelo's audio career began in 1980 when he founded a regional sound company in New York; a dozen years later he joined Clair Brothers. He spent the

next 20 years working his way up to senior director of touring at Clair Global before moving on to found the live sound division of VER as director of VER Tour Sound.

Despite the big changes, UltraSound hasn't slowed down. Featherstone, currently on the road mixing FOH for Dead & Company, chuckled as he recalled "our closing call with the lawyers was done while doing a line check in Camden, NJ." Mastran-

gelo, who will remain based in Nashville, concurred, noting, "We haven't had the chance to be in the same room since I can't tell you when."

Moving forward, their aim for the company is to carry on its traditions—close customer service for existing clients and a considerable Meyer Sound-based inventory of Leo, Lyon and Leopard systems among them—while taking on new clients as well.

## New PA Elevates Church

JACKSONVILLE, FL—Elevate Life Church, a mobile, non-denominational house of worship, recently updated its audio system with PreSonus' WorxAudio X2 line arrays and TL118SS subwoofers, purchased through Guitar Center Professional.

As a mobile church, ELC is held each week inside Orange Park High School in Orange Park, FL, converting the school's gymnasium into a sanctuary. That means each Sunday sees a load in, setup, operation, and load out of all equipment used for the church's services.

Jeff Aldrich, executive producer for the church, noted, "The space is a standard basketball court with a domed ceiling. Since we move the equipment each week, we needed an efficient sound system that wouldn't be overwhelming to transport."

The two WorxAudio X2 enclosures are positioned left and right of the stage, mounted on Global Truss crank stands at a height of 15 feet. The two TL118SS subwoofers are positioned beneath the stage—also left and right. The entire setup is adorned in 300 feet of acoustic absorbent drape.

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Ted White

Focusrite Pro has appointed **Ted White** to the role of global marketing manager. The position marks his return to the company; he served as senior technical sales and product specialist for the RedNet range of Dante-networked audio converters and interfaces from 2012 to 2016. During his previous tenure at Focusrite, White helped establish RedNet as a solution in the AoIP space. His background includes time spent with Harman International, Live Nation Studios, Solid State Logic and others.



Jay Wyatt

**Jay Wyatt** has been named to QSC's Cinema team as a sales engineer, where he will be responsible for presales technical support, product training and cinema system design consulting. He comes to QSC from GDC Technology, where he was a sound engineer involved in the roll-out of immersive sound products and provided cinema sound support. He began his career at Ultra-Stereo Labs as an assistant engineer, where he became versed in many of USL's test and measurement products, media blocks and cinema processors.



Miguel Hadelich

d&b audiotechnik has named **Miguel Hadelich** as business developer advanced systems, d&b audiotechnik Corp. USA. Based in Los Angeles, Hadelich will be the central coordination point for the d&b Soundscape and the d&b DS100 Signal engine in North, Central and South America as he works with customers and introduces Soundscape to consultants, specifiers, architects, artists and audiences. Previously Hadelich held positions at Lake Technology, Dolby Laboratories, TC Group and Music Group. Most recently he was a consultant at Berlin-based 3D audio technology company Holoplot. Hadelich holds an MBA from the Institute of Management in Berlin and speaks fluent English, German, Spanish and Hungarian.

Heil Sound has named **Jerry Lynch** its new U.S. sales manager. A long-



Jerry Lynch

time employee of Heil Sound, Lynch will be responsible for all matters related to daily and long-term sales efforts for the company's pro audio and amateur radio divisions. Prior to his appointment, Lynch worked as the in-house factory liaison for touring artists, and additionally handled aspects of dealer technical support. He will be based at the company headquarters in Fairview Heights, IL.



John Hart

Alteros, an Audio-Technica company, has named **John Hart** to the position of national sales director. In this role, Hart will report directly to Jackie Green, president and CTO of Alteros. Based in Los Angeles, he will oversee U.S. dealers and direct sales. Some of his previous roles include systems/sales specialist at Euphonix Inc., western regional sales manager at Otari Corp., president of AMS/Neve Inc., director of sales at Soundcraft/Studer Digital Console Group and vice president of operations at PMI Audio.



Erica Moran

Guitar Center has named **Erica Moran** as its vice president of marketing and **Bob Buckborough** as its vice president of ecommerce. Moran will lead Guitar Center's marketing efforts, including email marketing, retail and category marketing, visual merchandising, and media and partnership marketing. She served as a retail and digital marketing consultant for ACIRE Consulting Group, was a former chairman and is a current member of the CRMC Retail Advisory Council, and is a board member of the Phoenix Symphony. Buckborough will lead Guitarcenter.com and Musicians-Friend.com, along with marketplace efforts and ecommerce operations for the company. Most recently he served as the vice president of ecom-



Bob Buckborough

merce at West Marine. He has served on the board of directors for the Sail America trade organization and is a founder of the Hybris North America User Group.



Aravind Yarlagadda

QSC has chosen **Aravind Yarlagadda** as its chief technology officer and executive vice president, product development. In the newly created role, Yarlagadda will oversee all aspects of product development for QSC. Prior to joining the company, he was at Schneider Electric, where he held senior executive roles in product management, research and development, marketing, strategic partnerships and new business initiatives. Also during his career, he held senior leadership roles at Invensys, Tyco and Quest Software.



Matthew Whitman

Italian professional audio manufacturer dBTechnologies has named **Matthew Whitman** as its U.S. product specialist. Currently based in Farmington, ME, Whitman spent years as the owner of a production company and as a front of house engineer for numerous acts, including Squirrel Nut Zippers, for which he was also tour manager.



Chris Powell

Pelican Products has appointed **Chris Powell** as corporate controller to manage global financial operations. Powell will have direct oversight of the company's global accounting department, which provides financial services for Pelican's commercial/government, consumer, biothermal and international divisions. His responsibilities will include financial statements, general ledger, cost accounting, payroll, accounts payable, accounts receivable, budgeting, tax compliance and various special analyses. He began his career with PricewaterhouseCoopers in Los Angeles and served at Qualstar, Guidance Software, ReachLocal, Beats by Dre and Velocity Inc.

Clear-Com has picked **Kris Koch** as its regional sales manager for the



Kris Koch

Southwest U.S., covering Southern California, Southern Nevada, Arizona, New Mexico and Colorado. He will work with reps, dealers, consultants and end users across the region and get involved with consultative sales activities, product demonstrations and trade shows. Most recently he was director of engineering at MediaOne, where he designed and built a new facility with two studios, and managed broadcast operations for ATT Park, home of MLB's San Francisco Giants. Prior to that, he was senior account manager at Key Code Media



Ken Gayron

**Ken Gayron** has joined Avid in the role of chief financial officer and executive vice president. Gayron worked half of his career in senior finance management for public companies, most recently having served as CFO and interim CEO for Numerex, playing a part in the leadership team that led that company's sale to Sierra Wireless. Previously he served as the CFO of Osmotica Pharmaceutical Corp. and also held senior finance roles with software and technology providers Sensus Inc. and Nuance Communications. The first half of his career was in investment banking with UBS Investment Bank and CIBC World Markets. Gayron's responsibilities include finance, accounting, treasury, indirect procurement, corporate development and investor relations.



Didier Streel

Solotech has appointed **Didier Streel** as vice president of business development, for Solotech's European rental division. Streel will implement Solotech's expansion strategy in the European market as he oversees the launch of service points to support commercial activities in Europe and ensures the development of new European client bases in the tour, corporate and special events market segments. For the moment, he'll be based in Brussels, Belgium.

# VUE, From the Top

SARA ELLIOTT, CHIEF OPERATING OFFICER, VUE AUDIOTECHNIK

BY CLIVE YOUNG

Every year, new manufacturers enter the pro audio industry, and seeing them start up can be a little like watching people at your local skating rink. Some putter along in a rudimentary fashion until they call it a day; others wobble and wipe out spectacularly. But the pros, you can spot them right away—their blades hit the ice and they're off, deftly in command of their movements and able to bring it all together in a way that makes the rest of the rink raise an eyebrow and take notice.

That's what happened in 2012 when loudspeaker manufacturer VUE Audiotechnik was founded by a team of high-profile industry pros—and the metaphor is particularly apt in this case because it was skating that first led one of those team members, Sara Elliott, to the world of live sound.

"I became interested in event production while touring with ice shows as a professional show skater," she says. "Unfortunately, skaters have a shelf life, so when I hit that ceiling, I knew the production world could make good use of my experience with everything from trucking logistics to set-up and load-out. There's just something very satisfying about putting a show together and moving it around the country. Why audio? Because they were always the fun guys on tour!"

Elliott's first production job was with Burns Audio—a spot that found her learning on the fly as the company tackled sound for TV award shows. "You can imagine my surprise—having barely unlaced my skates, I'm suddenly on the red carpet as a runner for Patrick Batzel at the Shrine for the Academy Awards," she recalls. Taking on numerous roles, Elliott worked with the VP of Special Events, as well as in various sales administration and marketing positions. "I also gained invaluable experience as a diplomat and negotiator while navigating the charged political environments of high-profile TV award shows and political events," she says. "I draw on all of these skills to this day."

A move to A-1 Audio and Lighting (later acquired by PRG) put Elliott into the world of rock 'n' roll tours; once there, she met Ken Berger—then co-founder of Eastern Acoustic Works and later co-founder of VUE Audiotechnik—when A-1 purchased an EAW KF 850 rig for

1995's Van Halen Balance Tour. "Working with Ken on the marketing for that tour inspired me to explore public relations work," she says, "which ultimately led to a long career in pro audio publishing with magazines such as *PLSN*, as well as *Live Sound International* magazine, and *prosoundweb.com* as associate publisher."

All of that led to Elliott being part of the launch team for VUE in 2012, her background providing an ideal mix of skills for running a growing business. "I've literally done everything from administration, sales and finance to fulfillment, distribution and inventory control," she says. "Moving from details to big-picture strategy is comfortable for me."

These days, she's the COO, "Which is a really fancy way to say, 'She who wears many hats,'" but she's hardly alone: "Ken takes care of overall company strategy, marketing and international market development. Michael Adams, who also works here in Escondido, handles all product development."

Escondido, CA, roughly 30 miles northeast of San Diego, is home to VUE, LLC. The location houses the company's product development, marketing, domestic sales, company operations and U.S. warehousing. Going hand-in-hand with all those departments is a growing staff, both here and abroad.

VUE's production is likewise handled with an international approach, she notes. "Manufacturing is a true global operation thanks to our partnership with Speaker Connection GmbH of Solingen, Germany. They operate a 290,000-square-foot production and R&D facility in Asia, where all VUE products are manufactured."

The development of those products happens in the United States, however. Elliott says, "Mike Adams



Sara Elliott

spent nearly four decades developing systems for Sound Image. He understands the challenges that engineers and system techs face every day. When we incorporate technology such as beryllium or advanced DSP, it's done with the real world in mind. You could say it's just another example of our customer-first mentality."

That mentality is crucial for any new company in an industry that relies so much on personal bonds. "We launched VUE in part because we saw many established companies losing sight of their customers' needs," she recalls. "Acquisitions and buyouts were diluting longstanding relationships. Before VUE, we all built some of pro audio's most respected brands; we understand the value of relationships."

Building out a company's infrastructure has its challenges, but it also has its rewards, such as the satisfaction of seeing the company's products used for high-profile productions. Elliott pointed out, "We're currently supporting the Kendrick Lamar tour worldwide, among others; that's a massive commitment in time and resources for a young company. We're also seeing a lot of interest in large and mid-format line array systems in the HOW and corporate rental markets. We're working really hard to build our sales organization to support the growing potential for VUE in those markets."

"Currently, the concert sound

and touring segments are VUE's most significant focus, but we are actively pursuing installation markets. At InfoComm, we launched the new e-Class integrator systems, which we believe will be a disruptive product for contractors."

There's another thing that VUE is starting to build: careers. "On a personal front, I'm very passionate about my involvement with SoundGirls," says Elliott. "In fact, last year I was able to support a young woman named Michelle Naziri, who I met through the mentoring program at SoundGirls. She joined VUE as an intern and is now finishing her engineering degree at Cal Poly at San Luis Obispo. We're really looking forward to seeing her career progress."

Elliott started in pro audio 28 years ago and since then, women have remained under-represented. ("I have lots of big brothers"). Today, her involvement in SoundGirls allows her to improve that ratio going forward: "After all these years, I am so excited to see how the industry is changing for women. There was a small group of us when I started in 1990; today, I'm thrilled to see so many talented young women coming onboard and making noise. This makes the small group of ladies with whom I've shared this journey that much more proud. Maybe we helped to blaze a trail."

VUE Audiotechnik  
www.vueaudio.com

## Headphones

(continued from page 1)

eight playback transducers, six microphones and multiple sensors to generate a “3D” experience calibrated to each individual user.

The company, started by two former Logitech engineers, ultimately produced just 250 pairs of Ossic X headphones and delivered only 80, to its top-tier backers, leaving tens of thousands of investors in the lurch, their preorders unfilled.

Ossic’s implementation of the tech may have been unique, but it was not the first to offer individual calibration. AKG launched its N90Q headphones, “inspired by Quincy Jones” and aimed at audiophiles (read: expensive), in late 2015. Touted as “the first headphones with personalized sound,” the N90Q can, in addition to offering selectable soundstage settings and active noise cancellation, individually tailor the listening experience. AKG’s TruNote auto-calibration solution uses a pair of tiny mics in each ear cup to measure the average frequency response of a signal entering the wearer’s ears to gener-

ate “an accurate correction filter, all within a second.”

In addition to the variations in response among all brands and models, an inherent drawback of headphones for critical listening is, of course, the total separation between the individual’s left and right ears. As a result, various software solutions have popped up over recent years that not only offer corrective equalization and other functionality, but equally importantly, they provide crossfeed to emulate the experience of listening to speakers in a physical space, where sound reaches each ear from both speakers. For those mixing in less-than-ideal acoustic spaces or in situations where loudspeakers are simply not an option, plug-ins such as Overhead by MILDON Studios, Toneboosters’ Ison and Redline Monitor by 112 dB offer inexpensive solutions with basic functionality for monitoring on headphones in stereo.

For those seeking something a little more upmarket, the Waves Nx virtual monitoring plug-in recreates high-end studio acoustics inside headphones, essentially offering a preview of how a headphone mix will translate to a studio environment

with reference monitor speakers. And not just in stereo; Nx supports 5.1 and 7.1 plus monitoring of Ambisonics B-format audio for 360° and VR projects.

Nx’s calibration feature enables the user to select an EQ correction curve for specific headphone models. The optional clip-on, Bluetooth-enabled Nx Head Tracker follows the user’s head movements through 360 degrees.

Software developer Sonarworks very recently updated its Reference 4 sound calibration software with Sonarworks SR standardization technology, which it claims delivers accurate and consistent studio reference sound across speakers and headphones. According to Martins Popelis, vice president and co-founder of Sonarworks, coloration introduced by headphones or a room negatively impacts cost and productivity. “We estimate that at least one-fifth of the effort in the music industry is spent dealing with translation issues,” he says.

Headphone calibration is achieved using pre-measured profiles developed in the Sonarworks Lab. Speaker calibration is achieved in the room using Sonarworks measurement software and a dedicated reference microphone.

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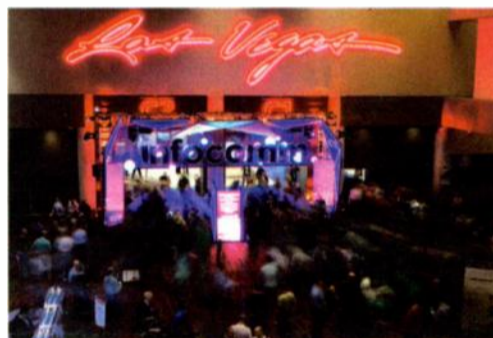
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## InfoComm

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date. Filling all that space were 964 exhibitors presenting an estimated 10,000-plus products to nearly 43,000 registered attendees from all 50 states and 108 countries. A full 20 percent of attendees came from outside the U.S. According to Julian Phillips, chairman of the board of directors, AVIXA, “Forty percent of the InfoComm attendees have been end users [in the past], and that is a trend that is going to continue to grow.... They come to InfoComm for insight rather than just viewing products and meeting people. Center Stage [InfoComm’s hub for creative dialogues, featuring thinkers and practitioners from various fields that use pro AV extensively] is an example of sharing insight to get the conversation moving.”

If there was a trend this year, it was that many of the most intriguing events took place before the show even began—almost like an after party in reverse. While 540 attendees took part in the show’s traditional three-day training sessions before the show opened (a new record) and 188 pros passed the Certified



Technology Specialist exam offered, there was more to explore than that. The day prior to InfoComm saw the third edition of the TIDE (Technology, Innovation, Design, Experience) Conference, while Emerging Trends Day, Integrated Life Day and other offerings took place concurrently. TIDE shared ways of applying human-centered design to AV solutions, and Integrated Life looked at technologies for smart buildings, homes and spaces. Emerging Trends, held in association with the IMCCA, examined growing changes to the digital workplace, display technologies, storage and distribution, live experience technology and more.

All those offerings provided industry insights and helped draw desirable attendees to the show. As Derk Hagedorn, Avid’s senior marketing manager, live sound and studio consoles and controllers, noted, “As one of the largest professional audiovisual trade

shows in the U.S., InfoComm is where industry innovators and thought leaders share their expertise, discuss the latest technology trends and debate the future of the AV industry. For Avid as an exhibitor, it’s the show where our live sound solutions take center stage.”

The considerable number of preshow offerings also attracted attendees to InfoComm because those events were based around industry trailblazers sharing hard-earned knowledge. David Labuskes, CEO of AVIXA, pointed out, “The people who donate their time to present their perspective on where the industry is heading are thought leaders. In many cases, their perception of where we’re heading highlights questions that the attendees spend the rest of the week getting answers to. And the exciting thing about being on the show floor with 40,000 people is that you can get 40,000 answers and then you can pick and choose from those. It establishes a context within which to experience the rest of the show.”

If you missed it all, fret not; you have a year to prepare for the next one. InfoComm 2019 will take place June 8-14, 2019, at the Orange County Convention Center in Orlando, FL.

InfoComm  
www.infocommshow.org

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# An Echo Returns

BY JACQUES SONYIEUX

Hailing from Liverpool, England, Echo & The Bunnymen were among the first of the new wave troubadours to make their mark, emerging in 1980 with a lyrical, introspective sound that was all their own. Ian McCulloch's talents quickly surfaced on some of their earliest hits, including "Seven Seas," "The Killing Moon" and "Rescue"—the latter of which he wrote when he was just 19 years old. Since then, the band has gone through many iterations, but McCulloch's drive and creative influence have not waned. The group's new album, *The Stars, The Ocean and The Moon*, comes out this October and features remakes of some of their classics, along with two new songs that live up to the band's stellar legacy. *Pro Sound News* spoke to an upbeat McCulloch, who is touring the U.S. with the band this month.

## ON SONG CHOICE

We have got a vast repertoire. I thought about doing an Eddie Cochran-style kind of thing on these songs but I didn't think it stacked up properly. I didn't want it to sound pastiche—especially if they are my own songs! By and large, I wanted to do songs that people knew, with a few surprises—like "Angels & Demons" and "Stars Are Stars," which people perhaps wouldn't expect. But I knew how I wanted to change them to make them sound more believable. I can't listen to any of those old records anymore, not even *Ocean Rain*. With this album, the selection process came easy for me; I chose songs that were

kind of personal, but I also wanted to bring people into the emotional side of the songs rather than just do the sing-along thing. I also wanted to attempt a remake of "The Killing Moon"—some of my loved ones were saying, "That's a bloody dangerous thing to do." But I thought, why is that? Other bands like Pavement have covered it and it didn't seem dangerous. If anyone should be covering it, it should be me.

## ON TRACKING VOCALS

When I track vocals, I close my eyes and just get on with it. I try not to over-sing now, which I did in the past. I used to say, "I could do that



Ian McCulloch

PHOTO BY ALEX HURST

better"—but it might be 12 takes down the line. The best take, though, is always among the first three. Most of the vocals on this album were done in one take, and I didn't sing any song more than twice. Of all the voices that I've had, this is the one that I like the most, and some people don't even get that. They think, "Holy smoke—all those ciggies?" But some people say, "That's it—that's the best he's ever sounded." Obviously I appreciate those kinds of comments more than someone else who says, "He doesn't sing like he used to."

## ON "RESCUE"

I wrote "Rescue" when I was 19. I just felt shy and insular, not really knowing who I was. I came from a working-class family, or just below that, and there was this wall in the house that we lived in with my mom. She was always on the phone with the council, saying "There is all this black mold all over the sodding back wall." Nobody ever came out to fix it until one day the whole southern wall just fell off the back of the house. So then they rehoused us to this other place, and I wrote the lyrics to "Rescue." I think I was always clever and smart, but that didn't come out until I formed the band. That helped me to be not so shy.

## ON LYRICS

I've always been driven by the lyrics. The lyrics and the top line melody have always been the most important things to me. But things like "Changes," "Oh! You Pretty Things," "Life on Mars?" or any song off of Bowie's *Hunky Dory*, I go "How the f--k did he write that?" Some of it sounds a little bit cheesy, but when you add Bowie's voice in there, nobody else could sing those songs. I was also

attracted to Leonard Cohen—who didn't just sing "Help me if you can, I'm feeling down" [like The Beatles]; he sent me to another place altogether. I also liked Lou Reed, because you always knew who he was. I think it was on *The Game*, our fifth album, where there is a little bit that says "The world is a ball." Will [Sergeant, guitarist] turned to me and said, "Hey, Mac, that sounds like poetry." And that was like 10 years or so into Echo & The Bunnymen already. I thought, "What did you think I was doing with 'The Killing Moon?'" It was unbelievable.

## ON DEMOS

I've always got loads of tunes in my head—20 at a time. Some might be slow and sad laments, but then I'll have another rocker going on in the other side of my brain. I used to get chords and then sing a tune to them, or sing a tune and then work out the chords. Now I just store them all in my head, and some of the songs I don't know what the chords are. Which could be a problem when I record them. But the *new* songs on the record were why we got signed to BMG—not just to redo old songs. We will have a new record full of new songs by next October, and I want that album to have a spike to it. I was always influenced by David Byrne, The Clash and Lou Reed, the godfather of rhythm, for example. I want that space and that spike, and that's what the demos are sounding like right now. We've already got 30 songs down and will end up picking about 12 of them. It is beautiful stuff.

Jacques Sonyieux is a devout explorer of recording studios and the artists who occasionally inhabit them. Please send any tips or feedback to Jacques at [jacquessonyieux@gmail.com](mailto:jacquessonyieux@gmail.com).

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