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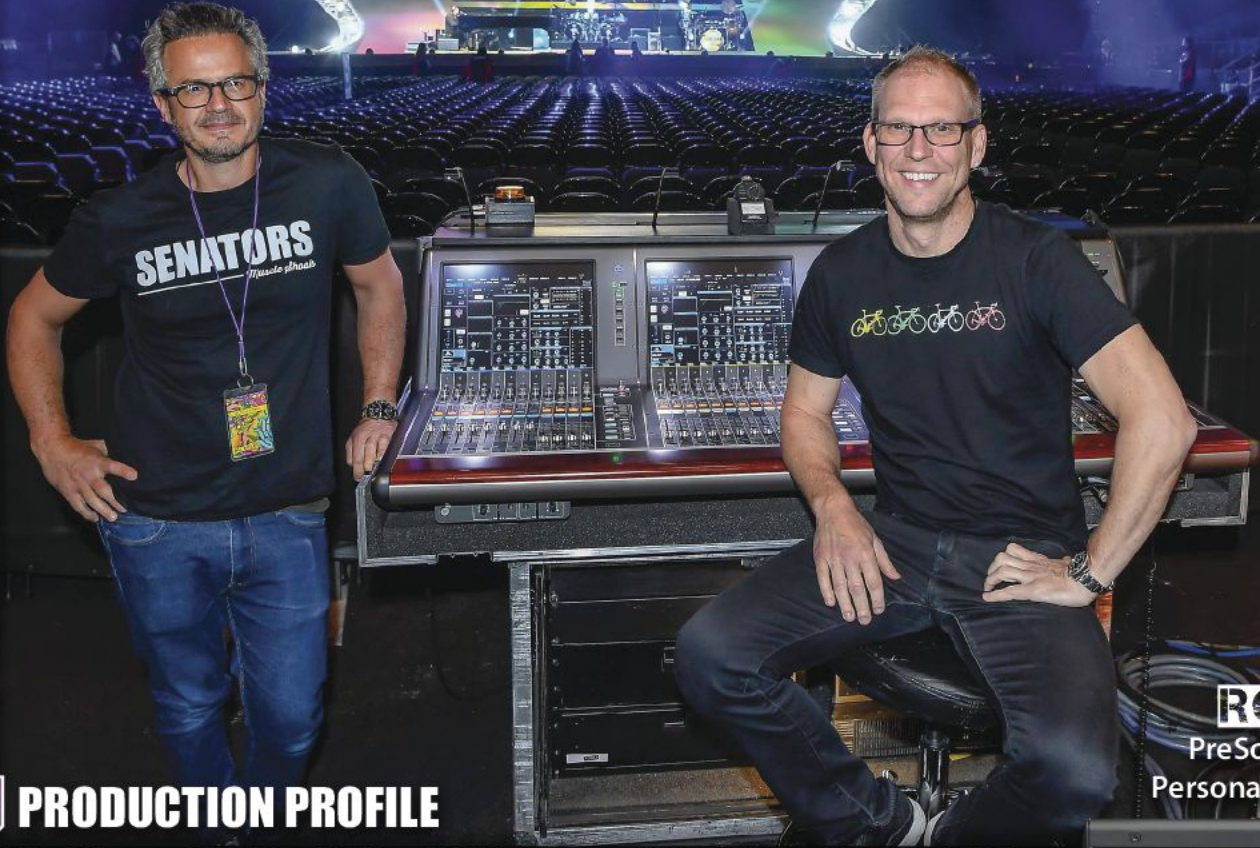


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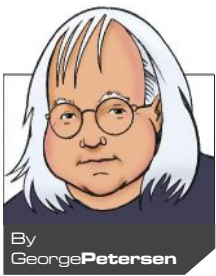
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## EDITOR'S NOTE

# Finally Found a Home

I'm a traditionalist. Yeah, one of those guys who wistfully recalls the old days, like the personal touch of those good ol' NSCA shows or the intimacy of the New York AES shows back when they were held at the New York Hilton. The vibe was different then as well.

The exhibit floor of the AES reflected all aspects of the industry, including displays of live sound speakers, and even the clattering banks of cassette duplication loaders, record mastering gear and eventually the arrival of CD replication equipment — all alongside the usual microphones, preamps, consoles, tape machines and racks of signal processing of every persuasion. Besides a limited number of larger spaces showing off speakers, the hotel's fourth and fifth floor rooms were allocated as individual demo rooms, making for some comfortable, personal spaces to show off gear and actually have a conversation in a (mostly) quiet environment.

NSCA had its own personality — back in its pre-InfoComm merger era, it was a tabletop show, where every exhibitor was limited to a 10x10-foot booth space with an 8-foot table, and unless you were against an outer wall, no part of your booth space could be taller than 54 inches in height. Of course, if you wanted to rock out, you had to rent an additional space for a demo room, but overall, the show

had a small, hometown kind of aura that was a perfect complement to the sound reinforcement industry. Besides, it was "our" show that reflected "our" business, without visual or spatial competition from video walls, digital displays and other distractions from audio.

### » Ch-Ch-Ch-Changes

Back in the 19th Century, British statesman Benjamin Disraeli was attributed to have said: "Change is inevitable. Change is constant." And that same philosophy applies both today and for the future. The NAMM show is a good example of that. Once mostly a massive summer show held in the Midwest to spotlight new band instruments right in time for music dealers to order inventory to cover the annual surge of sales and rentals of trumpets, clarinets, oboes, marching drums, etc. for the fall school season, NAMM eventually evolved with the times and became a West Coast show driven by the increasing interest in rock music. Electronic keyboards, drumsets, electric guitars/basses and amps were the thing, and that continues to this day.

Along the way, NAMM also helped drive the home/project studio revolution, and more recently, the organization's big winter show has embraced the entire pro audio community, offering educational programs with NARAS, AES, ESTA, TEC Tracks, Audinate (Dante training), PLASA, Pro Production at NAMM Live

(sponsored by PLSN and FRONT of HOUSE), the TECology Hall of Fame and more. Additionally, providing a home base for major industry events — including the TEC Awards and the Parnelli Awards — also helped lift NAMM into must-attend destination status for audio production and event pros.

Of course, there are some NAMM side effects that can cause one to either shake one's head or enjoy (depending on your viewpoint). These include the nonstop 130 dB droning of overamped bands in the Hilton lobby, or certain attendees who feel the need to test snare drums in Hall D or play their own version of "Smoke on the Water" (turned up to 11) in the guitar halls for eight hours straight. Thankfully, things were far saner in the new North Hall that houses two floors of pro audio, where ironically — despite being surround by sound gear — attendees could actually have business conversations without having to shout.

### » Timing is Everything

Another clear advantage that NAMM offers has to do with timing. For one, it is nice to have a shirtsleeve destination event in the middle of winter, but in terms of the live event industry, having a January tradeshow makes a lot of sense. First of all, coming after the holidays and before the touring and festivals kick off, January marks the slow season for sound companies — a perfect time to

plan for the year ahead and check out some new gear. Speaking of timing, January is also the month when churches are planning system upgrades (audio and video) before the busy Lenten and Easter seasons — traditionally a time of high attendance — so any new gear debuts at NAMM are right on time for that market.

It seems that the sound reinforcement industry might have finally found a home in perhaps the unlikeliest of places — the NAMM Show. Is it perfect? Not quite — given the crowds, the traffic, parking and hotel availability situation can get somewhat randy. Yet other than that, it's a close-to-ideal locale that sound and event pros can call home, especially when you're talking business while sitting by the pool at the Marriott, something that probably won't happen in Buffalo.

Got a comment? Send George an email to [george@timelesscom.com](mailto:george@timelesscom.com)



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## FOUND IN TRANSLATION

The National Theater of Japan is using Riedel systems, **Page 10**



## FELICE ANNO NUOVO!

Recco provided an Outline GTO system for NYE in Milan, **Page 10**



# INDUSTRY & GLOBAL NEWS



Rat Sound flew the L-Acoustics K1/K2/KS28 system.

## A Tribute to Chris Cornell

» **LOS ANGELES** — Held at the Forum in L.A. on Jan. 16, "I Am the Highway: A Tribute to Chris Cornell" was a five-hour fundraising concert celebrating the life and legacy of the late lead singer for Soundgarden, Audioslave, and Temple of the Dog. Rat Sound supplied all of the sound reinforcement for the night, including a full L-Acoustics K1/K2/KS28 PA plus five DiGiCo and two Avid mixing consoles and an Avid multi-track recording rig.

Along with members of the three bands, the evening included performances by Metallica, Foo Fighters, The Melvins and others. Hosted by Jimmy Kimmel, the show also featured guests including Jack Black, Brad Pitt, Brandi Carlile, Fiona Apple, Josh Homme, Miley Cyrus, Adam Levine, Chris Stapleton and Ziggy Marley. Cornell, who suffered from depression, took his life in May of 2017.

Rat Sound has a long history of working with Soundgarden, dating back to the band's tour with Danzig in 1990. "The event

presented some unique and complex challenges, which we enjoyed overcoming," noted Rat Sound account manager Tom Worley. Rat Sound spent three days at the venue and fielded 15 crewmembers to handle setup, on-site rehearsals and the show. "It was a special event for a good cause," said Worley, "and we were thrilled to be a part of it."

The L-Acoustics PA comprised, per side, 12 K1 arrays over six K2 for the main hangs and eight K1 over four K2 for the side hangs. Thirteen additional K2 per side provided coverage out to 270 degrees in the sold-out arena, which seats nearly 18,000. Rat Sound also flew nine KS28 subwoofers in a cardioid configuration per side, supplemented by another 20 KS28 subs on the floor. Eight ARCS II and eight Kara II cabinets provided front fill.

A stage thrust offered space for acoustic ensembles and soloists to perform while the backline was being changed over for the main bands on the turntable stage behind them, says Worley. "We had some L-Acoustics X15 HiQ wedges across the front of that

thrust that handled all of the acoustic acts," he said. Sidefill on each side of the main stage included two ARCS II and a pair of KS28 subs. "It's a nice configuration with a low profile, so the promoters liked it," Worley added.

Greg Nelson, longtime FOH mixer for Pearl Jam, who also mixed the 2016 Temple of the Dog reunion tour, manned a DiGiCo SD5 for full-length performances by Soundgarden and Temple of the Dog, with a second SD5 handling monitors for both bands. "We took a MADI split off the SD-Rack into an SD9 for guest artists," says Worley. "All the guest vocalists, and anyone that came up as a guest guitarist or instrumentalist, had a set of in-ears and a set of wedges running off the SD9."

DiGiCo SD12 consoles at FOH and the stage were used to mix the acoustic acts as well as the production elements, such as the host mic and video segments played between performances. One of the night's highlights was Ryan Adams performing

See CHRIS CORNELL, page 6

## Pro Production Sessions Provide NAMM Attendees with Ideas and Insights

» **ANAHEIM, CA** — For a second year, the Pro Production Sessions presented by FRONT of HOUSE, PLSN and Stage Directions magazines brought some of the leading names in live event production together to offer an in-depth look into project designs via a series of keynotes and single-speaker and panel presentations at the Anaheim Hilton.

"In our second year as being part of NAMM, it is clear that the opportunity to put on these sessions is a huge success," said Terry Lowe, FOH/PLSN/Stage Directions publisher and executive producer of the Parnelli Awards. "From Kevin Lyman to the top lighting, audio and video designers for the likes of U2, Taylor Swift, Fleetwood Mac,

Kevin Lyman shared his thoughts on festivals and touring.



and other top acts, their insights can really benefit all who attend the NAMM Show."

The 2019 lineup, once again moderated by Michael S. Eddy, Nook Schoenfeld and Debi Moen, among others, started off Jan. 24 with a discussion of new technol-

ogies and trends to watch out for at this year's NAMM event. Then Yvan Miron, this year's Parnelli Visionary Award recipient and founder of Stageline, led the series of "In Conversation With..." discussions, also offering his insights for sessions titled "Staging — Green and Safe." Then, "It Doesn't Get More Real Than This: Mortal Danger at Shows" featured the Event Safety Alliance's (ESA) Sue McGuirl and Shawn London, who was the sound engineer for Eagles of Death Metal at the Bataclan nightclub, in a session moderated by ESA VP Steven Adelman.

On Jan. 25, the Pro Production sessions began with a keynote discussion from Kevin Lyman, founder and producer of The

See PRO PRODUCTION, page 8

## Adamson Systems Engineering Names Marc Bertrand CEO

» **PORT PERRY, ON** — Adamson Systems Engineering named audio industry veteran Marc Bertrand as its chief executive officer (CEO). Bertrand will lead Adamson's global operations from its headquarters in Port Perry, Ontario, as company founder Brock Adamson, recipient of this year's Parnelli Audio Innovator award, assumes the role of chairman.

Bertrand formally joined Adamson in Nov. 2017 as managing director Americas after serving in an advisory

See ADAMSON SYSTEMS, page 8



Marc Bertrand

## EAW Co-Founder Kenton Forsythe Returns to Help Build the Future

» **WHITINSVILLE, MA** — Having celebrated its 40th birthday in 2018, Eastern Acoustic Works gave itself a special birthday present, with EAW president TJ Smith reaching out and convincing EAW co-founder and former vice president of strategic engineering Kenton Forsythe to rejoin the company.

Long known for his innovative designs, Forsythe's mid-1970s vintage BH215 dual 15-inch bass horn became the basis of some of EAW's earliest products.

"When we started EAW, we kept on going with some of the designs we had used at Forsythe Audio Systems," he noted. "We designed the CS-3 for Carlo Sound, an integration of the BH215 dual 15-in low-frequency horn with an MR102 12-inch mid-frequency horn and a Community BRH90 high-frequency horn in one big box. It probably was the first integrated, flyable touring rig."

See EAW, page 8

## Tenth "IT" Awards Honor Audio, Lighting, Video and Staging Products

» **ANAHEIM, CA** — The 18th Parnelli Awards also served as the 10th gala where Indispensable Technology (IT) Awards were bestowed honoring product innovation. FOH and PLSN readers gave products from L-Acoustics, Chauvet Professional, ROE Visual and Tyler Truss and the "IT" nod.

L-Acoustics' L-ISA system took top honors in audio. (More info at [plsn.me/IT-Audio](http://plsn.me/IT-Audio).) Chauvet Professional's Maverick MK Pyxis won in the Lighting category. (More info at [plsn.me/IT-Lighting](http://plsn.me/IT-Lighting).) For the Video category, ROE Creative Display's Black Marble LED Floor Panels took top honors. (More info at [plsn.me/IT-Video](http://plsn.me/IT-Video).) And for staging, readers gave Tyler Truss Systems' Centerline Truss the nod. (More info at [plsn.me/IT-Staging](http://plsn.me/IT-Staging).) Congrats to all the winners!



## Bryan Bradley Named President of Group One Limited

**FARMINGDALE, NY** — Group One Limited, the Long Island-based U.S. distributor for Avolites, DiGiCo, and other pro audio and lighting manufacturers, named Bryan Bradley president. The announcement came from Group One CEO Jack Kelly.

Bradley most recently served as the senior vice president and general manager of the Americas for Harman Professional Solutions. There, he managed the retail, live performance, large venue, hospitality and enterprise channels for JBL Professional, AKG, Crown, Lexicon, dbx, DigiTech, Soundcraft, Studer, AMX and Martin Lighting brands in North, Central and South America.

Bradley joined Harman in 2013, having previously served as COO of Alfred Music, the world's largest educational music publisher. Before then, he worked for music retailer Guitar Center, Inc., during which he held various management positions, including overseeing pro audio/recording merchandise, Guitar Center Professional marketing and technology product marketing. Bradley also served on Guitar Center's Strategic Planning Group, working on large-scale strategic initiatives and acquisitions for Guitar Center and its sub-

siaries, Musician's Friend and Music and Arts.

Prior to Guitar Center, Bradley was a songwriter/composer for TV and film, including a stint as the music director on *The Young and the Restless*. He currently serves on the NAMM Board and holds a BA from Colorado State University as well as an MBA from California Lutheran University.



Bryan Bradley

## Chris Cornell

continued from page 5

Cornell's "Dead Wishes" and Soundgarden's "Fell on Black Days" on acoustic guitar with several string players, including Don Was on acoustic bass, Worley noted.

The Melvins, who kicked off proceedings with a five-song set, ending with Soundgarden's "Spoonman," and Audioslave, with guests such as Foo Fighters' Dave Grohl, Metallica's Robert Trujillo, Geezer Butler of Black Sabbath, and Chris Chaney and Perry Ferrell of Jane's Addiction, played through an Avid Profile at FOH with a second Profile for monitors.

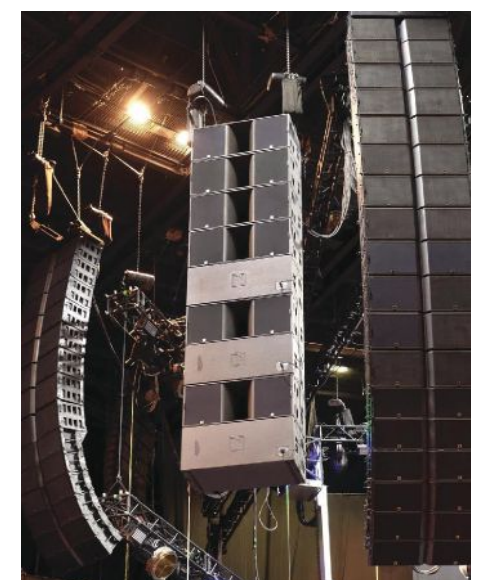
Worley managed signal routing across the complex system using Outline's Newton multi-source, multi-format audio processor and matrix mixer, which Rat Sound has recently adopted for festivals and similar large events. "We were looking for something that was bulletproof that sounds good and is very simple and easy to use," he says.

In all, the event made use of more than 100 wireless channels for microphones, backline and IEMs, some of them on shared frequencies over the course of the night, and including spare, tech, and production shout channels. "Jason Glass was our RF coordinator," says Worley. "We didn't have a single issue."


Rat Sound also archived audio for the entire concert, which encompassed a total of 42 songs. The company used Avid Venue S6L desks for the multitrack recording, said Worley, "Just for the usability with Pro Tools. We had four Avid Stage 64 I/O racks, which we landed beside each monitor position, and came out of everyone's splits, analog. We picked up the stage racks as we needed them and had a main and redundant AVB stream off each desk in a production room backstage."

Soundgarden brought the night to a close with an eight-song set that saw the likes of Peter Frampton, Taylor Momsen, Marcus Durrant, Tom Morello, Wayne Kramer, Taylor Hawkins, and Buzz Osbourne, among others, rotate in and out of the lineup. The concert was the first time that Soundgarden's surviving members — guitarist Kim Thayil, bass player Ben Shepherd, and drummer Matt Cameron — had performed together publicly since Cornell died while on tour with the band. Thayil and Shepherd gave Cornell an emotional final send-off with an intense, extended blast of feedback at the end of "Black Hole Sun" that hung in the air long after they had left the stage.

Proceeds from the concert were split between the Chris and Vicky Cornell Foundation, which was established by the singer and his wife to protect and provide for vulnerable children worldwide, and the Epidermolysis Bullosa Medical Research Foundation.



The main arrays included 12 K1 over six K2, with nine KS28 subs and eight K1 over four K2 for side hangs.



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# FOH Editor George Petersen Honored with NAMM “Believe in Music” Award

**ANAHEIM, CA** — George Petersen, editor of *FOH* and director and founder of the NAMM TECnology Hall of Fame, was honored with NAMM’s “Believe in Music” award on Jan. 26 during the NAMM 2019 show. NAMM CEO Joe Lamond presented the 2019 “Believe in Music Award” to Petersen at the NAMM Idea Center near the Anaheim Convention Center entrance.

The award honors those who have served as passionate advocates and innovators, working on the music industry’s behalf. During his career, Petersen, a noted author and veteran pro audio journalist, has written more than 2,500 articles on every aspect of audio and music production, as well as having penned 500 product reviews, five books (edited dozens more) and lectured extensively on audio production in five continents.

Besides being a lifelong musician/singer/songwriter who began performing professionally at age 13, Petersen also founded the first digital recording studio in the San Francisco area and operates a boutique record label.



George Petersen (center) was presented with the award by NAMM’s Dan Del Fiorentino (left) and Joe Lamond (right).

# In Memoriam: Michael “Mick” Million, 60

**PORTLAND, OR** — Michael “Mick” Million, longtime FOH engineer at the Ponderosa Lounge & Grill in Portland, OR, died Jan. 1 from organ failure. He was 60. Million got his start with Ear Systems Audio in Portland in 1977 and had been mixing FOH at the Ponderosa for the past decade. In between, he ran his own company and supported a long roster of national and regional acts and events.

Some of these included the Pendleton, OR Round-Up, Little People fundraisers and the Oregon International Air Show along with artists like Jeff Lorber, Kenny G, Sequel, Black ‘n Blue, Nu Shooz, Cool’r, Shock and Cross Country, among others.

Million was a well-known fixture in Oregon’s live music scene. “In Portland, if you mentioned “Big Mick,” no one would be

think about Metallica,” noted NTi Audio’s Ken Ruecker, adding that Million was an avid fisherman and outdoorsman, and is survived by his mother, Alice, and brother, Ron.

Million’s friends put together a memorial event dubbed the “Mick Million Music Festival,” featuring some of the many musicians he knew and worked with over the years. It was held Jan. 17 at 6 p.m. and hosted by the Ponderosa Lounge & Grill in Portland, OR.



Mick Million

## Pro Production continued from page 5

Warped Tour, which packed the room with a crowd that skewed toward younger NAMM attendees just starting their careers in live event production. (As with Lyman’s session last year, the Q&A extended from the scheduled timeframe and Lyman held court in the hallways outside.)

The program continued Jan. 25 with “In Conversation With...” sessions moderated by Micheal S. Eddy, starting with LD/production designers Butch Allen and Marc Brickman and video director Stefaan “Smasher” Desmedt followed by “Taking the Stage: The Rising Lighting Designers” moderated by Debi Moen and featuring panelists Nico Riot, Lauren Sego, Bobby Grey and Michael Smalley.

On Jan. 26, the In Conversations With... sessions continued with production and lighting designer Peter Morse, then Nook Schoenfeld interviewed tour manager (and Parnelli Lifetime Achievement Award recipient) Chris Adamson. Michael S. Eddy then hosted a panel discussion on creative teamwork featuring the insights of LD/production managers Butch Allen, Bryan Hartley, Peter Morse and Marc Brickman.

For “Getting the Show on the Road,” top production and tour manager Elliot Saltzman joined Chris Adamson and moderator Michael S. Eddy for a discussion on managing mega productions while keeping a handle on the smallest logistical decisions.

The sessions concluded Jan. 26 with an in-depth look at Trans Siberian Orchestra’s shows featuring panelists Bryan Hartley, Elliot Saltzman, Jeff Boguski and Burton Tenenbein, gleaned insights from this mega-production’s 20 years on the road.

PLSN editor Nook Schoenfeld noted that it might be easy enough to overlook, but one of the most remarkable aspects of this series of seminars is that they are offered at no charge to anyone with a NAMM badge. He expressed gratitude to all the panelists who offered their valuable time and insights just for the sake of “giving back” and keeping the industry on a sound footing going forward.

Publisher Terry Lowe also thanked NAMM for its support in making the Pro Production seminars possible. “We’re so grateful to provide access to this kind of real live industry talent to those just starting their careers in this business or thinking about it,” Lowe said.

## Adamson Systems continued from page 5

role. He came to Adamson from TC Group Americas, where he served as CEO from 2009 to 2016, overseeing brands including Tannoy, TC Electronic, Lab.gruppen, Lake and others. Prior to that, he worked at Tannoy North America for a decade, rising to managing director, a post he held for five years.

In his new role at Adamson, Bertrand plans to continue building the Adamson brand in the North American market while maintaining its strong presence in Europe and supporting its growing Asia-Pacific market position. “It’s a tremendous honor to be leading a company as respected and reputable as Ad-

amson — especially amidst an exciting time of growth and continued innovation,” said Bertrand.

“In his time with Adamson thus far, Marc has proven that his esteemed reputation in our industry is well-earned, and that his strengths as a leader complement our direction for the future,” said Brock Adamson.

“Our history of working together will make it easy to support him as he transitions into his new role,” added James Oliver, director of marketing and sales, who has worked with Bertrand both at Adamson and also, previously, at TC Group Americas.

## EAW continued from page 5

But it was EAW’s legendary KF850 that really put the loudspeaker manufacturer on the map. “The KF850 was an outgrowth of those previous designs,” said Forsythe. “It was a very good cabinet for its day and was time coherent throughout its full range. The KF850 helped us develop a lot of traction. It was the standard for tours for quite awhile, and it got us into the install world.”

Although Forsythe is not returning full time, he is back in his element. “I kind of reclaimed my role as the transducer guru. Our head of engineering, Geoff McKinnon, provides the leadership and vision. I collaborate with suppliers on component designs as well as new product development concepts, working with and under Geoff and director of product management Jeremy Forsythe.”

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Stratford Festival

Paramour

Frozen

Moulin Rouge

Waitress

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## National Theater of Japan Upgrades Its Comms Setup

**TOKYO** — The National Theater of Japan in Tokyo is using Riedel Bolero wireless and Artist wired intercom systems across its two performance halls — a 1,610-seat theater and a smaller 590-seat theater.

The Bolero wireless and Artist wired intercom systems were chosen to enable flexible communications with crystal-clear audio quality. Staff across the theater's technical department relies on the Riedel system to support the production of a wide range of traditional theatrical and musical performances.

"The wireless intercoms we've used over the past 10 years were unstable and susceptible to radio interference and noise, so we started looking for a more reliable intercom system with greater RF robustness," said Makoto Ishii, deputy manager of the theater technical department at the National Theater of Japan. "After evaluating various intercom products for ease of installation, sound quality, and stable performance, we chose to invest in Riedel's Artist and Bolero intercom systems."

"Since we began using the Bolero system, we have eliminated the noise and interference and used the wireless system's flexibility to make continuous improvements to our intercom setup," added Tatsuya Fujisawa, sound engineer at National Theater of Japan. "We've been pleased with new options the Bolero gives us, such as using our beltpack speakers as a two-way radio when that's a preferable alternative to using headsets."

Two Artist systems with integrated Bolero wireless intercoms ensure reliable communications in both halls, connecting technical staff with their master control rooms (MCRs). By choosing Bolero for its wireless intercom, the theater was able to reduce the number of antennas required, as well as the time and cost required to install them. The cost savings allowed for investment in an additional three beltback units, for a total of 13.

Five Bolero beltbacks are dedicated to



The venue is using Riedel's Bolero and Artist intercom systems. staff in each hall, and another three beltbacks are used by management staff in the MCR. Each beltback boasts six channels, and staff working in either hall also can take advantage of point-to-point lines to "call" the MCR directly rather than rely on a phone, as they had in the past. "The team at the National Theater of Japan is committed to using the best technology to support its live productions, and Bolero is proving to be a great fit," said Takako Konishi, sales manager at Riedel Communications Japan. "We are proud that our technology plays a vital role during the theater's renowned presentations of traditional Japanese performing arts."

Tasked with the preservation and promotion of Japan's classical performing arts, the National Theater of Japan stages a wide range of performances deeply rooted in Japanese folk culture, ranging from traditional dance and dramatic performances to Buddhist chants or puppet theaters. In order to make them more accessible to contemporary audiences, these performances are gently modernized while respectfully maintaining their traditional character. By choosing a flexible and scalable solution based on Riedel's flagship intercom systems, the National Theater of Japan has effectively streamlined and future-proofed its production processes.



## Milan Rocks in the New Year for 20,000 in the City's Main Square

**MILAN, Italy** — The annual concert and festivities staged in front of Milan cathedral to ring in the New Year drew a crowd of 20,000 to hear Francesco Gabbani and his band perform. The event also featured radio host Paolo Piva, comedian Dario Vergassola, ska band Bluebeaters and a DJ set.

Sacha Bozzo, head of show technologies at the event's rental company, Genoa, Italy-based Recco, credited system engineer Giancarlo "Jerry" Paladini and Outline's Giulio Gandini for their help in staging the event without delays, which "would have probably ended up blocking sightlines and escape routes."

The system needed to cover 7,800 spectators within a 3,800 square meter area and 12,200 more in an outer 6,100-square-meter area. Outline's OpenArray3D modeling software provided "several simulations" to "transform the best on paper into reality," Bozzo said.

Paladini detailed the setup. "For the main Outline rig, as well as twelve GTO C-12 and one GTO-DF per side, for spectators at each side of the (14-metre wide) stage, there were 12 Butterfly plus three Mantas. Twenty four DBS 18-2 subs were installed two-up on the ground, with six Mantas as front-fill speakers."

This setup, Paladini added, "was powered by 12 Powersoft X8 amplifiers, and an Outline Newton 16+8 was used as a matrix

managing the two DiGiCo consoles and as a FOH processor. On stage, there were two sidefill systems made up of three Mantas and a Subtech 218 each, powered by Outline T5 amplifiers. The monitor set-up was also Outline, with ten 10 Vegas 12 CX and a V15 system on drum-fill duty, as well as four Vegas 24 for comms between the FOH and monitor desks."

Marco Dal Lago, a freelance sound engineer with 25 years' experience on tours, helmed the FOH console. He had already worked with GTO systems on various occasions. "I've been able to use both the twin 12-inch and twin 15-inch systems, the latter with Gianna Nannini in Brescia and Prato," he said. "Through the years, I've also used other Outline systems — from Butterfly, when it came on the market, through those that followed, I had the possibility of using them all with various artistes and on numerous festivals."

Del Lago mixed a total of close to 50 channels and, although it was a reasonably standard pop-rock situation musically speaking, the sound was hard-hitting and tight. Dal Lago credited the Outline C-12 for its "timbre — really complete, over the entire sound spectrum," along with the dynamics and sensitivity with which the PA responds to "even the smallest adjustments, with immediately noticeable results." He also credited the Newton processor as "full of potential."

## Brazilian Super-Group Goes Global with Digital Consoles at FOH, Monitors

**RIO de JANEIRO, Brazil** — Five-time Grammy-winning recording engineer Dan Carvalho is as adept in the live arena as he is in the studio. During his recent time out on the road mixing FOH for Brazilian super-group, Tribalistas, he needed a flexible console that could not only deliver studio quality sound to the stage, but record the shows to the highest possible standard. After discovering the SSL L500 Plus, he wasted no time in getting hold of two for this tour — one for FOH, one for monitors — courtesy of Brazilian rental house, Gabisom.

Carvalho's relationship with Tribalistas goes back to when he was just starting out in the industry: at only 24, he helped the band with their first album recording; and 15 years later, got the call once more to record and co-produce album number two. That record is now released, and the fresh material has inspired Tribalistas to tour the first album for the first time ever.

"Because I'm a studio and a live guy, the L500 is the perfect fit for me and these Tribalistas shows, all of which we are recording," he explains. "The first time I saw what SSL was doing on the live side was at Lollapalooza,



Daniel Carvalho, FOH engineer for Tribalistas, with one of the SSL L500 consoles.

where I was doing sound for a smaller band, and the headliner was using an L500. At the time, I didn't know they even had a live console, but I stayed all day looking and listening to it, and it instantly became a dream of mine to work with one."

The Tribalistas tour has been huge, with the band filling out 45,000-capacity venues in Sao Paulo, and large arena runs in Rio, as well as a European leg before hitting US venues in February. According to Carvalho, having the L500 in tow throughout has literally been like taking a studio out on the road.

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# ON THE MOVE

**Adam Hall Group**, which formed Adam Hall North America in 2018, announced that it is expanding in the U.S. and Canada and merging with its distribution partner, Musical Distributors Group (MDG).

**AES** appointed Nadja Wallaszkovits as the association's president, effective Jan. 1, 2019. Wallaszkovits has been involved with the Audio Engineering Society over a 25-year span. AES also named Colleen Harper executive director. Harper comes to AES from the American Society for Parenteral and Enteral Nutrition (ASPEN), where she served as COO and interim CEO.



» Nadja Wallaszkovits



» Colleen Harper



» Markus Sinsel



» Val Gilbert



» Martijn Verkerk



» Brian McGovern

**Allen & Heath** named Markus Sinsel sales director. Sinsel joins Allen & Heath from its Germany, Spain and Great Britain distributor, Audio-Technica Europe, where he held the role of Allen & Heath brand manager. Allen & Heath also named Val Gilbert technical marketing manager. Based near London, Gilbert will support Allen & Heath's international distributor network, optimizing the levels of education and training support.



» Alfonso Martín

Allen & Heath also added two to its international installation team. Martijn Verkerk, installation product manager, is based in Europe, and Brian McGovern will oversee the company's commercial audio business development for North America. Separately, Sonos Libra, led by Alfonso Martin, was named Allen & Heath's exclusive distributor in Thailand.

**Allied ProTech** named Jeff Miranda sales manager. Miranda has 15 years of experience in the pro audio industry. He ran his own integration company and has also worked in various positions at TOA Electronics, Adobe systems and, most recently, at Pacific AV as VP of sales.



» Jeff Miranda

**DirectOut GmbH** named its co-founder, Claudio Becker-Foss, CTO and CEO. He takes over both positions from Stephan Flock, who will now focus on the research and development of FPGA-based interface and DSP design. Becker-Foss will be responsible for technical strategy.



» Claudio Becker-Foss

**EAW** named John Mills senior applications engineer. A 25-year industry veteran, Mills has commissioned and tuned more than 100 houses of worship and other installations and has mixed FOH at most major arenas and stadiums in North America for artists including Chris Tomlin, Lincoln Brewster, Shane and Shane, and Paul Baloche. He has also toured with Kenny Chesney as systems engineer.



» John Mills



» Bill Coons, Ed Kinsella, James Shearing and Scott Wrege

**EM Acoustics North America** has joined with rep firm **Pacific AV** to handle its products. Pictured here are, from left, Bill Coons, contact distribution (Canada); Ed Kinsella, director,

EM Acoustics; James Shearing, EM Acoustics North America and Scott Wrege, Pacific AV.

**Fulcrum Acoustic** appointed AudioPros as its exclusive sales representative for New England and Western New York.

**Guitar Center** announced the acquisition of Chicago and Bannockburn, IL-based audio & video integration firm Tunnel Vision Technology Inc., (TVTI). With the addition of TVTI, Guitar Center's business solutions group will now offer its system design and integration services to commercial and residential customers in the Midwest.

**Loud Audio** announced the addition of Mark Ureda to its board of directors. Ureda retired from Harman Professional in 2018, where he was senior VP, products and technology. He joined Harman in 2010 as president of JBL Professional and also served Harman Pro as CTO and VP, strategy. Ureda was also appointed as executive advisor to Biamp to assist with its global expansion strategy.



» Mark Ureda

**Martin Audio** announced that Case Kuehn has joined the company as president of Martin Audio North America LLC. Managing director Dom Harter noted that Kuehn will manage the day-to-day business strategy and core operational functions while the sales team headed by Lee Stein will continue to focus on sales and customer management. The company underwent an MBO last summer led by Harter and LDC, purchasing the company from Loud Audio.



» Case Kuehn

**OSA International** announced that Daniel Bellestri has joined its Integrated Solutions division. He is based in OSA's Wood Dale office, about 20 miles west of Chicago. He will be developing new business relationships and overseeing fixed and temporary A/V installations and renovations.



» Daniel Bellestri



» Cody Heimann, Ryan Stotts and Jim Van Winkle

**Professional Wireless Systems**, based in Orlando, FL, has expanded its operations to Nashville. Pictured here is the PWS-Nashville team, including Cody Heimann (left) and Ryan Stotts (center). PWS GM Jim Van Winkle (right) made the announcement.



The Brands on Stage team

**QSC** CEO Joe Pham has been named chairman of the 2019 AVIXA board of directors. QSC also announced an expanded role for Brands on Stage as the company's distribution partner for the Latin American markets.



» Joe Pham

**Radio Active Designs** announced the receipt of EU RF emissions-type acceptance, allowing its UV-1G wireless intercom system and support products to be sold in Europe in addition to their current customer bases of North America and Asia.

**Rational Acoustics**, developers of the widely used Smaart acoustic test and measurement software platform, has relocated and expanded its U.S. headquarters to 32 Crabtree Lane in Woodstock, CT.

**VUE Audiotechnik** announced a new distribution center in Solingen, Germany to serve markets in Germany, Austria and Switzerland, to be led by Frauke Jungbluth. Jungbluth comes to VUE from Deal 11 and Penn Elcom GmbH. VUE also named Michael Colon western regional sales director for the U.S. During his 27 years in the business, Colon served as national sales manager for Group One Ltd. and also held strategic sales leadership roles at Crest Audio and JBL Professional. Also, Orangeburg, NY-based Dynamic Productions recently joined VUE's line array partner network.

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# Product Hits of the 2019 NAMM Show

By George Petersen

From January 24 to 27, 2019, while much of the country was battered by winter storms, some 115,301 registered M.I., music products, pro audio and event technology professionals braved shirtsleeve weather that occasionally dipped into the mid-70s to attend the 2019 NAMM Show in Anaheim, CA. Besides 2,000 exhibiting member companies showing the latest products on the expo floors (including the expanded North Hall with two floors dedicated to pro audio), the event featured more than 400 educational sessions as well as “AES at NAMM” technology sessions, the Parnelli Awards, the NAMM TEC Awards and ample times to network and socialize.

But for most of us, the real action was on the show floors, where there was plenty of new technology action to see — and hear. Unlike past shows, few new consoles were found, although there was plenty of action in the realm of software and firmware tweaks that expand the power of existing models. All of this bodes well for end users, who are offered a cushion of “future proofing,” where their current desks can be brought to the latest spec via a simple update. Product development tends to run in cycles and this year, the focus seemed to be on new sound reinforcement loudspeaker designs. Here are a few new innovations that caught our attention.



Adamson



Avante AS8



BassBOSS MFLA



Bose Array Tool modeler



Celestion Axi2050

## Speakers: It's a Loud World, After All

NAMM has turned into a major showcase for new live speaker designs. While AES@NAMM was presenting ongoing programs such as the popular “Line Array Loudspeaker System Academy,” the Anaheim Convention Center’s Arena, demo rooms within the North Hall and various outdoor stages offered opportunities to hear systems firsthand. Here are just a few of the new systems.

**Adamson Systems Engineering** (adamsonsystems.com) began the year with a bang. Company founder Brock Adamson was granted the Parnelli Awards’ highest honor, named as Audio Innovator of 2019. But not willing to rest, the company debuted its CS7p intelligent point source enclosure, the world’s first family of mobile loudspeakers to feature onboard Class-D amplification, DSP, and Milan-ready (AVB) network endpoints. In addition to AVB and analog I/O, the CS7p has two 7” Kevlar neodymium woofers and a 3” compression driver on a rotatable 70 x 40 (H x V) waveguide.

**Avante** (avanteaudio.com) expanded its Achromic Series with the introduction of the AS8 800W powered portable column P.A. system that combines an active 8-inch neodymium subwoofer alongside two column units. One is loaded with six 2.75” neodymium drivers while the other serves as a spacer to lift the speaker column up to optimal height. Both feature Avante’s SAM (Secure Array Mount) system, allowing the columns to lock securely to the sub and to one another while also passing the audio signal from the sub up to the columns, removing the need for speaker cables.

**BassBOSS** (bassboss.com) launched MFLA, a powered, dual-12” and dual-1.4”-exit line array system featuring 3,000 watts of onboard amplification, comprehensive DSP and wide 120° horizontal dispersion. Rigging hardware features a simultaneous compression/tension mechanism so cabinets can be flown or ground stacked using the same simple setup, and there is no slack or shifting in the box alignment once the boxes are pinned.

**Bose Professional’s** (professional.bose.com) Bose Array Tool software is designed to simplify sound system design for AV pros, bringing variables — room size, budget constraints, loudspeaker model and placement — under control. System designers can quickly try out different loudspeaker models, placements and formations to match a venue’s needs. Version 1.0 supports designing with the Panaray MSA12X. Future versions will support more Bose Pro speaker models. Bose also showed acoustically-transparent slip-covers for its S1 Pro speakers, allowing these portable P.A. systems to blend with any décor.

**Celestion** (celestion.com) debuted its Axi2050 Axiperiodic Driver, a high-output MF/HF driver that offers ultra wideband (300 Hz to 20k Hz) that can eliminate the need for a midband crossover. The result of five years research, it’s a single, large-diameter, sculpted, annular diaphragm consisting of many curved, axiperiodically symmetrical elements that adds immense strength to a very thin and light sheet of titanium. Specs include a 2” exit throat, standard mounting and 150W RMS power handling for 140 dB max SPLs.

**d&b audiotechnik** (dbaudio.com) followed up its popular flagship GSL cardioid line arrays with the smaller sibling KSL Series — the “K” stands for “kleiner,” the German word for “smaller.” The KSL houses two 12” forward-facing neodymium woofers, two 8” side-firing drivers and a coaxial 8” cone mid driver with two 1.4” exit HF drivers on a wave-shaping device. Intended for larger club shows up through arena and stadium events, the new KSL models include the KSL 8 (80° horizontal dispersion) and KSL 12 (120°) line arrays and the KSLSUB. All share features of the SL lineage, including cardioid directivity, while also sharing a common sonic character for easy integration with larger GSL systems.

**DAS Audio’s** (dasaudio.com) ACTION-500 series consists of eight active and eight passive speakers — a 12” monitor, full-range systems consisting of 8”, 12”, 15” and 2 x 15” and three subwoofers. The series renovation of the series upgrades both design and physical features. All full-range systems in the ACTION series — including the ACTION-508/512/515 and 525 — have new, rotatable horns for improved frequency response while offering wider 90 x 60 dispersion. Active systems incorporate a 2-channel mixer and DSP presets for system optimization. Shipping begins Q2 2019.

**dBTechnologies** (dbtechnologies.com) is now shipping the flagship in its VIO series, the L212 three-way active line array module featuring twin neodymium 12” woofers. Mids and highs are handled by four 6.5” neodymium cone drivers and two 1.4” exit HF drivers on a long-throw waveguide. Each VIO L212 is driven by two Digipro G4 1,600W RMS Class-D amps and the pre-amplifier is equipped with a modular slot for expansion cards for RD-Net or Dante networking.

**eAcoustics** (eacoustics.com) came on strong with a full line of made-in-USA speakers including the Raven, a column array featuring two 12” B&C woofers and nine Faital Pro HF drivers providing up to 137 dB max SPL. Powersoft amplification provides 1,500 watts to the LF section and 750W to the HF section with integral DSP and Armonia USB control. Slated to debut later this year (some-

## Powersoft

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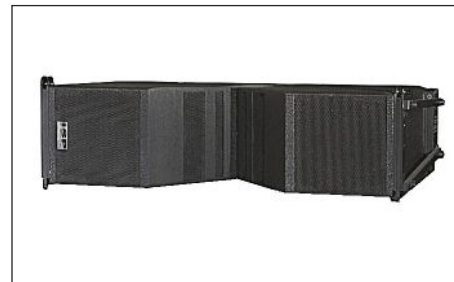
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eAcoustics Raven



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## SHOWREPORT



JBL's VerTec VT4889 made the TECnology Hall of Fame



Scott Sugden, L-Acoustics' product manager, USA & Canada, conducts an L-ISA demo.



Mackie DRM12A



Martin Audio WPL

time around the second quarter of 2019) is Dragon, a large-format dual-12 woofer line array to be offered in powered and unpowered versions.

**ISP Technologies'** (isptechnologies.com) GLA2806 is a 2-way line array design in an all-in-one-box system with eight 6.5" neo woofers and six 1.75" neo HF compression drivers, offering 48° x 100° (VxH) dispersion, smooth summation and mid-range clarity. The GLA2806's powered bi-amplified design employs ISP Technologies patented DAA Dynamic Adaptive Amplifier technology for Class-D style efficiency but with Class A/B sonic performance.

**JBL Professional** (jblpro.com) celebrated the success of its VTX line array systems with a TEC Award win for its VTX A12 line array, the announcement of a multi-million dollar order for its VTX A12 and A8 systems to Clearwing Productions and a NAMM TECnology Hall of Fame honor for the original VerTec VT4889 system, which started it all back in 2000.

**L-Acoustics** (l-acoustics.com) continued to promote L-ISA, its immersive audio solution, with ongoing demos during the show while taking the coveted audio Indispensable Technology honor at the 18th annual Parnelli Awards. Congrats!

**Mackie** (mackie.com) kicked off its 30th anniversary by announcing the shipping of its new flagship DRM professional powered loudspeakers, offering up 2,300W of power with onboard FIR DSP, color displays, and designed for rental and install applications. Available are the 1,600W 12" DRM212; 1,600W 15" DRM215; 2,300W 15" 3-way DRM315; 2,000W 12" DRM12A array; and 2,000W 18" DRM18S subwoofer — plus all models will be available in passive boxes.

**Martin Audio** (martin-audio.com) announced the Wavefront Precision Longbow (WPL), a new optimized line array that takes a scalable approach to external amplification. The new WPL is an all-horn loaded, dual-12 design with two 6.5" cone MF drivers and three 1" exit HF compression drivers for 90° horizontal dispersion. Applications include large-scale touring and installations.

**Meyer Sound's** (meyersound.com) new M-Noise test signal is designed to promote standardized measurement of a speaker system's max linear output. The mathematical formula for generating M-Noise was derived following extensive spectral analysis of a wide variety of music program material. In particular, the analysis measured the varying crest factors in music and how these measurements compared to pink noise. A free download of the 96 kHz WAV M-Noise file is available at m-noise.org.

**Nexo** (nexo-sa.com) unveiled the new flagship in its popular GEO line. Aimed primarily at the mid-size rental company, the GEO M12 weighs just under 75 pounds, and employs a premium 12" neodymium LF driver paired with 1.4" exit titanium diaphragm HF. Integral rigging hardware with no loose parts makes it easy to quickly configure ground stacks and line arrays of various scales. An install version and two different subs are also offered.

**PK Sound** (pksound.ca) was showing Trinity 10, the first mid-sized, three-dimensionally controlled sound system that is configured remotely, capable of focusing sound exactly where it is intended. This robotic line array equips users with control over the vertical (0 to 12 degrees) and horizontal (50 to 120 degrees) polar directivity of the entire array. The three-way (dual-10") design weighs 105 pounds and features 3,000W of onboard amplification with AES and analog inputs.

**PreSonus'** (presonus.com) CDL12 constant directivity loudspeaker (now shipping) combines the best of point source and line array designs for a focused pattern throughout the frequency response range. A companion CDL18 subwoofer is also offered. Both Dante-enabled, powered enclosures can be flown as a vertical array or combined for ground-stacked applications. The CDL12's integrated 500W + 500W Class-D power amp has onboard DSP presets and full remote system tuning access via PreSonus' Worx Control software.



Meyer M-Noise



Nexo GEO M1210



PK Sound Trinity 10



PreSonus CDL12

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QSC CP 12



RCF HDL 26-A



Verity Audio IWAC220P



VUE Audiotechnik e-Class



AKG DMS300



Audio Technica ATM350a



Audix R303



CAD Audio GXL2

**QSC** (qsc.com) was showing its new value-priced CP Series powered speakers for portable and installed use. Each features a 1,000-watt amplifier, advanced DSP and the ability to mix up to three input sources (mic/line, line and music playback device) at once. As part of a larger system, CP can be deployed on a speaker pole, as a floor monitor or as an instrument amp.

**RCF** (rcf.it) had numerous new products, including the HDL 26-A and HDL 28-A compact line arrays and three flyable complementary subwoofers (HDL 35-AS, HDL 36-AS, and HDL 38-AS) — all with RDNet, RCF's network control and monitoring system. Also new are two 15" point-source models (D-Line, HD 15-A, and HD 35-A) and the ultra-high powered (and RDNet controllable) 2,000-watt HDM 45-A. New in its TT+ line is TT 4-A Series column array with variable waveguides, innovative rigging, RDNet, a rotatable enclosure and swappable components.

**Verity Audio's** (verityaudio.fr) first active line array product, the IWAC220P, has dual-10" woofers and dual 1" exit, horn-loaded HF compression drivers. The plug-in amp module on the rear of the cabinet facilitates quick repair or replacement even when hanging in an array. Each driver has a separate DSP and amplifier (2 x 220W RMS and 2 x 800W RMS) for precise control of interaction between drivers. An innovative hardware design allows setting splay angles while the array is on the ground, to reduce set-up time. DSP control is via Verity V-NET USB network management system.

**VUE Audiotechnik** (vueaudio.com) showed its e-Class, including VUE e-352 and e-351 Nano speakers and the es-269 subwoofer along with the VUEDrive V242 Systems Engine. The VUEDrive V242 adds Dante networking and DSP along with two inputs and four 500-watt amplifier outputs/zones. All models have factory DSP presets, and application alignments of e-Class systems, with network remote control via SystemVUE software on iOS, Mac OS, and Windows along with analog, AES digital and Dante network audio inputs. The mini-sized sub combines two 6x9-inch drivers with VUE's Active Compliance Management (ACM) technology for punch rivaling 10" or dual-8" systems.

**Mics, Mics, Mics!**

You can never have enough mics. NAMM had plenty to offer.

**AKG** (akg.com) launched its DMS100 and DMS300 digital wireless systems, which offer 2.4 GHz operation with advanced security features, extended battery life and ease-of-use. The eight-channel DMS300 and four-channel DMS100 are available in two configurations: an AKG handheld microphone or an instrument- or headset-ready body pack. Shipping is slated for Q2 2019.

**Audio-Technica** (audio-technica.com) showed new systems for its ATM350a cardioid condenser instrument mic, including the AT8491S surface mount (great for accordion) and the AT8491G guitar mount. Each is offered as full system (ATM350a mic, mount and gooseneck), mount only or bundle with mount and gooseneck only. The ATM350a is suited for woodwinds, strings, brass, percussion, drums and piano and can handle 159 dB max SPLs. The AT8491S surface mount can be attached permanently using the accordion's grille screw and the included adhesive silicon pad, or it can be attached temporarily using included 3M Dual Lock pads.

**Audix** (audixusa.com) previewed the R303, its first ribbon mic design. Featuring a roadworthy embossed ribbon element, the mic handles 134 dB max SPLs and boasts a 40 Hz to 16 kHz frequency response. Street price is expected to be \$499 when it starts shipping in a couple months.

**CAD Audio's** GXL2 (cadaudio.com) wireless system operates in the 900 MHz band that's free of FCC regulatory issues. Other features include an LCD display for readability in low-lighting, advanced dipole antenna to increase operating distance and balanced XLR and 1/4" unbalanced outputs. Configurations include: GXL2-HH Dual Handheld; GXL2-HB Handheld and Bodypack; and GXL2-BB Dual Body Pack. Handheld transmitters feature the CADLive D38 capsule; bodypack systems include a CAD headworn mic and a guitar cable.

**Lauten Audio's** (lautenaudio.com) LS-208 (\$599/street) is a front-address, large-diaphragm cardioid condenser mic. With its off-axis rejection and internally shock mounted condenser element, the mic is well suited for capturing horns, percussion and guitar amps. It features independent, multi-stage, high and low-cut filters (50 and 120 Hz) and (8k and 10k Hz) and features a JFET transistor circuit with a transformer balanced output.

**Lewitt Audio** (le Witt-audio.com) launched the LCT 140 AIR, a small diaphragm condenser mic with two switchable sound characteristics. A HF boost switch provides a choice between an open and sparkling tone or a highly-realistic sound, as well as a -12 dB pad switch and selectable 80 Hz high pass filter. Street price is \$149 when it ships in April.

**Royer Labs'** (royerlabs.com) new dBooster (model R-DB20) inline signal booster/impedance buffer adds 12 or 20 dB of gain to passive ribbon and dynamic mics. The phantom-powered, Class-A design increases level without distortion or coloration and can drive either a standard microphone preamplifier or a digital interface directly, even over long cable runs. Street price is \$179 and it ships this month.

**Production Essentials!**

Every show, there are certain hip things we encounter, which may not grab the headlines in the trade press, but can definitely make your life easier in the live audio lane.

**Ashly Audio's** (ashly.com) mXa-1502 mixer amp brings four zones of mixing and DSP, plus 2 x 150W of power and programmable mic preamplifiers into a single, rackspace. DSP functions can be controlled via any browser-enabled device via Ashly software. It also provides multi-zone music distribution, paging, sound-masking and automatic mixing, and it can process 12 audio inputs into four different areas of a church, restaurant, school, office, warehouse complex or other facility.

**Powersoft's** (powersoft-audio.com) T Series mid-range amplifiers offer AES3 and Dante compatibility and fully integrated DSP at a price point that would appeal to the rental market. The Series includes 2- and 4-channel models available in 3,000 W and 6,000 W versions supporting channel powers from 750 W to 3,000 W in a single rack unit. Remote control and advanced signal processing is offered via Powersoft's ArmoniaPlus System Manager as well as onboard DSP.

**Sensaphonics'** (sensaphonics.com) dB Check Pro sound level analyzer displays actual in-ear SPLs of persons wearing IEMs or headphones. Answering the question "How loud is it in there?" it shows both accurate SPL levels and safe exposure times. Company president, audiologist Dr. Michael Santucci, described it as "like a speedometer for your ears, showing actual levels in real time, so you can make an informed choice of how loud to listen." It also functions as a basic sound level meter, with an onboard mic for measuring ambient room levels.

**Whirlwind's** (whirlwindaudio.com) ROK1/ROK2 are UL-listed devices that provide a convenient way to turn power on/off for remotely located equipment (amp racks, powered speakers, etc.) on 20-amp branch circuits that consumes power even while not in use. The ROK 1 is single-phase 120 VAC; the ROK2 is for single-phase 240 VAC or two legs of 208 VAC 3-phase. Both use a dry contact closure that energizes the relay coil with an internally generated 24 VDC control voltage and include a decorator-style faceplate for installation in standard electrical boxes.

**Wisycum** (wisycumusa.com) showed its compact MPR50-IEM Wideband Receiver designed for pro IEM applications. It features a wideband 232 MHz tuning range, mono or stereo MPX audio processing and 200 milliwatt headphone amps. Also included are a separate release/attack compander and an FM IFB mode with narrowband modulation to enhance noise immunity and coverage.



Lauten Audio LS-108



Lewitt Audio LCT 140 AIR



Royer Lab's dBooster



Ashly Audio's mXa-1502 Mixer Amp



Powersoft T Series



Sensaphonics dB Check Pro



Whirlwind ROK1



Wisycum MTK952

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\* Keyboard, mouse, rack not included

[waves.com/lv1-complete](http://waves.com/lv1-complete)

# FOH Presents Gold Star Product Awards at NAMM

At the NAMM show, along with all the state-of-the-art products being revealed for the first time, there was a full array of products that have proven themselves to be worthy of special recognition. While not being unveiled for the first time, they have proved themselves by gaining traction in the marketplace. Here without further ado are the editorial staff's picks for the first 20 products being honored with *FRONT of HOUSE's* Gold Star Awards.



**Adamson**

**Best Integration Loudspeakers**  
Adamson IS-Series  
Adamson Systems' James Oliver accepted the honor at NAMM 2019.



**Allen & Heath**

**Best Compact Console Series**  
Allen & Heath SQ Series  
Jeff Hawley accepts the Gold Star award at Allen & Heath's booth.



**Audio Technica**

**Most Versatile New Wireless**  
Audio-Technica 5000 Series  
Jim Lappin accepts the Gold Star award.



**Avid**

**Most Versatile Console System**  
Avid VENUE 56L Unified Platform  
Derk Hagedorn and Ryan John with the award at Avid's NAMM booth.



**d&b audiotechnik**

**Most Innovative New Line Array**  
d&b audiotechnik 65L12  
Marc Lopez accepts the award.



**dBTechnologies**

**Best New Line Array Family**  
dBTechnologies V10 Series  
Giovanni Barbieri accepts for dBTechnologies.



**DiGiCo**

**Most Innovative Console**  
DiGiCo Stealth Core 2  
Jack Kelly and James Gordon at the DiGiCo booth.



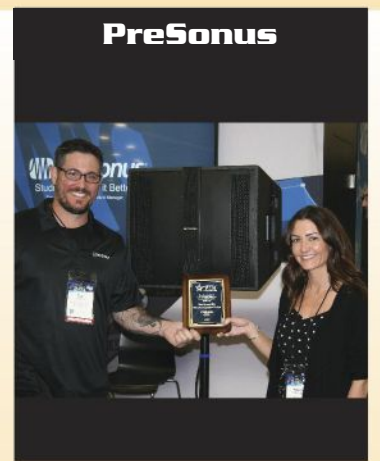
**L-Acoustics**

**Excellence in Immersive Tech.**  
L-Acoustics L-ISA  
With *FOH* editor George Petersen (center); Chris Shuler and Julie Blore Bizot



**Lectrosonics**

**Best New IEM Hardware**  
Lectrosonics Duet  
Lectrosonics' Kelly Fair and Max Francis accept.



**PreSonus**

**Most Innovative Mid-Sized Speaker Design**  
PreSonus CDL  
Tony Flammia and Meghan Schilling with Lectrosonics' award.



**QSC**

**Most Innovative Subwoofer**  
QSC KS212C  
Brad Zell, Gene Joly, David Fuller and Ray Van Straten accept.



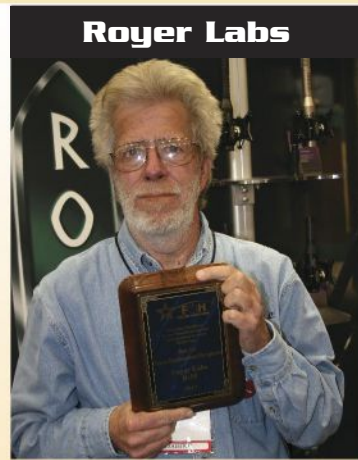
**RCF**

**Best New Mid-Size Line Array**  
RCF HDL30A  
Anthony Errigo accepts the Gold Star award for RCF.



**Riedel**

**Best Wireless Intercom**  
Riedel Communications Bolero  
Kevin Broce with the Gold Star award at Riedel's booth.



**Royer Labs**

**Best New Sound Reinforcement Microphone**  
Royer Labs R-10  
David Royer at Royer Labs' NAMM booth with the award.



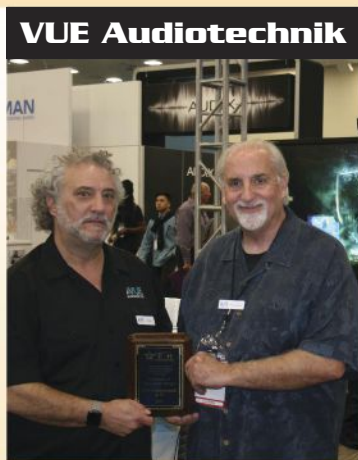
**Sennheiser**

**Best New Wireless Family**  
Sennheiser evolution g4  
Simon Holley and Erica Carlson accept the award at Sennheiser's booth.



**Shure**

**Innovation in Theater Wireless**  
Shure Axient Digital Micro Bodypack  
Rick Renner with the Gold Star award.



**VUE Audiotechnik**

**Excellence in Line Array Design**  
VUE Audiotechnik all2  
Ken Berger and Mike Adams accept.



**Waves**

**Excellence in New Console Design**  
Waves eMotion LV1  
Udi Henis with the award.



**Whirlwind**

**Coollest Solution for Case Customization**  
Whirlwind ColourBond Process  
Whirlwind's Will Young at the NAMM booth.

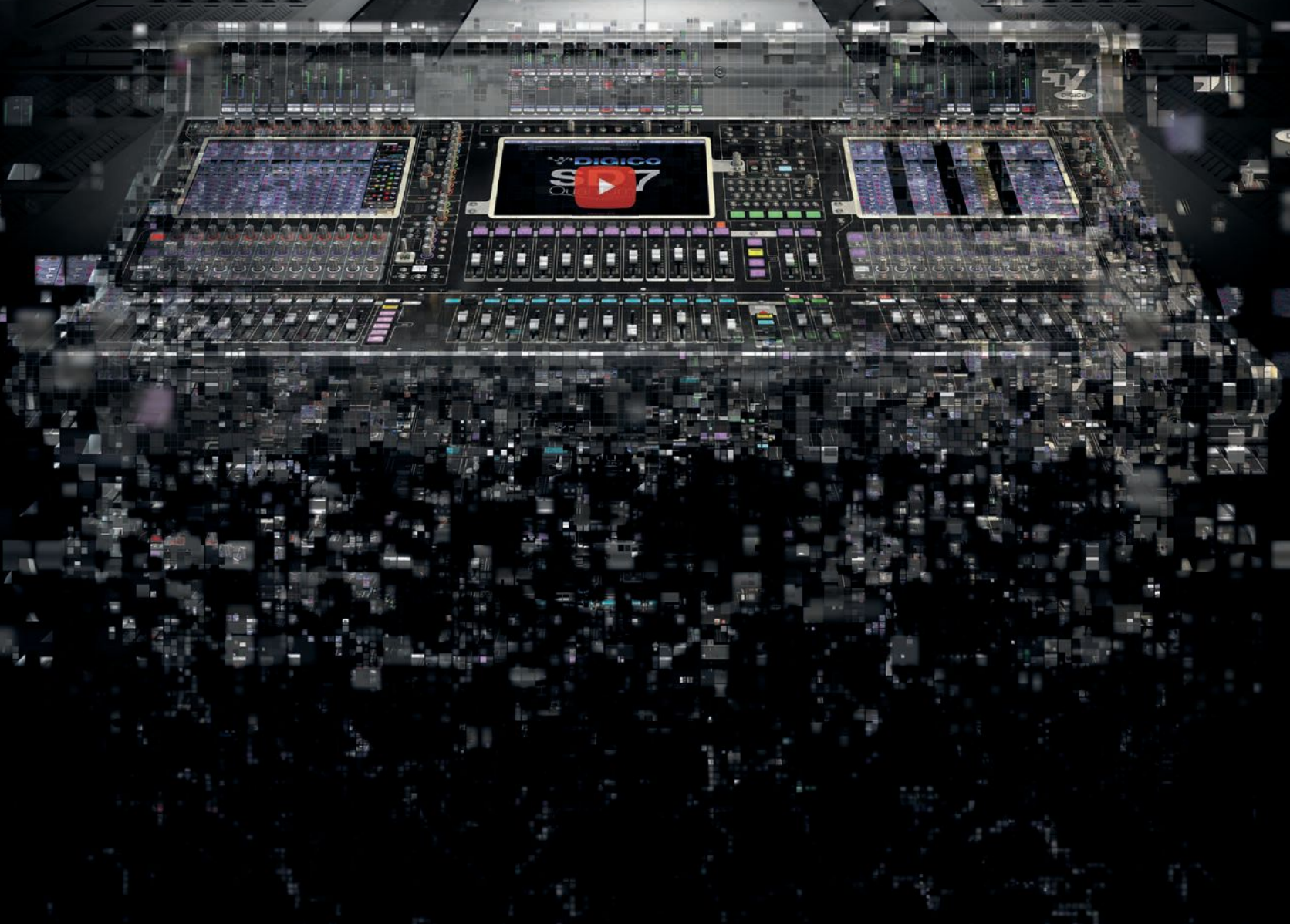


**Yamaha**

**Best New Large-Format Console**  
Yamaha Rivage PM7  
Yamaha's Sorrell Hanson with the award.

# SD7

Quantum  
engine



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 **DiGiCo**

## Brighton High School Homecoming Dance



Visionary Sound Productions once again provided this annual event with both sound and lighting support.

### Sound Co

Visionary Sound Productions

#### » Venue

Brighton High School, Brighton, MI

#### » Crew

**FOH Engineer:** Tony Obran

**Systems Engineer:** Aaron Barris, Ben Heavenrich

**System Techs:** Aaron Barris, Ben Heavenrich, Alan Devlin

#### » Gear

##### FOH

**Console:** Midas M32R

**Speakers:** (14) ISP Technologies HDL2208, (4) ISP Technologies XMAX 415, (2) ISP Technologies HDM112

**Power Distro:** Motion Labs, 200Amp Custom Distro

**Rigging:** CM Prostar, 1/4-ton motors

**Snake Assemblies:** S16 Stage Rack

##### MON

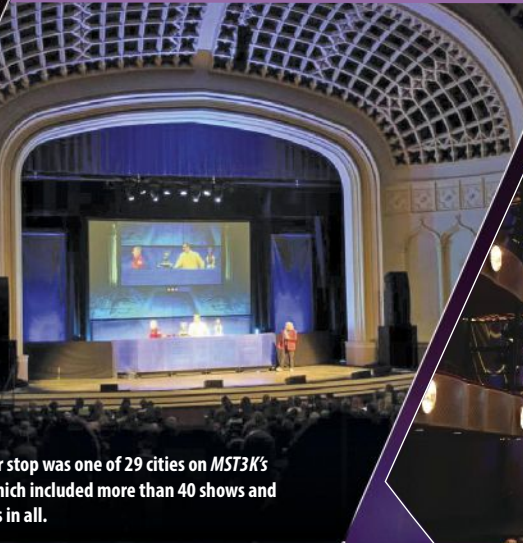
**Console:** Midas M32R

**Mics:** Shure ULX-D

#### » Event Details

Brighton High School's Homecoming Dance caps an annual homecoming weekend that includes a variety of events including parades, football games and other fall festivities. The dance itself attracts nearly 1,700 Students for an evening of fun and age-appropriate entertainment.

## Mystery Science Theater 3000 Live Tour



The Boulder, CO tour stop was one of 29 cities on MST3K's live tour last fall, which included more than 40 shows and 80 movie screenings in all.

### Sound Co

J. Werner Production, LLC

#### » Venue

University of Colorado/Macky Auditorium, Boulder, CO

#### » Crew

**FOH Engineer:** Ethan Chambers

**Systems Engineer:** Joe Werner

**Production Manager:** Joe Werner

**Tour Manager:** Chris Scanlon

#### » Gear

##### FOH

**Console:** Midas M32

**Speakers:** 12 RCF HDL 20-A, 4 RCF Sub 8006-AS, 4 RCF HDL 6-A (front fills)

**Power Distro:** Motion Labs

##### MON

**Speakers:** 4 JBL STX812, 3 Anchor AN1000x+

**Amps:** 1 Lab.gruppen FP 10000Q

**Mics:** Shure UHF-R Wireless Systems, Radial Direct Boxes

#### » Tour Notes

Marking 30 years since his show forever changed the way people make fun of movies, MST3K creator Joel Hodgson hit the road last fall bringing a live version of the show accompanied by MST3K: The Return host Jonah Rey (in character as Joel Robinson) and robots Tom Servo and Crow. The movies being spoofed: the 1988 Canadian sci-fi cult classic, *The Brain*, and the 1983 sword-swinging fantasy epic, *Deathstalker*.

## World of Business Ideas (WOBI)



### Sound Co

Metro Multimedia

#### » Venue

David H. Koch Theater at Lincoln Center, New York, NY

#### » Crew

**FOH Engineer:** John Silverman

**Systems Engineer:** Carlos Perez

**Production Manager:** Mark Cummings

**System Tech:** Carlos Perez

#### » Gear

##### FOH

**Console:** Yamaha CL5

**Speakers:** JBL VTX V20 and VTX S25 sub components (ground-stacked 3 over 2 per side). Four VTX V20 used as front fills.

**Amps:** 2X Track driven by Crown 4X3500 amplifiers

**Processing:** HiQnet and amplifier presets

**Power Distro:** Motion Labs

**Snake Assemblies:** Whirlwind

##### MON

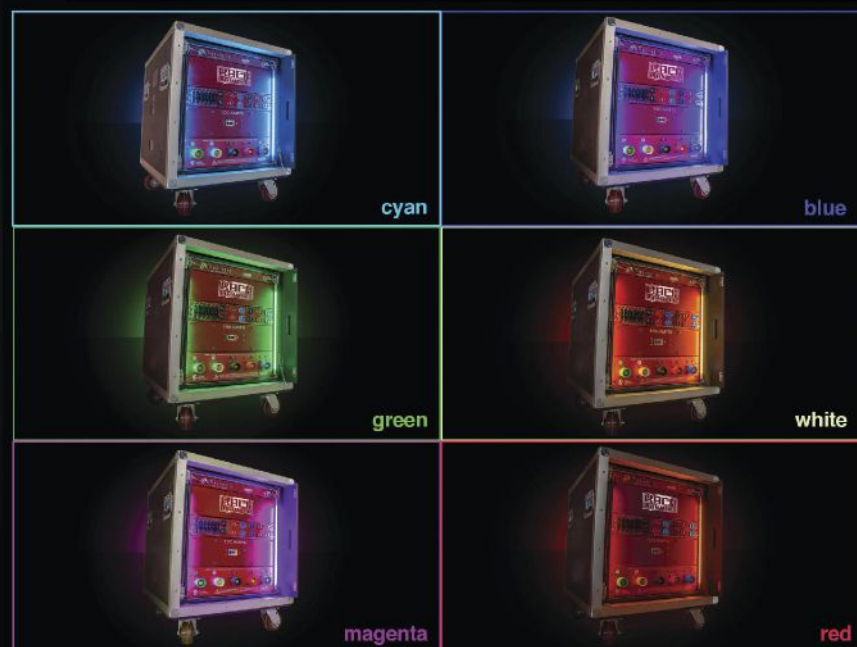
**Consoles:** Yamaha CL5

**Speakers:** Four JBL PRX715 (side fills)

**Mics:** 8 Shure Axient AD wireless combo microphones

#### » Event Details

The World Business Forum brought together business leaders for a variety of talks and presentations Nov. 14-15. Close to 2,500 attendees were expected to glean insights on entrepreneurship and business management, innovation and strategies.





## Roberto Carlos



The Brazil-born star performed hits from a career that extends from the 1950s to today in a show staged on Nov. 15, 2018.

### Sound Co

Logra

#### » Venue

Acrópolis Puebla, Puebla, Mexico

#### » Crew

**FOH Engineer:** Luis Izhinno  
**Monitor Engineer:** Andre Iriño  
**Systems Engineer:** Rafael Juarez  
**Production Manager:** Genival Barros  
**Tour Manager:** Marco Diosdado  
**System Techs:** Alejandro Magnus, Alejandro Woody, Victor Santeliz, Alberto "Man"

#### » Gear

**FOH**  
**Console:** DiGiCo SD7  
**Speakers:** (48) Meyer Sound Milo elements  
**Processing:** (2) Galileo 616 units  
**Power Distro:** Motion Labs  
**Rigging:** Bumper/Milo, Lodestar  
**Breakout Assemblies:** Motion Labs  
**Snake Assemblies:** Ramtech

#### MON

**Console:** Yamaha CL5  
**Speakers:** (8) JMF212, (2) JM1P  
**Processing:** (1) Galileo 616  
**Mics/Wireless:** (16) PSM1000, Shure R Series, AKG, DPA

#### » Event Details

Known as the King of Latin Music, Roberto Carlos, a.k.a. Roberto Carlos Braga, and collaborator Erasmo Carlos have written and performed hits all over the world, with total album sales exceeding the 120 million mark.

## Drew Jacobs



The artist's homecoming show in Port Huron, MI took place Nov. 24.

### Sound Co

Phoenix Productions

#### » Venue

McMorran Theater, Port Huron, MI

#### » Crew

**FOH Engineer:** Josh Sobeck  
**Monitor Engineer:** Kyle Tewell  
**Systems Engineer:** Conall O'Shea

#### » Gear

**FOH**  
**Console:** Midas PRO2  
**Speakers:** d&b audiotechnik V series, J-Infra subs, Y10P fills  
**Amps:** d&b D80  
**Processing:** Lake LM44  
**Plug-Ins:** Waves  
**Power Distro:** Motion Labs  
**Snake Assemblies:** CBI

#### MON

**Console:** Midas PRO2  
**Speakers:** d&b audiotechnik M4 wedges, Sennheiser G3 IEMs  
**Mics:** Telefunken, Shure, Sennheiser

#### » Event Details

Country music singer/songwriter Drew Jacobs, known for his song "Damn Good Night" and others, visited his hometown in Port Huron, MI for a show Nov. 24 just after Thanksgiving.

## PMO Christmas Show



The 85<sup>th</sup> annual holiday celebration featured hundreds of students performing five shows over two days.

### Sound Co

Hall of Music Productions

#### » Venue

Elliott Hall of Music, Purdue University, IN

#### » Crew

**FOH Engineer:** Dallas Johnson  
**Monitor/Systems Engineer:** Kenneth Max  
**Production Manager:** Scott Wheeler  
**System Techs:** Nathan McWilliams (RF Tech), Tyler Rogers, Alan Coxhead, Evan Applegate

#### » Gear

**FOH**  
**Console:** Yamaha PM7 Rivage; 2 RPiO 622 (111 ch)  
**Speakers:** (36) JBL VerTec 4888, (6) JBL VerTec 4880, (8) Meyer USW-1 (subs), (8) Meyer UPM-1 (front fills), (24) Meyer UPM-1 (balcony fills)  
**Amps:** 18 Crown MA 1200, 16 Crown MA 5002, 1 Lab.gruppen C20  
**Power Distro:** Motion Labs 200a  
**Breakout Assemblies:** (2) Yamaha RPiO622, (2) Cat6 Lines from Dante Card to Monitors for Rec  
**Snake Assemblies:** TWINLANE Fiber, Whirlwind W1, W4, Whirlwind 56ch Split, Whirlwind 48ch Split

#### MON

**Consoles:** Avid Venue SC48 (62ch); Yamaha LS9  
**Speakers:** (6) Meyer UPA-1 A, (4) RH TRX62H, (4) Mackie SRM 150, (6) QSC K-8, (4) QSC K-10, (4) IEM Mix w/Sennheiser 300 EW-G3, (8) Mackie SRM 450  
**Stage Mics:** (9) Scheops CMC 6 MK4, (3) Scheops CMC MK41, (2) AKG C414 XLS, (35ch) Wireless Shure ULX, (2ch) Wireless Shure UR4D, (2) Rode NT5, (2) Rode NTG2 (House/Ambient mics)

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# whirlwind

# 18<sup>th</sup> Annual Parnelli Awards

On Jan. 25, 2019, the 18<sup>th</sup> annual Parnelli Awards ceremony took place, returning to the Anaheim Hilton during the NAMM exhibition. Along with the three awards for career achievement honoring production manager Chris Adamson (Lifetime Achievement Award), staging innovator Yvan Miron (Visionary Award) and audio genius Brock Adamson (Audio Innovator Award), more than two dozen other awards were bestowed to the people, companies and products voted by *PLSN* and *FOH* magazine subscribers to be tops in their fields. It was a star-studded evening with video congrats for Chris Adamson coming in from Mick Fleetwood and Lenny Kravitz, and Alan Parsons stepping up to present some awards along with host Kenny Aronoff.

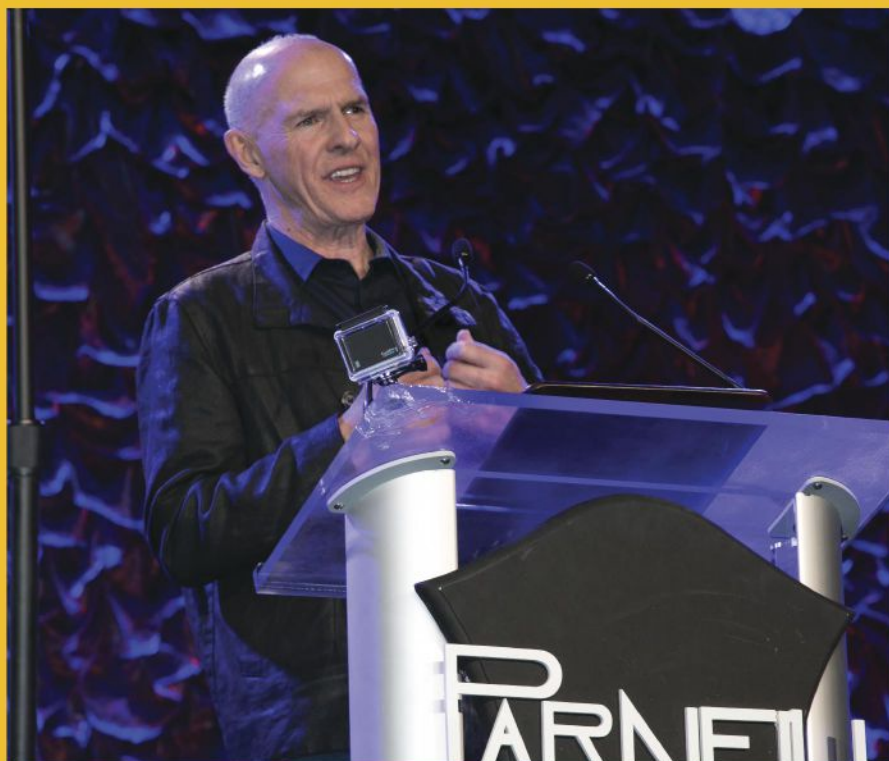
"This was probably the best Parnelli Awards ever," was a common refrain as the show wrapped up in the Hilton Pacific Ballroom. NAMM president/CEO Joe Lamond ran on stage before the show officially started and joked that he was "sneaking on stage before Terry Lowe knows I'm here." He went on to give a short, heartfelt talk about how the music industry is at the crossroads, and how important it is that the live production world is part of NAMM. Then, being one of at least four drummers that would take the stage this night, he made a drummer joke.



PHOTOS BY R. P. GETZ

Lifetime Achievement Award winner Chris Adamson

By Kevin M. Mitchell



Parnelli Visionary Award Honoree Yvan Miron



Parnelli Audio Innovator Brock Adamson, in an accident but on the mend, accepted via video.

## » Backbeats and Rim Shots

Host Kenny Aronoff, one of the world's greatest drummers (John Mellencamp, Bodeans, scores of others) set the show's tone with a high-energy opening where he shared a deep love of the live event industry people who make people like him look and sound good and shared some mostly NSFW stories from his rock star past. Mellencamp, notoriously difficult, once chided him for being friendly with the crew. "Don't talk to them — you're the rock star, they work for you." Aronoff said he told Mellencamp to "f\*\*\* off, because," pointing to audience, "you guys always have our backs and make us look and sound good." Aronoff went to say how he makes sure he talks to the stage managers, the sound engineers, and especially the camera people at every gig, because he's that meticulous — though joking about the latter, "if I'm friendly with the camera people, I find I get more screen time." Aronoff then gave out some awards including FOH engineer of the year to Kyle Hamilton, who works for Janet Jackson. Hamilton set the tone of acceptance speeches of the evening with a short, heartfelt acceptance speech.

## » Emotional Moments as Well

Lighting Designer Anne Militello then handed out some awards in what turned out to be one of the two big emotional moments of the evening. "I have to inform you that this year they changed the name of this category from just 'pyro' or whatever to 'Pyro/Special Effects.' I'm sure you know that fireworks were invented in China. In a new Trump administration trade agreement, we were able to get their pyrotechnics technology in exchange for [designer] Roy Bennett." But the winner was Strictly FX, who just a few days prior to the show experienced the sudden passing of cofounder Mark Grega. Strictly FX's David Kennedy was joined on stage by LD Marc Brickman to give an emotional acceptance speech, making it clear that the industry had lost a talented, beloved contributor.

Kiki Ebsen, who returned to the Parnellis as the featured pianist and vocalist, provided music during the dinner hour along with soulful accompaniment to the memorial reel honoring members of the road touring families who we've lost in the past year.

## » Distinguished Presenters

*FOH* editor/guitarist/drummer George Petersen showed up with his friend Alan Parsons, handing out some awards and cracking wise. *PLSN* editor/LD Nook Schoenfeld handed out some awards with fellow lighting maven Michelle Sarrat (who would win a Parnelli for Lighting Director of the Year).

Other presenters included Kevin Lyman of Vans Warped tour fame (and a former host himself) and past Parnelli winners Kevin "Tater" McCarthy, Sara Full, Butch Allen, Stefaan "Smasher" Desmedt, and Marty Hom. (Hom, a protégé of Parnelli cofounder Patrick Stansfield, would take home another Patrick Stansfield's Tour Manager of the Year as well.)

## » A Continuing Tradition

Since early 2002, the Parnelli Awards have honored backstage professionals, turning the spotlight from the live stage to the backstage creators, technicians and management professionals who work as a team to draw gasps of astonishment from audiences with their stagecraft and artistry, then pack everything up and safely recreate the spectacle at the next tour stop on the itinerary.

The awards show is the brainchild of the late production and tour manager Patrick Stansfield, along with Terry Lowe, publisher of *FRONT of HOUSE*, *PLSN* and *Stage Directions* magazines. And in addition to talent and innovation, the awards honor the "four H's" — Humanity, Humility, Honesty and Humor — embodied by the late production manager Rick "Parnelli" O'Brien, the namesake for the awards. There are also four Indispensable Technology (IT) Awards honoring product innovation in lighting, audio, video and staging.

Now in its 18<sup>th</sup> year, the awards gala is once again entirely dependent on the generosity of the Parnelli Awards sponsors. This year, for a third year in a row, Group One Ltd., which distributes Avolites, DTS and Elektralite, along with a variety of pro audio brands including DiGiCo in North America, returns in the top-tier Platinum spot.

The list of Gold Sponsors includes 4Wall Entertainment, Adamson Systems Engineering, Bandit Lites, Blizzard, Bose, dBTechnologies, G2 Structures, Gallagher Staging, Global Trend Productions, Harman Professional, Maryland Sound, Meyer Sound, Moo TV, NAMM Live!, NovaStar, Pyrotek Special

continued on page 26

# And the Winners Are...

## Top Honors

**Lifetime Achievement Award:**  
Chris Adamson  
**Visionary Award:** Yvan Miron  
**Audio Innovator Award:** Brock Adamson

## Sound

**Sound Company of the Year:**  
Clair Global  
**FOH Mixer of the Year:** Kyle Hamilton  
**Monitor Mixer of the Year:** Tony Luna  
**Audio System Tech of the Year:**  
Taylor Nyquist  
**Hometown Hero Sound Co of the Year:**  
Brown Note Productions  
**Indispensable Technology/Audio:**  
L-Acoustics/L-ISA Immersive Audio System

## Lighting

**Lighting Company of the Year:**  
Bandit Lites  
**Lighting Designer of the Year:**  
Bryan Hartley  
**Lighting Director of the Year:**  
Michelle Sarrat  
**Hometown Hero Lighting Company:**  
RZI Lighting  
**Indispensable Technology/Lighting:**  
Chauvet Professional/Maverick MK Pyxis

## Video

**Video Production Company:** Solotech  
**Video Director of the Year:** Josh Adams  
**Indispensable Technology/Video:** ROE Visual/Black Marble LED Floor Panels

## Sets, Staging, Rigging, FX

**Set/Scenic Designer of the Year:**  
Tamlyn Wright  
**Staging Company of the Year:**  
All Access Staging  
**Rigging Company of the Year:**  
Atlanta Rigging Systems  
**Set Construction Company of the Year:** TAIT  
**Pyro/Special Effects Company of the Year:** Strictly FX  
**Indispensable Technology/Staging:**  
Tyler Truss Systems/Centerline Truss

## Touring/Production

**Patrick Stansfield Tour Manager of the Year:** Marty Hom  
**Patrick Stansfield Production Manager of the Year:** Mikie Weiss  
**Coach Company of the Year:**  
Hemphill Brothers  
**Trucking Company of the Year:**  
Upstaging  
**Freight Forwarding Company of the Year:** Rock-It Cargo



FOH Mixer of the Year Kyle Hamilton



Monitor Mixer Tony Luna, via video



George with Ryan and Sara Knutson



Taylor Nyquist and Alan Parsons



L-Acoustics' Sherif El Barbari



George Petersen and Alan Parsons



Terry Lowe and Kenny Aronoff



Kenny kept the rimshots coming



Solotech's Richard Lachance



Presenter Kevin "Tater" McCarthy



PLSN's Nook with Michelle Sarrat



Scenic designer Tamlyn Wright

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# PARNELLI AWARDS



All Access Staging's Graham and Clive Forrester with Bob Hughes

continued from page 24

Effects, Rock-It Cargo, Screenworks/NEP, Solotech, Sound Image, Stageline, Strictly FX, Ultratec Special Effects and VUE Audiotechnik. The list of Silver Sponsors includes ACT Lighting, CryoFX, Elation, Hemphill Brothers, On Tour Logistics and See Factor.

## » A Memorable Evening

While keeping to schedule, the evening packed in so many memorable moments, packing in rapid-fire jokes and tributes to the career honorees with touching and funny videos. Chris Adamson closed out the evening on another emotional note, bringing his wife and son to the stage. And when it was all over, there was one more tribute, to the awards program itself.

"We are so incredibly proud to have the Parnelli Awards at NAMM," said Lamond, who many years ago was a touring pro himself, supporting Todd Rundgren on the road. "I know firsthand that the demands and pressures of being on the road can be immense, sometimes requiring cyborg like efficiency, making for some tough exteriors. But when honored for their contributions, reflecting on friends and mentors, the emotions flow, and the real humanity emerges. These are the truly priceless Parnelli moments."

"The show could not have gone better, and I thank my team, especially the TPI people who pulled off a flawless, fast-paced event," Lowe said, also crediting Access Event Solutions, Atomic and Green Hippo for their support as production partners. Along with the cocktail hour and hors d'oeuvres, provided with support from Chauvet Professional and TLS Productions, "the PyroTek-sponsored after party was a huge success, with many old and new friends sticking around for hours, networking, and have a great time. And somehow," he added, "next year will be better."



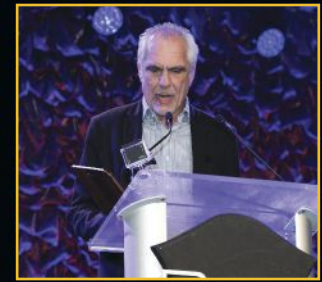
Tyler Truss' Jason Tello



Jason Adams from Atlanta Rigging



Guest artist Kiki Ebsen performed



Tait's Ted Moore



NAMM president/CEO Joe Lamond



David Kennedy and Marc Brickman



Tour manager Marty Hom



PM Mikie Weiss, via video



Presenter Kevin Lyman



Joey from Hemphill Brothers



Upstaging's Evan and Chanon



Rock-it Cargo's Annabel and Jay



Presenter Sara Full



ROE Visual's Frank Montero



Presenter Anne Millitello



Terry Lowe thanks the sponsors

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**Kyle Hamilton**

FOH Engineer, Janet Jackson SOTW Tour 2018  
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# ELTON JOHN

## “Farewell Yellow Brick Road” Tour

Photos & Text by Steve Jennings



With over 300 dates, Elton John is celebrating a career of five decades in the music industry. With so many hit songs, his selection is sure to please fans seeing him for the very last time. His six-piece band includes long-time members Nigel Olsson (drums), Ray Cooper (percussion) and musical director Davey Johnstone (guitars). We spoke with the audio team — FOH engineer Matt Herr, monitor engineer Alan Richardson and systems engineer Nick Giameos.

FOH engineer Matt Herr was using a PM5000 before switching over late last year to the Yamaha Rivage PM10. He was totally analog and thought that it would be a great time to change, which he did with his whole FOH rig for the Farewell tour — EFX, console, everything.

### » FOH Impressions

Matt Herr says the PM10 is simply fantastic. “It’s super intuitive, and I really like the layout. It’s very easy to navigate on. The Silk feature is really great as well. I use it on just about everything. There’s just such great separation in the mix and that’s something that my 5K didn’t have.” He is currently up to 81 inputs including his EFX returns and audio and video playback. For outputs, he’s sending six stereo feeds to the P.A. to be distributed throughout the amp racks at three per side. As far as plug-ins go, Herr doesn’t use very many. “I use the Portico 5043 on all of the vocals and on Davey’s acoustic guitar. It’s a really great sounding compressor that you can use on just about anything. The other plug-in compressor I use is the Yamaha Opt-2A on Matt Bissonette’s bass. I love it — it makes the bass sound punchy and fat without getting in the way of the kick or the bottom-end of the piano.” EFX wise, Herr uses the Eventide H3000 Harmonizer on the background vocals to help thicken them up a bit. The rest of the EFX he uses are outboard items. “I was using the Eventide Eclipse for years and years, but this one has the sound that I use and it works great.”

A 100-percent live show — without any backing tracks — makes the gig all that more impressive, notes Herr. “The same songs are played nightly, just not played the same way. That can be challenging to mix, because you’re always anticipating what’s next. It’s really easy to get his vocal to stand out front in the mix because of his strong voice. The toughest part is dealing with the bleed from his monitors. His monitors are notoriously loud! But he has great mic technique and is always right on the mic, so the bleed only comes when he’s leaning away from the mic at times.”

Outboard gear includes three Bricasti M7’s — one for drums and percussion, one for vocals and one for instrumentation. Herr prefers to use the outboard EFX because he feels that they have more depth and a wider spread to them. “I just love the way you can adjust the verb decay easily night-to-night, room-to-room. Some rooms can handle longer verbs than others. That helps in making Elton’s vocal very big when

there’s the space for it. I also have two Lake LM44’s. We use one for in house delays and hearing impaired feeds if need be. I’ve always kept two in my rack for EQ just in case we get the call that we’re doing a private gig somewhere with a different P.A. Then there are two TASCAM SS-CDRs — one for walk-in music and the other to start and end the show. We have a piece of recorded music that Davey did in the studio as an intro at the top of the show,” Herr adds.

“The most important thing about mixing Elton is understanding the spatial relation in the music. How they play together, how the band is always filling the open space with tasty guitar riffs and drum and percussion fills. Feeling it, and being able to add those subtle things in the mix to make it very musical. Then on top of that is adding the reverbs on the drums and vocals at points to create yet another feeling of space and sheer size. Then understanding the songs themselves, using the slower tempo songs that gradually get bigger to an effect as well. Volume for effect, so to speak.”

Herr has done many memorable gigs with Elton. “In my 15 years with him, we’ve averaged close to 100 shows a year, sometimes more. We often played in places that were not the usual cities to play. That was special to me, because I’ll never get back to some of those places. It was a very unique touring schedule — to say the least! And to do it with the same core crew is something that I’ll always remember as well. We’ve become so close, it’s really like family.”

### » The System

Clair Global is the sound company for the tour, notes systems engineer Nick Giameos. “The Cohesion 12 loudspeaker system represents the next generation of versatile, reference quality concert loudspeakers, with an industry-leading cabinet design and construction with advanced technology transducers, resulting in higher power, lighter weight, and extremely accurate pattern control. The system delivers powerful, smooth audio to every seat, while also maximizing operational efficiency.”

The system includes 66 Cohesion 12 speaker enclosures with 16 used as mains/side and 16 for side hangs/side, along with 24 Cohesion 10 enclosures (12 rear hangs per side. Behind the main hangs are six Cohesion Series CP-218 self-powered flown subwoofers. “These subs represent the latest in a new generation of Clair ultra high-output subwoofers. The dual-18 CP-218 subs have an integrated 9,000W amplifier.” Floor subs are also CP-218s, with three per side.

The Cohesion top speakers are powered by 54 Lab.gruppen PLM 20000Q and PLM 20K44 amplifiers and a total of six Lake LM44 processors. The system runs on proprietary Clair Lake iO software for system management, along with Smart Live V8 for time alignment. “I use EASE Focus 3 for acoustic simulation and for 3D modeling of the Cohesion line arrays,”

adds Giameos. “Clair supplies me with a Venue database, and I can insert my speaker system configuration and optimize the inter-box speaker enclosure angles for each specific venue. Elton uses two Clair 12am wedges for vocals and two 212am wedges for piano and instruments.”

Giameos worked for JPJ Audio, formerly Jands Production Services, for 24 years. (Clair Global bought a controlling interest in JPJ Audio in late 2015.) Clair and Jands have had a long-standing relationship in Australia. “I have worked with all the leading brands of speaker manufacturers,” he notes, “and the Clair Cohesion series goes up, sounds great and comes down quicker than any other speaker brand. The Cohesion is a great product, and I’m working with one of the greatest artists of all time and touring the world with my mate Matt Herr. The band is sounding great, and the crowds have been awesome. It’s a great result for a kid from a small country town in rural NSW called Orange.”

### » Monitorworld

For monitor engineer Alan Richardson, his mixing console is the SAC system from RML Labs. “It is a software-driven console that I’ve fallen in love with, and use the Mackie MCU Pro as my control surface. It integrates flawlessly, and I love the feel of the long throw faders. It mirrors my presets so when I hit an assignment button, my fader banks go right where I need them.”

When the discussions about the Farewell Tour began, one thing management wanted to do was to update the audio archiving system. “We had been archiving on a small Pro Tools system, but it was decided to go full multi-track,” Richardson says. “After some research, I decided to go with a system utilizing SAW Studio for recording. What intrigued me the most was the potential of adding SAC to be able to use the same rack as my monitor desk. The developer of both programs, Bob Lentini, has been a good friend of mine for many years, and he gave me a full demo of the system and its capabilities. I loved my Yamaha PM1D, but I knew the time was coming that I needed to make a change. The first rack we built was used solely for recording, while I still used the 1D for monitors. Once we had it on the road with us for a year or so, I decided it was time to make the switch. Having the luxury of being able to utilize the multi-track recordings from a year’s worth of shows enabled me to really get comfortable with a completely new way of doing things. I really didn’t have any issues with the change and was blessed to have full access to Bob’s knowledge and tutoring.”

With a three-week run in Las Vegas (where SAW Software is based) Richardson decided that would be the best time to make the change. “Having the ability to have the musicians come to the showroom individually and do a virtual sound check with me made the transition seamless. I moved the



Setup of Elton's Yamaha grand piano and four wedges — he likes it loud!



System engineer Nick Giameos (left) and FOH engineer Matt Herr



Monitor engineer Alan Richardson



John Mahon's massive percussion rig

players over to the new system one at a time until I had the full band on it. The guys were blown away by how good it sounded, and soon we were off and running."

So far, Richardson has been very impressed with the change. "I've been using it for four years now, and it's made life so much easier. The footprint is really small compared to what I used before, and the capabilities are mind-blowing. It's basically 25 completely separate consoles. Each member of the band gets their own desk (not physical) that can utilize separate EQ, gates, limiters and plug-ins. Nothing affects anyone else. No more splitting channels, where one guy gets a limiter and the other guy doesn't. An additional benefit has been the fact that we are basically traveling around the world with a full recording studio. Several times while in Las Vegas, Elton and the band would come to the showroom to do some recordings for various things. They loved it because they didn't have to trek to a studio, and their monitoring systems were the same as what they would use for shows. I would then just copy the WAV files and send them off to whatever studio was going to mix them down. We've since built more racks so we now have four systems that bounce around the world."

Richardson has been mixing Elton's monitors for 23 years. He says the technology has changed, but the job description hasn't. "Make Elton's monitors *loud!* He's been doing this for so long, and he knows exactly what he wants. As long as I achieve that, he doesn't really care what I use. I will say though, he likes looking down and seeing his good ol' Clair monitors. A couple of years ago, we were doing a charity show at Elton's house outside of London. It was just him at the piano, with no band, so things were pretty relaxed. He called for Matt and I to come to his kitchen for coffee with him. While we were chatting, Billie Jean King came into the kitchen and sat with us. She asked Elton if he ever did sound checks. His reply was, 'I don't ever need to, because Alan and Matt are always here.' That was a great compliment."

#### » Mic Selections

Elton and the band members' vocal mics — with the exception of drummer Nigel Olsson — are all Audio-Technica AE6100. "It's a close proximity mic that gives us some extra cancellation. That's proves helpful with the volume of Elton's wedges. Elton and Ray Cooper are the only ones using wedges. Everyone else uses in-ear systems or headphones."

Davey Johnstone's guitar amps are Hughes and Kettner. "We mic them using Sennheiser 609s that are draped in front of the amp behind the baffles. The California Blond amp is used for the acoustic guitar. We use a DI for acoustic, so the amp is really only there in case something happens with Davey's in-ear mix."

Nigel Olsson's drum kit is miked with Shure SM57s for snare, Shure Beta 52 for kick and Sennheiser E604s for toms. AKG 414s for overheads and AKG 460s for ride cymbal and hi-hat. Nigel's vocal mic is a Sennheiser E825 Artist Series.

Percussionist Ray Cooper mics are good ol' reliable ones, notes Richardson — Sennheiser 421s for the tympani and roto toms, Shure SM56s for congas, Shure SM58 for tambourine, AKG 414s for overheads and bells and AKG 460s for chimes. John Mahon's percussion is pretty standard as well, with a selection of Shure SM56s, AKG 414s and AKG 460s.

#### » Big Show, Big Tour, Yet a Family Feel

"Needless to say, this is a much larger tour than we've been used to doing over the years. Larger set, larger crew. Nineteen trucks compared to the six we were using before. The added crew members have been great and integrated right into our little family. Everybody gets along really well, which is nice on a tour this size. Knowing this will be Elton's last tour has added a new dimension to everything. The crowds seem more excited and appreciative and it doesn't go unnoticed. We have three years to go on this and then we'll go our separate ways, but I'm going to enjoy the ride while we're on it!" **FOH**

## ELTON JOHN

### AUDIO CREW

**Sound Company:** Clair Global

**FOH Engineer:** Matt Herr

**Systems Engineer:** Nick Giameos

**Monitor Engineer:** Alan Richardson

**Audio Techs:** Rolf Gerling, Simon Matthews

**Piano Tech & Tuner:** Dale Sticha

**Guitar & Bass Tech:** Rick Salazar

**Drum & Percussion Techs:** Chris Sobchack,

Simon Grocott

**Keyboard Tech:** Tony Smith

### P.A. GEAR

**Mains:** (32) Clair Cohesion 12 — 16/side

**Side Hangs:** (32) Clair Cohesion 12 — 16/side

**Rear Hangs:** (24) Cohesion 10 — 12/side

**Subs:** (18) CP-218, 12/flown, 6 ground-stacked

**Amps:** (54) Lab.gruppen PLM 20000Q and PLM 20K44

### FOH GEAR

**FOH Console:** Yamaha Rivage PM-10

**Outboard Gear:** (3) Bricasti M7s, (2) Lake LM44s.

**Drum Submixer:** Soundcraft GB8

### MON GEAR

**Monitor Console:** RML Labs Software Audio Console

**Monitors (Elton):** (2) Clair 12am wedges, (2) 212am wedges

**Mics:** Audio-Technica AE6100 (band vocals), Sennheiser E825 (Nigel vox); AKG 414s, AKG 460s; Sennheiser 609s, E604s, MD421s; Shure SM56s, SM57s, SM58s, Beta 52.

# House of Worship Projects

## A Look at Some Recent Audio Upgrades

By Thomas S. Friedman

No matter what faith or style of service, all churches share a common goal — that of spreading the message. Some have a greater emphasis on spoken word; others rely more on music in any variety of styles, whether it be folk, liturgical, gospel or flat-out rock 'n' roll. But these days, one thing that is common to all houses of worship is a need for a sound system that provides clarity to all worshippers.

With that in mind, we present some recent installation projects, with both whole system and incremental upgrades. Each of these took a different route in their approach, proving there are numerous solutions to any audio problem — large or small — for any sanctuary.

### Greek Orthodox Church of the Holy Cross, Belmont, CA

Since its construction and dedication in 1964, the Byzantine-style sanctuary of the Greek Orthodox Church of the Holy Cross has graced the city of Belmont, CA. The church's cruciform design features a center dome, surrounded by four half-domes, all with hard surfaces, which focus sound in a way that works very well for choir, organ, and chanting.

Spoken-word intelligibility is another matter, however. "Most of the Orthodox liturgy is chanted," notes parishioner Jim Smith. "There's a lot of music, and that's usually not a problem. But there are times during the service where Father speaks to the congregation, and nobody could understand what he was saying."

"Every Sunday people were telling me that they couldn't understand what I was saying in the sermon," confirms Reverend Father Peter Salmas, who has served as pastor since 1988. "We did a lot of different things to try to improve the sound, and although the volume went up, the intelligibility did not change."

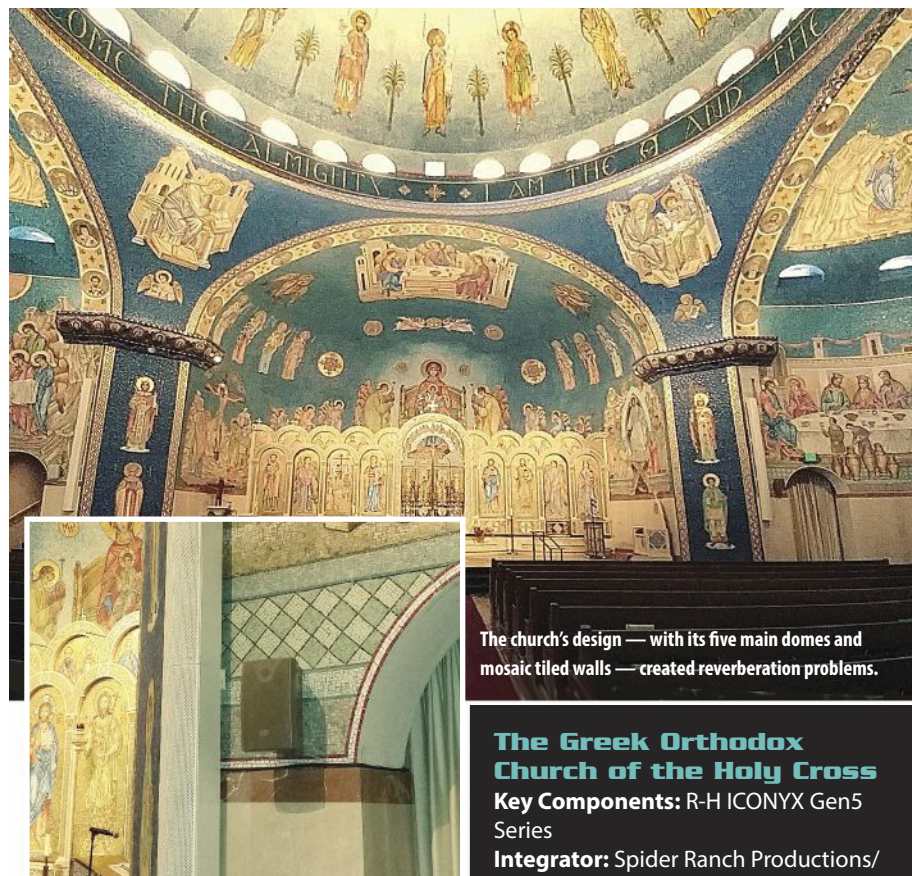
After several different sound systems disappointed, the church called Bay Area-based event production and system integration firm Spider Ranch Productions and acoustics and integration firm Layer 8. They specified a new loudspeaker system based on Renkus-Heinz ICONYX Gen5-series IC24-RN digitally steered arrays.

"I could immediately see this would be an acoustically challenging space, with those domes and acoustically hard spaces," observes Layer 8 president Rocky Giannetta. "The space sounds about five times larger than it actually is," details Spider Ranch Productions senior engineer Mark Sweet. "Even when one person is speaking to another from five or 10 feet away, many times it's problematic." Mulling over the challenges, Sweet remembered a successful demonstration he did with ICONYX several years earlier, in a different church. "In a room that seated about 1,500 people, ICONYX was amazing," he recalls. "Even at 100 feet, the source sounded like it was only about 10 feet away. I knew if ICONYX would work in that room, it would work effectively in this room."

The Renkus-Heinz IC24-RN loudspeakers chosen for the Church of the Holy Cross employ 24 4-inch coaxial transducers, each with three tweeters. Each coaxial transducer has a dedicated power amplifier and DSP channel. One array can generate up to 12 steerable beams, each of which can be individually shaped and aimed. As a result, sound could be directed at the church's pews and away from the reflective surfaces. The ICONYX's precise steering, combined with clarity, provided the speech intelligibility the church had sought for so many years. "The feedback we've gotten from the congregation has been that it's a night-and-day difference," Smith reports.

"I was very impressed with the fact that no matter where you sit in the church, the sound is not only intelligible, but it seems that the volume of the sound and the quality

of the sound are the same," praises Father Peter. "It doesn't diminish if you are in the first pew or the last pew. When we started using the Renkus-Heinz system, it was the first time in the nearly 30 years that I've been here that the congregation finally understood what I was saying."



The church's design — with its five main domes and mosaic tiled walls — created reverberation problems.

#### The Greek Orthodox Church of the Holy Cross

**Key Components:** R-H ICONYX Gen5 Series

**Integrator:** Spider Ranch Productions/ Layer 8, Inc.

The ICONYX system solved the intelligibility issues and blended with the décor.

### Church at Viera, Melbourne, FL

The Church at Viera holds four modern worship services in two different venues each week using Allen & Heath dLive, GLD and SQ Series mixers for FOH and streaming broadcast and a ME-1 Personal Mixing System for monitoring.

Production director Eli Higginbotham, alongside technical director Brock West, leads Church at Viera's production team. "We had an older digital mixer with reliability issues," Brock said. "So, when I came onboard, I looked for a replacement. We considered several brands but there wasn't another console in the same class and price range as the dLive." The church has standardized on Allen & Heath digital mixers for FOH, broadcast and their youth center. "The architecture is very similar, so it's easy to train a volunteer to mix in one space and then move them to another," said Eli.

Church at Viera's dLive includes an S7000 Surface and DM64 MixRack both located at FOH. Two DX168 Expanders accept sources on stage. Wireless mic receivers, audio from video and Ableton Live tracks connect to the DM64 at FOH. An SQ-6 Digital Mixer serves the church's youth center supplemented by an AR2412 AudioRack. A GLD-112 digital mixer handles streaming broadcast mixes for the church's website. Dante cards in each mixer implement audio networking throughout the church's systems.

Brock West trains the Church at Viera's production team volunteers. "We want them to be engaged with the band and be in tune with what's happening on stage," he said. Each FOH volunteer starts from a personal dLive scene and uses layers to manage as many as 60 sources adding dLive internal compressors, EQ and effects where needed. Eli added, "The quality of the dynamics and effects built into the dLive are so superior that we don't need external effects. We have world-class tools sitting at our fingertips."

A total of 12 ME-1 Personal Mixers with a ME-U Hub form what Brock and Eli describe as a "killer" monitoring system. Six ME-1s, located backstage, feed wireless IEM's for vocalists who can adjust their mix during rehearsals. The other six serve static locations, like the drum enclosure and keyboard rig. Eli commented, "When we installed the dLive, the congregation erupted with positive comments about the sonic quality and I kept hearing this for months.

The dLive is warm and musical and I love it. Even if I had \$100,000 to buy another mixer, I don't think I would do it."



#### The Church at Viera

**Key Components:** Allen & Heath dLive, GLD and SQ Series mixers

**Integrator:** Guitar Center Pro

Nils Lorvick, a Church at Viera volunteer, mixes FOH on the dLive S7000 surface



## Our Lady of Good Counsel Church, Moorestown, NJ

**F**ounded in the 19th century, Our Lady of Good Counsel Church is listed on the National Register of Historic Places. It reflects the traditional basilica-type design of Catholic churches, with soaring ceilings supported by tall pillars that can produce pleasing reverberation for the ear to enjoy — except when it comes to speech intelligibility, a traditional challenge in this type of building. So, as part of a larger building renovation project, the church brought in AV systems integrator Whitaker Brothers North to design and install a new sound system.

The installation employs the Bose Professional Panaray MSA12X self-powered digital beam-steering loudspeaker as its core solution, with a range of other Bose Pro products, including FreeSpace speakers and ControlSpace processors. The project was installed and on-site managed by Whitaker Brothers' long-term senior tech Doug Taylor.

"Churches of this type have acoustical and aesthetic challenges that sound systems have to address," explains Whitaker Brothers North founder and president Kevin Whitaker, Sr. "They need to address speech intelligibility but also need to do so without impeding sight-lines or taking away from the design of the church. There aren't many sound systems that can do all of that. We chose Bose."

Seven of the MSA12X loudspeakers are mounted on the columns of the church, six facing the congregation and one on the reverse side of a front column acting as a regional monitor for everyone on the altar. These are managed by a Bose ControlSpace ESP-1240 processor, accessed by a ControlSpace CC-64 wall-mount control center. In addition, the choir loft in the rear of the church now has its own sound system: a pair of Bose Panaray 402 Series IV full-range-driver arrays and PowerShare PS602 amp installed as a separate choir P.A., with a pair of Bose FreeSpace DS-16 speakers used as monitors for the choir. In the church's elementary school, where a large space is used as both a gym and an auditorium, two MA12EX speakers per side, are mounted at the stage's proscenium, along with a pair of Bose MB210 compact subwoofers.

"Speech intelligibility had been a problem for some time, as was even coverage," says Kevin Whitaker, Jr., the founder's son and company operations manager. "The Panaray MSA12X came along at just the right time — we needed the kind of coverage it could provide but we had to keep the speakers mounted higher on the columns for aesthetic reasons."

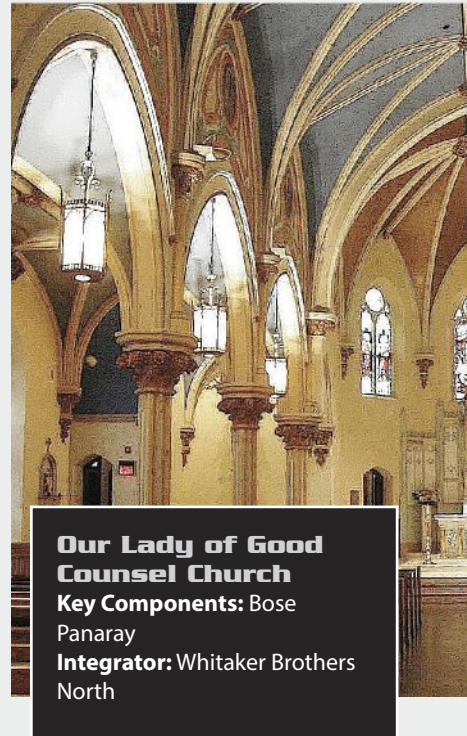
The Panaray MSA12X articulated array configuration allows wide, 160-degree horizontal coverage, with vertical angles of up to 40 degrees and vertical beam steering angles of  $\pm 20$  degrees. Kevin Sr. notes, "The MSA12X array gave us more flexibility for speaker placement and greater control over the coverage area, and solved all of the challenges the church faced."

Meanwhile, the school's combined gym/auditorium had been plagued by both speech intelligibility and feedback issues. "Now, with the MA12EX modular line arrays installed," says

Kevin Jr., "speech is crystal clear and feedback is just a bad memory."

Kevin Sr. adds, "That space is used for multiple purposes, everything from school plays to overflow for holiday masses, to basketball," adds Kevin Sr., noting ball guards were installed in front of the loudspeakers to protect against errant passes. "Operation of the sound system is simple and user-friendly — anyone who needs to use the space can easily operate the sound system. The whole thing was a breeze — the installation was completed on time and on budget, and it exceeded the church's aesthetic expectations."

Any former sound system components with any life left were cleaned and donated to a non-profit organization for use in Haiti. "In fact, the old system is on its way to Port-au-Prince as we speak," says Kevin Sr. "It's a great outcome for everyone."



Panaray MSA12X (on pillar) blends into the architecture

**Our Lady of Good Counsel Church**  
**Key Components:** Bose Panaray  
**Integrator:** Whitaker Brothers North

Main sanctuary at Our Lady of Good Counsel Church

## Christ the King Vineyard Church, North Olmsted, OH

**C**hrist the King Vineyard Church recently completed an extensive renovation, including a sound reinforcement upgrade. The new system included a PreSonus WorxAudio X5i-P powered compact line array, an X118i-P powered sub and WorxAudio Wave Series W-12Ai powered speakers. Additionally, the existing digital mixer was replaced with the PreSonus StudioLive 32 Series III console and two PreSonus EarMix 16M personal monitor mixers.

Breeze Stage and Studio LLC of Jensen Beach, FL, an AV design/build firm owned and operated by Jennifer Breeze Timmerman, was contracted to design and deploy the new SR system. After consulting with church leadership, Timmerman deployed a combination of line array and point source loudspeakers to fill the uniquely shaped sanctuary.

"The sanctuary at Christ the King Vineyard Church is very unique," she says. "It's a triangle-shaped hall, with each of the three sides of the room measuring approximately 110 feet. The stage spans the majority of one of those three walls and faces the rear corner of the room at a distance of 95 feet. Seating is moveable, with a capacity for approximately 400 worshippers."

Services are contemporary in nature. There is a full worship band with drums, multiple guitars, keyboards, bass and percussion — along with a vocal team. "It was crucial that the new system deliver a high level of speech intelligibility and first-rate music reproduction characteristics. This ultimately led us to select the PreSonus WorxAudio product line."

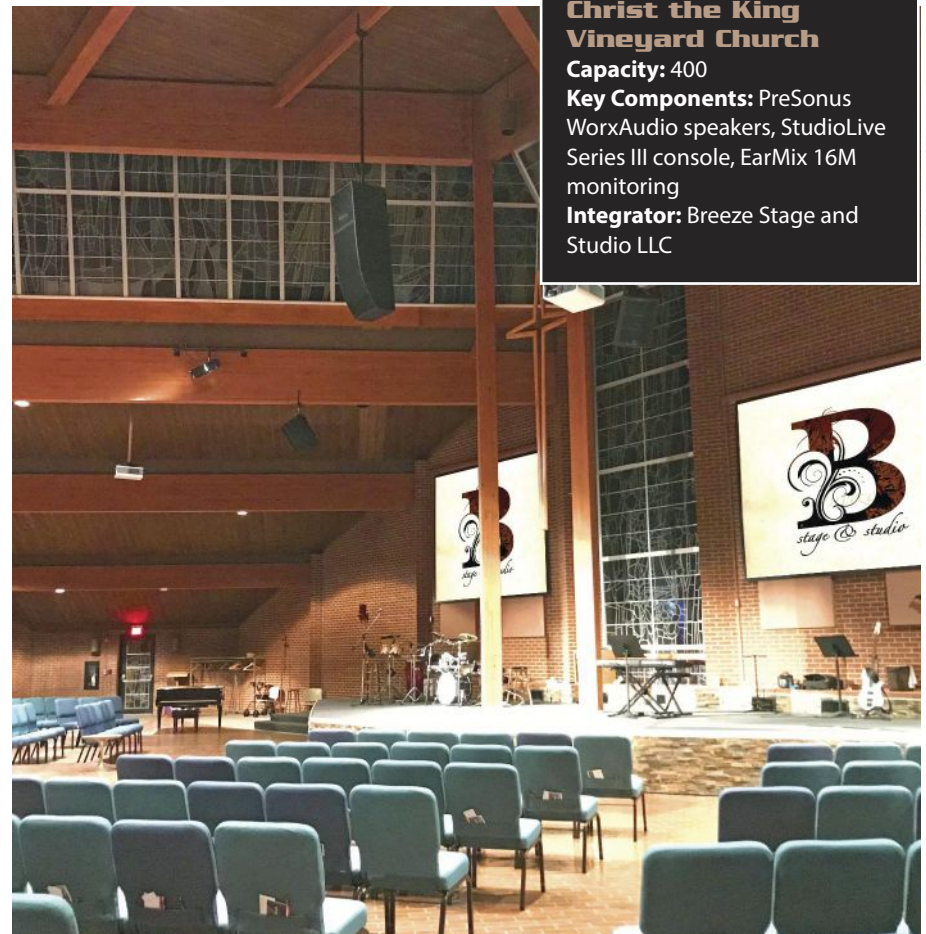
Timmerman and her team flew a X5i-P powered all-in-one compact line array, attached under a WorxAudio X118i-P powered sub, positioned over the front center area of the stage. For sidefill, two suspended Wave Series W-12Ai powered high-efficiency point-source speakers hang left and right to provide even coverage to the entire room.

While most of the people on stage during services are outfitted with wireless in-ear monitoring systems, the drummer and percussionist are now use a PreSonus EarMix 16M 16 x 2 AVB-networked personal monitor mixer. "These monitor mixers are ideal for those two musicians," Timmerman reports, "as they provide greater ability to fine-tune what's important to them while also ensuring plenty of level for their headphones."

"With the old SR system, members of the congregation complained about poor coverage and lack of intelligibility. As the WorxAudio X5i-P has an unusually broad 160-degree horizontal dispersion pattern, this single speaker system covers most of the room's approximately 180-degree span. With the W-12Ai powered speakers, we were able to comfortably cover the extreme sides of the room — knowing these two would carry the same great sound as the center cluster. This combination provides even coverage that was sorely needed with great intelligibility and natural sounding music reproduction. Further, the single X118i-P subwoofer packs plenty of punch and does a great job of filling in the bottom-end of the frequency spectrum."

The project was completed in August 2018, and since that time, the new system has performed exceptionally well. "Everyone at the church is very pleased," Timmerman reports.

"The coverage is even and the sound is amazing. No matter where one happens to be seated, the entire congregation can understand the presenters when they speak, which wasn't the case prior to installation. And the new StudioLive console has given the church more flexibility, with an easier interface, which means their volunteers can maximize their performance as sound engineers."



**Christ the King Vineyard Church**  
**Capacity:** 400  
**Key Components:** PreSonus WorxAudio speakers, StudioLive Series III console, EarMix 16M monitoring  
**Integrator:** Breeze Stage and Studio LLC

The triangle-shaped sanctuary is covered by a 160° center cluster and two side fills for the outer edges.

# Woodstock

## 50 Years After

Revisiting the Roots of Festival Sound **By John Kane**

**W**oodstock. What hasn't already been said? With its 50<sup>th</sup> anniversary fast approaching, a flurry of media outlets are glomming onto topics addressed during previous milestone birthdays. More now than ever, the stories of Woodstock will be elevated in myth and lore. But this process will leave many in the Woodstock enthusiast community asking "isn't there anything new for us?" Yet there still may be things to discover. By shifting focus away from the well-known timeline of events that led Woodstock Ventures to Yasgur's natural amphitheater, what's revealed is — its sound!

Brought together by peace, love, and music — Woodstock has had an unfading global impact. Held on August 15-17, 1969 amid the Catskill Mountains on Max Yasgur's dairy farm, the event demonstrated that 400,000 individuals could harmoniously congregate in one place. Not unlike our current political climate, Woodstock happened at a time of social and political unrest in the U.S. Although declared a disaster area, it endured for almost four days. From late July until show time on Friday afternoon August 15, 1969, the Woodstock production staff worked tirelessly to get whatever infrastructure they could in place. This effort included sound reinforcement — a finicky yet indispensable element.

### » Sound Sound

For its time, the sound reinforcement system at Woodstock demonstrated important things to the small 1969 audio community. Foremost, it proved that, if implemented

well, sufficient sound could be projected a great distance while maintaining quality, clarity and intelligibility. It's been said that the "Woodstock sound system" was the largest, most advanced, and expensive concert sound system ever constructed. Without it, there would have been no award-winning documentary, no soundtrack and no access to the countless stage announcements imbedded in popular music culture.

Not known to most, the system was designed and constructed in a non-descript storefront in Medford, MA just outside of Boston. The protagonist behind its creation and deployment was pioneer audio engineer and 2006 Parnelli Award honoree Bill Hanley.

Throughout his career, Hanley has claimed his *modus operandi* was that everyone should be able to hear all the way to the "last seat in the house." This phrase, open to many interpretations, coming from the man himself, is meant quite literally. Regardless of how much money one might spend on a concert ticket, Hanley's sole desire was that the person sitting in the back could hear just as well as the individual in the front. This is a clear and simple objective coming from someone who has mingled

with hundreds, if not thousands of influential artists like The Band, The Beatles, Grand Funk Railroad, Jimi Hendrix, Janis Joplin and Bob Dylan, to name a few.

In fact, it was Hanley who was operating the soundboard for Dylan's infamous 1965 "electric" set at the Newport Folk Festival. Due to Hanley's good work, for those sitting in the far reaches of Yasgur's natural bowl, or even beyond the farmer's gold and green alfalfa fields, the "last seat" was actually excellent. This was because the

sound engineer already had been in the business over a decade before Woodstock occurred.

From 1957 to about 1973, Hanley was part of a small community of first generation sound engineers that set a standard for live concert sound application. Early sound reinforcement offered no guidebook. Many industry veterans claim it was totally "fly by the seat of your pants." According to Hanley, "You simply couldn't go and buy this sort equipment at Guitar Center," adding "you either made what you needed, went without, or adapted to the situation." Bill Hanley single-handedly brought quality sound out of the era of primitive public address. His way of operating was living proof that "necessity is the mother of

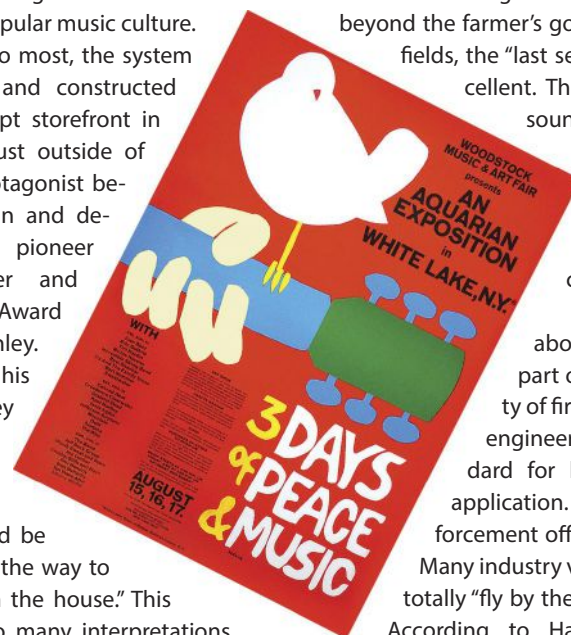
invention." Now 82 years old, he is one of the oldest living live concert sound engineers of this period.

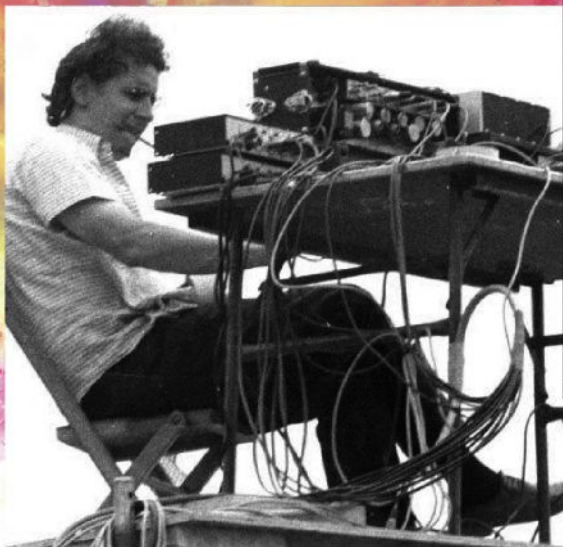
Major developments in hi-fi, cinema sound and recording technology became available to Hanley when he began in the mid-50s. Although he didn't invent the power amplifier, speaker or microphone, he did combine these elements with incredible results. By the 1960s, he was adapting and modifying recording studio miking techniques, home hi-fi (and military grade) amplification and movie theater speakers (Altec Voice of the Theater) to accommodate his clients' evolving needs. By connecting multiples of these resources, Hanley was able to build "systems of sound" powerful enough support an emerging music business followed by growing audiences.

### » The Hanley Background

Born in 1937, Hanley was the eldest of five children. By the age of six, his father gave him his first crystal radio set, followed by a one-tube radio, then a six-tube radio, setting off an early interest in electronics. During his teens, he and his younger brother Terry would install TV antennas atop roofs of rural communities. Back in the basement of their modest Medford home, the Hanley brothers fixed their neighbors' television sets for extra money. At Christmastime, they hooked up an amplifier they'd built to a large speaker, pointed it out their attic window and blasted holiday music for the community.

In his teens, Hanley developed a knack for roller-skating. Eventually he grew to love the





Hanley at his Woodstock FOH position



DAVID MARKS

Part of the high-tech FOH rig: a Teletronix LA-2A limiter, Altec 1567A tube mixer and one of many Shure M67 mixers in the signal chain. The gaff tape securing the LA-2A is a nice touch.



DAVID SOKOL

Bill Hanley today


sound of the Hammond organ being played at a local roller rink called the Bal-A-Roue. He was also impressed by the quality of the rink's sound system. While studying radio and electronics at the Medford vocational school, he became increasingly frustrated about the quality of public address systems used for live music. Leaving his parent's basement, the young engineer's business was moved to a rented two-car garage just around the corner.

By 1957, he had chased down Newport Jazz Festival impresario George Wein with emphatic fervor. It was the case that he often needed to convince promoters and musicians that quality sound was important, and Wein was no different. Such fortuitous and strong convictions led to a long and successful career with the festival producer, and as a result, Hanley Sound established itself as the premier company for both the Newport Folk and Jazz Festivals. With his reputation growing and other larger contracts coming in, he eventually opened Hanley Sound Inc. from a storefront on Salem St. in Medford's Haines Square.

In 1966, a gig for the local Boston band, Barry and the Remains, allowed Hanley an opportunity to support the group when they opened for The Beatles. Soon Hanley found himself behind the mixing console in front of hordes of screaming fans for the eastern portion of the Fab Four's' final tour. With several






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## MILESTONES

concerts and festivals in between, by 1968, the Hanley Sound calendar was overflowing with events. Eventually that led him to some of New York City's preeminent music venues. After a healthy stint at the legendary Café Au Go Go nightclub in Greenwich Village, one of Hanley's custom sound systems was installed at Bill Graham's Fillmore East.

By the end of the 60s, Hanley's reputation for quality sound was huge. The moniker "Father of Festival Sound" is a felicitous one, as he and his crew provided sound reinforcement for some of the largest pop and rock festivals in U.S. history. By 1969 Hanley owned more live sound equipment than anyone else in the business. With these resources, he and his crew could handle multiple touring schedules and festival dates at one time. In 1969 alone, the company provided large-scale systems for several back-to-back concert tours and festivals including Toronto Pop, Denver Pop, Laurel Pop, Atlanta Pop, Texas Pop, Blind Faith, The Rolling Stones, Steppenwolf, The Turtles and Seals & Crofts.

For Hanley Sound, a flurry of national festivals varying in size and production requirements occurred right up until the Woodstock weekend. It was a time when most existing sound companies in the U.S. were either limited or discordantly unsuitable to handle such big jobs. These mass gatherings also included anti-Vietnam war demonstrations, some ranging into the hundreds of thousands in attendance. Yet, no festival could match Hanley Sound's culminating performance in sound reinforcement application at Woodstock, the pivotal gig in live event history. Because of this important work, the company has been cited for leading the way on how "festival sound" should be executed.

### » The Right Sound Company

Choosing Hanley for the Woodstock festival was "natural" according to Stan Goldstein, who was in charge of hiring the production staff. Hanley had already worked with most of the acts on the stellar lineup, making the decision even easier. In a 2011 interview, Goldstein recalls, "Hanley was the guy who was doing large outdoor P.A. gigs. The audio community was quite small at that time. The number of people working in the field was small, number one; number two, the number of people working with large systems was even smaller. Hanley was the guy."

Yet the final word rested with festival producer Michael Lang, who told this writer that he was initially considering Grateful Dead sound engineer Owsley Stanley for the job. But Lang admired Hanley's confidence, claiming it made him feel

"comfortable." Lang recalls, "We came to a situation where I wanted great sound. Bill [Hanley] said to me that that 'Great sound for an event like yours doesn't exist, but I can build it' and he sold me." Those who worked with Hanley recall a personality that was "oddly unique." According to Woodstock director of security Lee Mackler-Blumer, "Bill was really the mad scientist. The only thing he didn't have was a white coat flying behind him! Truly he had these visions, and he had this knowledge. He obviously had spent years in a room with a pencil, figuring all this stuff out."

Before Bethel, Woodstock was slated for a different locale in Wallkill, NY. Because of anti-festival community resistance, the location was moved, leaving very little time to secure the new site. This sent production crews scrambling. Shortly after the first-site debacle, Hanley was called in to survey the new location and plot where his sound system should go. At this meeting, Michael Lang and Max Yasgur showed the sound engineer the proposed field. Once Hanley saw the natural amphitheater, he instantly visualized the placement of his still-to-be sound system. "I met Michael and Max, and we drove to the site," Hanley remembers. "I got out of the limousine and said, 'That's it!'" He felt the spot was ideal due to the unique shape of the land. Its size and geography could accommodate sufficient staging, sound equipment deployment and projection. Hanley was also instrumental in developing the idea for the security wall located in front of and around the stage. This unique V-shaped design allowed for better crowd control as well as a natural egress to the side and backstage areas.

### » The System

Early on, Hanley and most of the promoters were expecting between 150,000 to 200,000 people. For the event, he and his crew prepared and built specially designed speaker columns powered by over 10,000 watts of McIntosh tube power amplifiers located below the stage. According to Hanley, "We built two speaker towers each of which had two levels containing its own speaker cluster. The highest one was 70 feet high to accommodate the audience in the middle of the field and high up on the hill. The lowest one, at 20 feet, was for the audience nearest to the stage. There were four cabinets arrayed on both towers on each level, which had about 32 woofers each." This unique and logical design pushed the music into the ears of the audience without much slapback, "The dense crowd conveniently absorbed some of the sound," claims the sound engineer.

Hanley and his crew custom designed the HSI 410 (Hanley Sound Inc.) speaker cabinets out of marine grade plywood. For the upper stacks, two bass bins were strategically positioned with high frequency horns on top. This was no easy task, especially as each pair measured 6x4x7 feet, and weighed close to 1,000 pounds. These four upper bins came loaded with four 15-inch JBL D-130 drivers. The four lower bins contained four 15-inch JBL D140 drivers for additional bass. Hanley recalls, "The high frequencies were handled by model 1003B 5x2 Altec multi-cell horns (300 Hz min frequency) and my custom-built 2x2 horns, all with Altec 290 compression drivers."

Perched above the audience, approximately 75 ft. stage left into the field, Hanley (and a rotation of engineers) mixed the event on a modest platform constructed of plywood and scaffolding. Known in the industry for their performance and quality, the engineer's microphone (and mixers) of choice for the event were Shure, "We used about 20 Shure Unidyne SM545 microphones which were modified. I also used four modified Shure M67's with input pads, two Shure Audio Masters for EQ, an Altec 1567A tube mixer and four Teletronix LA2A tube limiters between the mixers and the power amplifiers. Below the stage, we had over 20 McIntosh MC3500 series 350-watt RMS high-fidelity tube amplifiers." From this location, a sound crew of around 12 were able to execute the applied science of sound reinforcement with very few hiccups.

Live concert recording was also in a phase of infancy. It was Hanley, and engineers Lee Osborne and Eddie Kramer, who were responsible for recording the event in a trailer backstage. According to Woodstock head of production and emcee John Morris, Hanley's involvement was significant, covering not just sound but other essential production elements like crowd control, miking, amplification, power distribution and large speaker system deployment. "Bill put everything together; this is why he always had a soldering iron — during Woodstock and after. He literally made the pieces and put the pieces together to make the sound work, and it got bigger and bigger at Woodstock. Bill made it possible for people miles away to hear."

### » Woodstock and Beyond

Post-Woodstock, Hanley's social conscience led him to support several anti-Vietnam war rallies, at one point even shipping his entire Woodstock sound system to South Africa to help with the anti-apartheid movement. At the time, many considered Woodstock a disaster, frightening government officials and communities across the U.S. Several festivals that Hanley planned for either fell apart last-minute or were canceled by court injunctions. As a result, by the mid-70s the once-successful sound company began to experience huge financial losses. In time, Bill Hanley witnessed the industry that he helped build slip through his hands. In time it became difficult to match the competition, as talented new companies exploded onto the sound reinforcement landscape. Hanley Sound eventually closed its doors in 1984.

After 50 years, the story of Woodstock has grown exponentially, and for many its music has become the soundtrack of our lives. In this way, Hanley's system has indirectly affected generations of fans, many of whom were born long after the actual event. By applying innovative ideas in sound delivery to a 1960s counter-culture screaming for change, his influence allowed many voices to be heard. Every time since, when we hear Richie Havens words "Freedom! Freedom!" echoing over Yasgur's fields, we have Hanley to thank. FOH

*John Kane has spent years studying the life and career of Bill Hanley and authored the books The Last Seat in the House: The Story of Hanley Sound and Pilgrims of Woodstock. Visit him at [thelastseatinthehouse.com](http://thelastseatinthehouse.com).*



The stage view of the P.A. rig. Note the extensive use of guy wires.



Stage right main P.A. tower



Bill Hanley at the site today

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# Large-Format Line Arrays

By George Petersen

When you're doing tours and installs in arenas, stadiums and larger venues, you typically need long-throw, high power systems. This calls out the really big guns — typically in the form of large-format line arrays, here defined as systems with dual 12- or 15-inch woofers. Checking around, we found a wide "array" of available systems — powered and unpowered, and two-, three- and even four-way systems, so there's a lot of variety and system topologies on the market. With that in mind, we've provided URLs for each company; contact the manufacturers for more information.

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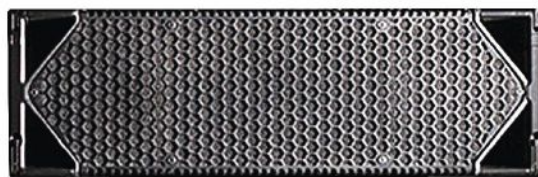
### Adamson E-15



**LF:** (2) ND15 15" neodymium/Kevlar woofers  
**MF:** (2) YX7 7" Kevlar cone mids  
**HF:** (2) Adamson NH4 1.5" exit drivers  
**Frequency Response:** 60 Hz to 18k Hz  
**Horizontal dispersion:** 90°  
**Size:** 15.4 x 51.4 x 21.4"  
**Weight:** 176 pounds  
**Power:** Adamson E-Rack Powering  
**Notes:** Active 3-way Lake presets  
**Companion Sub:** E218, E219

adamsonsystems.com

### Clair Global Cohesion CO-12



**LF:** (2) 12" neodymium woofers  
**MF:** neodymium mid drivers  
**HF:** neodymium compression drivers  
**Frequency Response:** 35 Hz to 20k Hz  
**Horizontal dispersion:** 80° (120° version avail.)  
**Size:** 14 x 45 x 22"  
**Weight:** 132 pounds  
**Power:** External via Clair StakRack or PakRak  
**Notes:** Proprietary Clair/Lake processing  
**Companion Sub:** Cohesion CP118 or CP218

clairglobal.com

### Coda Audio AiRAY



**LF:** (2) 12" neodymium woofers  
**MF/HF:** (2) coaxial 6" dual-diaphragm planar-wave drivers  
**Frequency Response:** 50 Hz to 22k Hz  
**Horizontal Dispersion:** Variable 90/100/110°  
**Size:** 26.5 x 14.7 x 22.5"  
**Weight:** 83.6 pounds  
**Power:** Unpowered  
**Notes:** Extremely compact design  
**Companion Sub:** SC2-F or SCV-F

codaaudio.com

### DAS Audio Aero Series 2 Aero 40A



**LF:** 12" neodymium woofers  
**MF:** 8" neodymium cone mid  
**HF:** (2) 1.5" exit neodymium drivers  
**Frequency Response:** 60 Hz to 20k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 12.4 x 37 x 15.8"  
**Weight:** 149.6 pounds  
**Power:** 2,000W continuous  
**Notes:** Onboard brickwall FIR filters, DASnet networking  
**Companion Sub:** LX-118A; LX-218CRA.net

dasaudio.com

### dB Technologies VIO L212



**LF:** (2) 12" neodymium woofers  
**MF:** (4) 6.5" neodymium cone drivers  
**HF:** (2) 1.4" exit neodymium drivers  
**Frequency Response:** 55 Hz to 18.6k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 15 x 43.3 x 17.7"  
**Weight:** 120 pounds  
**Power:** (2) 1,600W RMS Class-D  
**Notes:** Onboard DSP; slots for network/digital inputs  
**Companion Sub:** VIO S118R, VIO S218, VIO S318

dbtechnologies.com

### d&b audiotechnik GSL12



**LF:** (2) 14" and (2) 10" neodymium woofers  
**MF:** 10" neodymium cone driver  
**HF:** (3) 1.4"-exit drivers  
**Frequency Response:** 45 Hz to 18k Hz  
**Horizontal Dispersion:** 120°  
**Size:** 15.4 x 51.2 x 24.7"  
**Weight:** 176 pounds  
**Power:** Unpowered; d&b amp/DSP package recommended  
**Notes:** Near-cardioid performance  
**Companion Sub:** Triple 21" SL-G SUB

dbaudio.com

### EAW Anya



**LF:** (2) 15" aperture-loaded woofers  
**MF:** (6) 5.25" cone horn-loaded mids  
**HF:** (14) 1" exit drivers, horn-loaded  
**Frequency Response:** 35 Hz to 18k Hz  
**Horizontal Dispersion:** 70°  
**Size:** 45 x 16.9 x 30"  
**Weight:** 285 pounds  
**Power:** 10,000W triamped Class-D w/DSP  
**Notes:** Built-in microphone for in-situ diagnostics  
**Companion Sub:** Otto Adaptive Subwoofer

eaw.com

### EM Acoustics Halo-A



**LF:** (2) 12" neodymium woofers  
**HF:** (4) 1.4" exit drivers  
**Frequency Response:** 48 Hz to 19k Hz  
**Horizontal Dispersion:** 80°  
**Size (HxWxD):** 14.3 x 40.2 x 24.4"  
**Weight:** 145 pounds  
**Power:** Unpowered  
**Notes:** HF drivers on AMT plane-wave array  
**Companion Sub:** Halo-CS

emacoustics.co.uk

### ISP Technologies HDL 4212



**LF:** (2) 12" neodymium woofers  
**MF:** (2) 6.5" cone mids  
**HMF:** (2) 2" exit drivers  
**HF:** (4) 1.75" exit drivers  
**Frequency Response:** 68 Hz to 18k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 15 x 43.5 x 27.5"  
**Weight:** 185 pounds (with amps)  
**Power:** Six amps provide 2,000W total  
**Notes:** Outboard digital crossover required  
**Companion Sub:** XMAX 218

ispproaudio.com

## JBL VTX A12



**LF:** (2) 12" neodymium woofers  
**MF:** (4) 5.5" cone neodymium mids  
**HF:** (3) 2423K neodymium drivers  
**Frequency Response:** 46 Hz to 19k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 13 x 44 x 19.5  
**Weight:** 134 pounds  
**Power:** Unpowered  
**Notes:** Crown I-Tech HD amps recommended  
**Companion Sub:** VTX G28 (ground); VTXS28 (flyable)

[jblpro.com](http://jblpro.com)

## K-array Mugello-KH5



**LF:** (2) 15" woofers  
**HF:** (4) 1.4"-exit drivers  
**Frequency Response:** 50 Hz to 19k Hz  
**Horizontal Dispersion:** 110°  
**Size:** 20.5 x 48 x 8.26"  
**Weight:** 134.5 pounds  
**Power:** (4) 1,600W amp channels  
**Notes:** Shallow-depth design; onboard DSP with beam steering  
**Companion Sub:** Mugello KS5

[k-array.com](http://k-array.com)

## L-Acoustics K1



**LF:** (2) 15" woofers  
**MF:** (4) 6.5" cone mids  
**HF:** (3) 3" diaphragm drivers on DOSC waveguides  
**Frequency Response:** 35 Hz to 20k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 17.2 x 52.8 x 20.5"  
**Weight:** 234 pounds  
**Power:** Unpowered; turnkey amp rack/DSP system optional  
**Notes:** Wavefront Sculpture Technology enclosure  
**Sub:** K1-SB (arrayable); SB28 (stackable)

[l-acoustics.com](http://l-acoustics.com)

## Lynx Pro Audio LX-V12



**LF:** (2) 12" neodymium woofers  
**MF:** (4) 6.5" cone mids  
**HF:** (2) 1.4" exit neodymium drivers  
**Frequency Response:** 55 Hz to 18k Hz  
**Horizontal Dispersion:** 100°  
**Size:** 14.5 x 46.25 x 20"  
**Weight:** 163 pounds  
**Power:** 4,000W Class-D  
**Notes:** Onboard DSP with FIR filters  
**Companion Sub:** LX-218S/LX-318C

[lynxproaudio.com](http://lynxproaudio.com)

## Martin Audio MLA



**LF:** (2) 12" neodymium Hybrid horn-loaded  
**MF:** (2) 6.5" cone neodymium mids  
**HF:** (3) 1" exit neodymium drivers  
**Frequency Response:** 52 Hz to 18k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 14.6 x 44.7 x 26.5"  
**Weight:** 193 pounds  
**Power:** (6) Class-D, 6,000W peak total  
**Notes:** DSP/networking control of each array cell  
**Companion Sub:** MLX Sub-Bass

[martin-audio.com](http://martin-audio.com)

## Meyer Sound LEO-M



**LF:** (2) 15" long-excursion woofers  
**HF:** (2) 4" diaphragm compression drivers  
**Frequency Response:** 55 Hz to 18k Hz  
**Horizontal Dispersion:** 100°  
**Size:** 17.9 x 41.4 x 23"  
**Weight:** 265 pounds  
**Power:** 3-channel MOSFET output stages (Class-AB/H bridged)  
**Notes:** Galileo Callisto loudspeaker management  
**Companion Sub:** 1100-LFC

[meyersound.com](http://meyersound.com)

## Nexo STM 46/STM B112



**LF:** 12" neodymium woofer (in single Bass Module)  
**MF:** (4) 6.5" flat membrane drivers  
**HF:** (4) 1.4" exit neodymium drivers  
**Frequency Response:** 55 Hz to 20k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 13.8 x 45.3 x 28.2"  
**Weight:** 260 pounds  
**Power:** External NXAMP4x4 powering/DSP module  
**Notes:** Dimensions describe STM 46 main module and STM B112 bass module. System allows multiple configurations.  
**Companion Sub:** STM S118

[nexo-sa.com](http://nexo-sa.com)

## Next Pro Audio LA212X



**LF:** (2) 12" neodymium woofers  
**MF:** 10" cone midrange  
**HF:** (2) 1.4" neodymium HF  
**Frequency Response:** 60 Hz to 19k Hz  
**Horizontal Dispersion:** 90°  
**Size (HxWxD):** 15 x 40.2 x 19.7"  
**Weight:** 134.2 pounds  
**Power:** Unpowered  
**Notes:** All custom B&C drivers  
**Companion Sub:** LAs118A, LAs218, LAs418

[next-proaudio.com](http://next-proaudio.com)

## Outline GTO



**LF:** (2) 15" woofers  
**MF:** (4) 8" cone mids  
**HF:** (4) 3" diaphragm neodymium drivers  
**Frequency Response:** 50 Hz to 18k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 18.1 x 44.3 x 25.8"  
**Weight:** 212 pounds  
**Power:** Unpowered  
**Notes:** GTO-DF (downfiring) cabinet also available  
**Companion Sub:** Dual-15 GTO-LOW, dual-18 GTO-SUB

[outline.it](http://outline.it)

## PK Sound Trinity



**LF:** (2) 12" neodymium woofers  
**MF:** (4) cone midrange  
**HF:** (2) coaxial HF  
**Frequency Response:** 40 Hz to 22 kHz  
**Horizontal Dispersion:** Variable, 60° to 120°  
**Size:** 13.8 x 54.8 x 23"  
**Weight:** 259 pounds  
**Power:** 6,000 watts, Class-D  
**Notes:** Remotely adjustable horiz. and vert. dispersion  
**Companion Sub:** Gravity 218, Gravity 30, Klarity 218

[pksound.ca](http://pksound.ca)

## RCF HDL 50-A



**LF:** (2) 12" neodymium woofers  
**MF:** (4) 6.5" cone neodymium mids  
**HF:** (2) 2" exit neodymium drivers  
**Frequency Response:** 40 Hz to 20k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 14.4 x 46 x 19.8"  
**Weight:** 123.5 pounds  
**Power:** 2,200W RMS onboard  
**Notes:** 32-bit FIR Phase DSP with RDNet control  
**Companion Sub:** HDL-53AS, SUB 9007-AS

[rcf.it](http://rcf.it)

## Sound Barrier SB-LA212



**LF:** (2) 12" neodymium woofers  
**MF:** (2) 6.5" cone neodymium mids  
**HF:** (2) 1.4" exit neodymium drivers  
**Frequency Response:** 60 Hz to 19k Hz  
**Horizontal Dispersion:** 100°  
**Size:** 15.7 x 43 x 25.6"  
**Weight:** 143 pounds  
**Power:** Unpowered  
**Notes:** Variable 0° to 8° splay angles  
**Companion Sub:** SB-LA828SUB

[soundbarrier.com](http://soundbarrier.com)

Sound Bridge Labs 7222XY



**LF:** (2) 12" neodymium woofers  
**HF:** (2) neodymium EXO drivers  
**Frequency Response:** 50 Hz to 22k Hz  
**Horizontal Dispersion:** 120°  
**Size:** 13.75 x 41.7 x 27.5"  
**Weight:** 141 pounds  
**Power:** Unpowered  
**Notes:** MF/HF drivers on Q-Drive WaveShaper horns  
**Companion Sub:** 7218SWX, 7218SWX-F, 7221SWX

soundbridge.com

TVI Audio C-212ii



**LF:** (2) 12" woofers  
**MF:** (2) 8" cone mids  
**HF:** (2) 1.7" exit drivers  
**Frequency Response:** 50 Hz to 19k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 14.5 x 46.2 x 24"  
**Weight:** 179 pounds  
**Power:** Unpowered  
**Notes:** Powered version available  
**Companion Sub:** C-218-12

tviaudio.com

VUE Audiotechnik a12



**LF:** (2) 12" neodymium woofers  
**MF:** (6) 4" Kevlar cone neodymium drivers  
**HF:** (2) 1.4" exit drivers  
**Frequency Response:** 47 Hz to 28k Hz  
**Horizontal Dispersion:** 90°  
**Size:** 14 x 42.1 x 16.85"  
**Weight:** 129 pounds  
**Power:** Unpowered; VUEDrive V3 suggested  
**Notes:** Beryllium diaphragms  
**Companion Sub:** hs-228; hs-221

vueaudio.com

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# PreSonus EarMix 16M

## Personal Monitor Mixers

By Bill Evans

Let's start with a disclaimer. I have been a PreSonus user since buying my first BlueTube unit many years ago and, over the past few years, I've used a PreSonus mix system (RM32-AI) and 328AI speakers on every gig I've done. Ok, I'm something of a fan.

The system I received consisted of the StudioLive 32R rack mixer, an SW5E AVB switch (\$399/street), an NSB 8.8 stage box (\$599/street) and a trio of EarMix 16M personal mixers (\$399/street, each). For this review, I'll be focusing on the EarMix.

### » What's What

The SW5E is a 5-port AVB switch. It sits between the mixer and the stage box and personal mixers. "Wait," I can hear people puzzling, "do I have to buy another box to use the EarMix system with my mixer?"

The answer is that no, you do not; but there are big advantages to adding it. It allows two things. First, you are running a star network rather than just daisy-chaining between devices.

Rather than getting into counting digital "hops" on a daisy chain, the star topology minimizes system latency. Also, the SW5E provides Power Over Ethernet for the EarMix units, so you don't have to worry about power adapters.

The NSB 8.8 is an 8-in/8-out AVB stage box, which is just what it sounds like. It's great for drums, percussion/conga stations, keyboard rigs, basically any place on stage with a bunch of audio sources. The outputs can feed powered wedges or in-ear transmitters. Both the SW5E and the NSB 8.8 are built like tanks. Did I give the stage box a toss just to see if it could take it? Why yes, I did. It's built to take some abuse.

The star of the show is the EarMix 16M. Designed to work with its StudioLive Series III mixers (yet compatible with other AVB-enabled systems), this 16x2 AVB-networked personal monitor mixer provides an expandable, monitoring solution. Each EarMix 16M accepts 16 mono channels of input via AVB networking (Cat-6 cabling) and multiple units can be networked with a StudioLive Series III mixer.

Once routing is set up to EarMix's 16 input sources, the user simply pushes a select button for access to that channel's mute; solo; EQ (LF/HF shelving; sweepable MF), along with pan, one-knob limiter and level controls. The stereo aux input also has a level control. Rotary outputs for line out and phones level include 8-step LED meters and all buttons are backlit for ease of use in on dark stages. After perfecting a monitor mix, the scene can be saved to internal memory; up to 16 mix scenes can be stored/recalled locally.

In addition to its Ethernet/AVB ports, there's a pair of 1/4" TRS line outputs (if you're using the EarMix to control, say, a single powered wedge, a switch on the control surface will sum those to mono) and an 1/8" aux input for connecting an external audio device.

EarMix's 1/4" TRS stereo headphone output sports a respectable amount of gain. Most users will find it plenty loud. I was

somewhat baffled by its 1/4" headphone out when nearly all IEMs use an 1/8" plug. Most ear buds come with an 1/8"-1/4" adapter, but we all know how easily those get lost. It would be nice if there were both 1/4" and 1/8" outs, but if your users plan to connect wired buds directly to EarMix, pack a handful of adapters.

### » Setup

My setup experience was likely not the norm. I've been using PreSonus rack mixers for a while and am pretty comfortable (or at least I was pretty comfortable) with controlling it via the Universal Control Surface app. I've done that both with a Mac Mini in the rack and with just an iPad. Most users will be mixing and setting up from a console, which will look different.

The shows I mix these days are mainly own band. Even on gigs where there is a house sound tech, I carried the RM32AI and ran the monitors from the stage. In the last iteration of the never-ending band, I had to run everything. Everyone in the band ran their own in-ear mix using either the UC app on an iPad or the Q-Mix app on an iPhone or Android phone. So, I figured that I could wing getting this system set up. While the end result was something I was pretty happy with, and the physical setup was a breeze, the middle part — setting up the digital routing is where things went awry. But, that was operator error — essentially me thinking I could wing it.

If you're planning to implement a system like this and aren't immersed in how digital patching works in the PreSonus world, you need to spend some time getting your head wrapped around it. It offers so many options that it can be paralyzing if you go in uneducated. There is a document about digital routing and setting up an AVB network available at PreSonus.com. To be honest, I tried to read it multiple times. The writing is that perfect storm between way too geeky for mortals along with an assumption that anyone other than a complete rookie already knows all of this stuff. There have been better, more successful attempts at explaining digital patching/routing — including the "PreSonus StudioLive Series III Tricks" article that ran in the August 2018 issue of *FRONT of HOUSE*. I recommend reading that. There is also a series of good video tutorials on the PreSonus site. But don't try to wing it.

Once I figured out how to name each EarMix box and determine which AVB banks fed which banks on each EarMix, it got easy. There are user-friendly features to help along the way. I loved the button in Universal Control that would make the lights on a chosen EarMix light up so we could tell which one was which.



### » Power is Everything!

Power to the EarMix boxes was provided over Ethernet — a real plus. But use Cat-6 cables. The manual says you can use Cat-5, but the crappy cables I had purchased over the years from Fry's would provide power, but only enough to light the EarMix up and use the controls. They would not carry enough juice to provide actual audio on the headphone jack. Once we got enough power to goose the output enough, we used a variety of headphone types ranging from the Sensaphonics IEMs to big, over-the-ear Sony cans that the keyboard player uses. It powered all of them without a problem. I usually carry a beefy stand-alone headphone amp for those Sony's and was prepared to use the EarMix's line outs to drive that, but didn't need to.

### » Wrapping Up

The EarMix boxes do not include a mic stand mount. One is offered, but it's pricey (\$80/list/\$59 street). That may seem like a minor point, but for my tests, the EarMix boxes sat on the floor, which removes a lot of the system's convenience.

I remember writing years ago that the day was not far off when anyone working in audio would have to have a solid understanding of networking. With systems like this and the increasing penetration of technologies like AVB and Dante, that time is here. I should knuckle down and learn the networking part and so should you. Ecosystems like this are really the norm now outside of gigs or venues small enough to be using much more basic analog mixing systems.

I like the system extensions represented by the EarMix, SW5E switch and NSB stage box. They are well-built, sound great and are really well-designed. There is a learning curve to the setup, but once past it, the EarMix 16M system offers powerful, flexible hardware control of individual monitor mixes. I continue to really love the 32R and using the Universal Control app on an iPad and in the end, it's nice to have both virtual and physical options. **FOH**

Bill Evans is a musician, independent engineer and writer based in Las Vegas.

## Powerful, Flexible Monitor Mix Control System

Designed for use with PreSonus StudioLive Series III mixers, yet compatible with other AVB-enabled systems, the PreSonus EarMix 16M personal monitor mixer is designed to serve as an expandable, networked monitoring solution for stage, installed sound systems and studio recording. Each EarMix 16M accepts 16 mono channels of input via AVB networking, and users can network multiple units with a StudioLive Series III mixer.

### PreSonus EarMix 16M

#### PROS

- Very flexible system
- POE is very convenient
- Solid, road-tough construction

#### CONS

- Some learning curve to understanding digital patching
- No included mic stand mount for the EarMix

#### FEATURES

##### Analog I/O:

- 1/8-inch stereo aux input
- 2 Balanced 1/4-inch TRS line outputs
- 1/4-inch TRS stereo headphone output with loud, clear headphone amp that can drive low-impedance in-ear monitors

##### Digital:

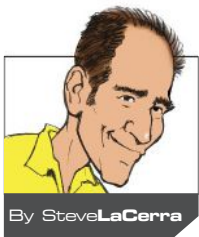
- 16 mono channels of input via AVB networking
- 2 AVB Ethernet ports
- 24 bit, up to 48 kHz operation

##### More Features:

- 3-band EQ with sweepable mid frequency on all channels and main mix
- Limiter on all channels and main mix
- Stereo channel linking
- Channel grouping
- Solo and Mute
- Mix scene Store and Recall; store up to 16 mix scenes locally
- 16 Signal present and clip LEDs (one for each input)
- 8-segment stereo output meter
- Channel Level rotary control with 8-segment level indicator
- Aux Input level control
- Independent Monitor (line out) and Phones level controls
- Routing setup from StudioLive Series III consoles and UC Surface

#### STATS

Size	9.4 x 7.6 x 1.8"
Weight	1.2 pounds
Price	\$399/street (not including stand mount)
Manufacturer	PreSonus
More Info	presonus.com



ON THE DIGITALEGE

# Personal Monitoring: A Mixing Democracy

There's no doubt that networked digital consoles have made our lives easier in many ways. We all know about the reduced need for outboard processing, drive and effects racks and copper snakes. We all love the way we can save and recall shows, and at the push of a button — change from a karaoke setup to a live band with 40 inputs. And of course, there's the ability to mix remotely or walk the room while tuning a P.A. from a tablet.

Networking has generated a completely new category of product: the personal mixing system. Similar to the way it happened in the recording studio, musicians can run their own monitors via dedicated personal mixers, phone or tablet, and not bother a monitor engineer. Is that a good thing?

## » The Good

The idea of regional (or even local) acts on a tight budget carrying their own monitor system is very attractive — especially when used in conjunction with IEMs. Given the reduced cost of gear these days, creating a portable monitor rig is within financial reach. Cargo space is minimal because the mixing "console" doesn't need to have a large work surface (or any work surface at all). It can simply be a mixer-in-a-stage box and — depending upon the house system — the act may be able to "patch in" using an off-the-shelf Ethernet cable. As any performer will attest, clearly hearing your bandmates in the monitors is a wonderful thing. Monitor world stays the same even when the outside world changes.

Outfitting each performer with their own mixer (or mixing app) can be a solution for certain problems. In situations where the FOH engineer is running monitors from the FOH

desk, the engineer can set a basic mix and then hand off mixing duties to the individual performers. That reduces some of the headaches that plague FOH engineers saddled with the responsibility of mixing monitors. One could even make the case that a monitor engineer is no longer necessary. If each band member runs their own mix, what's the point of paying a monitor engineer (and possibly paying for their hotel room)? No one knows better than the performer what they need to hear in their own mix, so why not cut out the "middleman" and let the performer do it?

## » The Bad

I'm not entirely convinced that giving performers control of their own monitor mixes is such a great idea. First and foremost, it's a distraction. Do we really want to see a musician stop playing (or worse, stop a show) so that they can fiddle with their tablet to adjust their in-ear mix? There's a reason that musicians get paid to do what they do, and there's a reason engineers get paid to do what we do. Just as a musician practices to become adept at their instrument, we develop chops on our instruments (a.k.a. our mixing consoles). Those chops — which take years of experience to develop — range from understanding how to set the gain structure so that there will be room to make instruments louder, to applying EQ in an effort to reduce the audio muck that makes instruments difficult to hear in the monitors.

Anyone who's spent time with a particular mixing desk knows that there comes a point when you're familiar enough with the mechanics of operating it: you think about what you need to do and just do it. It's not all that much



Mackie's Master Fader, one of many manufacturer apps that offer tablet mixing of FOH or multiple monitor feeds. This particular example shows a commonly encountered performer mix featuring two maxed-out channels providing "me" and "more me."

different from a guitar player having the facility to play a riff that's in their head without thinking "Okay, I need to place the first finger of my left hand on the seventh fret..."

Most performers understand the basics of EQ, panning and setting balances, but do they really understand compression and gating? Do they really know what a "knee" control does, or how to set gain staging? We all know some experienced engineers who barely have a handle on that type of stuff. It's more than possible that sound quality of the monitor mixes will suffer when an inexperienced performer is running them. And when monitor

quality suffers, so does the performance.

An option would be for the FOH engineer to create a balance in the monitors and give the performer a "more me" mix limited to two channels: one for overall band volume and the other for the performer's instrument or voice.

## » The Ugly

What happens when something goes wrong during the show? Any number of technical problems can arise ranging from the traditional (feedback, mix balances changing due to changes in instrument volume on stage) to the high-tech issues we're dealing with these days (tablets losing their network connections or RF hits from interference, etc.)

Who will be there to deal with those problems? Definitely not the performers. Troubleshooting is where engineers earn their keep. A good engineer can recognize what frequency is squealing in a monitor and quickly solve the problem. Similarly, a thorough understanding of signal flow is invaluable when it comes to sidestepping problems in the heat of battle. Are the performers ready to coordinate frequencies for wireless IEMs and deploy the antenna? *Hmmm*. Maybe not.

There are plenty of situations facing bands where mixing their own monitors is a necessity due to budget constraints. Many local acts struggle to make enough money to pay a front-of-house engineer, let alone a monitor engineer. For those acts it makes sense to run their own monitors because there's no one else to do it. But where the budget permits, call a hit man and let them do their job.

Just because you *can* do something doesn't necessarily mean you *should* do it.

FOH

Steve "Woody" La Cerra is the tour manager and front of house engineer for Blue Öyster Cult. He can be reached via email at woody@fohonline.com.

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By Dan Daley

# Getting Immersed in It All

“Immersive” is the media buzzword *du jour*. Museums use multiple projectors to envelope us in images of the past while IMAX is nearly curving its screens around the audience for sci-fi. The broadcast mavens have approved Dolby’s Atmos system, which can output somewhere north of 22 speaker channels for television, by adding four ceiling speakers to existing surround configurations (the shorthand for that is 5.1+4 or 7.1+4, etc.). We were already surrounded; now we are to be immersed. And that’s now poised to extend to concert touring sound.

A bit of an arms race is already in the making around live immersiveness. L-Acoustics’ L-ISA — the acronym is for Immersive Sound Art, the live-sound iteration is known as L-ISA Live — is considered the frontrunner at the moment, with the 64-channel system accompanying Lorde on her recent *Melodrama* tour and French singer songwriter Renaud on a 50-date swing through Europe in 2016-2017, as well as for several shows by Childish Gambino and American electronic duo Odesza, among others.

Other speaker manufacturers, meanwhile, are hot on the trail. d&b Soundscape, from d&b audiotechnik, had its beta testing during part of a tour last year the electronic-music band Kraftwerk. Since then, the system, which is based on its Dante-enabled DS100 Signal Engine and two software modules:



For some of Childish Gambino’s shows last fall, Britannia Row provided L-Acoustics’ L-ISA Hyperreal Sound technology.

Broadway theaters, for touring applications.

(Special shout out here to Sennheiser, whose AMBEO immersive system, while perhaps not aimed exactly at touring, has done some cool traveling installations, such as *The Pink Floyd Exhibition: Their Mortal Remains* in both London and Sydney, with a 17-channel AMBEO mix of the track “Comfortably Numb” played back through 25 loudspeakers, to recreate the original live experience of the song of the Live 8 concert.)

## » To Jump Or Not To Jump

Every bandwagon deserves special scrutiny — remember 3D televisions? Some pretty big consumer electronics names jumped on that one. But immersive sound is different: Consumers had already demonstrated an affinity for the idea of immersiveness a few years back when everyone was suddenly wearing headphones all the time, everywhere (remember Beats?). The idea of taking immersive audio out of specialized environments like IMAX cinemas and making it more widely available began to make more economic sense.

When it comes to markets to develop for live immersive-sound technologies, concert touring is a natural choice: the trend in that market has been towards the more spectacular, from syncing audience member’s wireless LED wristbands with the music to sending drones into the rafters (behind a net, of course). Since concerts have become the economic lifeblood of the music business in the last 15 years, shows have become increasingly competitive, with each tour looking for the new wow factors that will set them apart. Immersive sound is a perfect fit.

Unlike 3D TV, immersive sound has been proving itself in more predictable environments first, such as theaters and other installed applications. That does two im-

portant things: it gives the technologies a chance to test and refine themselves in safer waters before heading out to the sea of touring, and it also provides an opportunity to build a pool of live-sound engineers and system technicians who are familiar and comfortable working in an object-based environment. By the time immersive sound begins to hit the road at some kind of scale, there will be people ready to fly that plane.

Immersive sound will also do something else — it offers a way for live-sound brands to further differentiate themselves in a live-sound market that’s gotten crazy crowded lately, with more than double the number of top-tier brands in the touring markets today than a decade ago. That kind of supply is already putting pressure on pricing for tour-sound systems, on both manufacturers and on sound-reinforcement vendors. The appellation of “rider-ready” remains live sound’s gold standard of the moment, but any business can always use the creation of ever-higher tiers to help differentiate brands within it (remember when the Amex Platinum card got superseded by the Amex Black card, or when Delta Airlines created Diamond Medallion?) Immersive live sound could become the industry’s next tier of exclusivity.

## » An Idea With a Past As Well As a Future

On the other hand, concerts have been taking a shot at immersive sound for decades. Way back in 1967, Pink Floyd did the first-ever surround-sound concert, the psychedelically startling *Games for May*, at London’s Queen Elizabeth Hall, where the band debuted a custom-made quadraphonic speaker system developed with help from Abbey Road Studios. It was amazing, and then it was barely heard from again until resurrected for the aforementioned *Mortal Remains* retrospective (in what was, essentially, a museum setting).

Pink Floyd was pushing the envelope with four channels; the new immersive live-sound systems are looking at channel counts in the low to mid double digits. The current generation of high-end live-sound consoles can handle that. The question is, will touring be able to pull off an immersive effect that’s compelling enough to warrant the higher ticket prices that such immersive sound systems will initially require? The manufacturers will subsidize seeding the market to some extent in the early days, in order to build market share for their brands. If it indeed takes off with concertgoers, economies of scale will eventually bring costs and prices down as immersive sound becomes an integrated part of the concert experience. The next two to three years will tell the tale on that. As always, grab some popcorn, sit back and watch the story unfold. Who needs *Game of Thrones*?

FOH

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The Brevard Music Center Summer Music Festival’s performance of Leonard Bernstein’s *Mass* used d&b’s Soundscape.

d&b En-Scene (for sound object positioning) and d&b En-Space (a room emulator that will add and/or modify a space’s reverberation signatures), has done performances with post-minimalist composer Max Richter in Los Angeles and at the WOMAD festival in the U.K. Martin Audio is promoting Sound Adventures, its 3D immersive audio technology developed in partnership with Dutch-based Astro Spatial Audio; it’s being deployed in installed-sound applications initially, but will have touring applications in the future. And Meyer Sound Labs is gearing up a version of its object-based mapping system, initially developed for several of its earlier electro-acoustical systems, such as D-Mitri, and that has been deployed in venues such as



Pink Floyd’s Nick Mason and Roger Waters announce the Pink Floyd “*Their Mortal Remains*” exposition, which featured a 17-channel AMBEO immersive soundtrack played back through 25 speakers at London’s Victoria & Albert Museum.



# Buying or Renting? That is the Question...

It's a universal issue that transcends any type of business or project. Let's say you're putting in a raised patio deck on your house. Doing this will probably entail sinking a lot of holes in the ground for support posts. If your yard just happens to have soft, loamy soil, you could simply dig them manually, but if the earth is rocky or you have a lot of posts to sink, laying down \$50 for a half-day rental of a power auger will get the job off to a quick start — and probably save your back as well. Now you could just plunk down \$1,500 and buy and auger, but honestly, when are you going to use something like that again? And where will you store this beast before your next "need an auger" project?

Ironically, the same applies to church sound. And with the upcoming Lent and Easter seasons approaching, a common issue for the church technical director is deciding whether to buy or rent equipment for special services. When you're in need of additional equipment for a special set of services, should you rent the equipment you need, should you buy it outright, or should you do a bit of each? My first inclination has always been to "buy, buy, buy," but when you take a step back, buying is not always the best option in the long term. Carrying an inventory of expensive technical equipment costs money in maintenance and limits your long-term flexibility.

You must consider the duration of any potential rentals. Do you simply need gear for Easter weekend, or do you need it the entire week leading up to Easter, and maybe even the weekend before? How long will it take to integrate rental equipment into your existing systems? The longer your rental duration, the higher your rental costs, which might tip the scales in favor of buying.

### » First, Check Your Budget

The decision of whether to buy or rent comes down to your church's individual financial situation. If your budget is structured as a capital budget, where the money is earmarked



Large or small, every church needs to decide how to provide audio for seasonal events.

for purchasing new equipment, buying might be your best (or only) option. However, if your budget is structured as an operating budget, equipment rentals might be more attractive. My own experience at churches is that the tech budget's intended usage is not always clear. If you query five people about how your budget should be used, you'll get five different answers. Clarifying how your budget is the first step to making these types of decisions. Let's look at some areas where churches struggle with the question of whether to rent or buy. Here we're focused on audio gear, but video and lighting have similar considerations.

### » The Wireless Issue

Thankfully, we're past the 600/700 MHz FCC issues, but the reality is that churches typically, need to augment their available wireless mics and in-ear monitors for special services. Integrating additional wireless is always a challenge because you need the audio I/O capacity, the antenna distribution, and the ability to have the additional systems coordinated with any existing wireless on your campus. Unless you are absolutely certain that you'll be using new wireless systems on a regular basis, this is probably better rented than purchased. You don't want to be sitting on a large inventory of

unused wireless systems, and putting off major RF purchasing decisions until it's absolutely necessary may be a good idea.

One issue that may affect you is mics for wireless. I have a large inventory of headsets and lavaliers that lie dormant for much of the year. In the summer, we typically do a theatrical production that uses every last headset and lav we have available. During Lent and Advent, half of our inventory might be in use across multiple venues, but the rest of the year, they sit in plastic storage bins. These types of mics also happen to have high maintenance costs and are difficult to manage. Meanwhile, little pieces like wireless adapters that are expensive and easily lost or broken. The moral of the story is, unless you've got a use for a bunch of bodypacks, headsets and lavs (and the budget to maintain and repair them), rent these as much as possible for special events.

### » More Inputs, Please

Some of us have the luxury of scaling our digital console's I/O up and down depending on our needs at any given time. I can remember several years of submixing orchestra inputs on a second console and busing stems into my main console for Christmas concerts. Thankfully those days are gone. Even modest

digital consoles can add remote I/O via Cat-5e, coax or fiber. This is where things can get tricky, because the cost of renting stage racks is rather high. If you find yourself needing to rent additional I/O two or three times a year, it is probably smart to consider buying. If you have the means, buy a card-based modular I/O rack. That way, as your needs grow, you can add input or output cards to your system, usually in increments of eight channels per card.

### » Communications

Larger productions require more intercom in more locations, and sometimes require wireless intercom that you may not already own. The first consideration is to look at your existing intercom inventory. Is your intercom system a party line system or a matrix? Do you need party line or point-to-point communication? I'd venture to guess that the vast majority of churches use party line intercom systems, with only the largest, most high-tech churches using an intercom matrix. If you have a party line system, it would be advisable to stay in the party line world and add additional belt packs or user stations as needed. If you've got an intercom matrix, renting keypanels is a viable solution if you have the wiring infrastructure to support them. And in either case, if you need to add wireless intercom, it can be integrated easily into a party line or matrix system if you have the capacity to do so.

### » The Decision

I've always been the type of person that wants to buy everything, and always viewed renting as a "waste of money." However, when you consider the cost of ownership for the gear we use, things aren't quite as clear. Take a close look at your church's needs before making these types of decisions for your big productions. **F•H**

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FOH-AT-LARGE

# On a Personal Note

Indulge me if you would because, at my age. I am beginning to see the story of my life. This vista comes complete with a new found ability to look back and either applaud or rue the many past decisions that have led me to the current space I now occupy in my small corner of the great unknown. My life in 2018 was rather stationary, but the lives around me were in motion as my daughter got married, my son started medical school and my wife opened her own medical practice. After 18 years, I am still doing my bit to add to the ever-growing audio department at S.I.R in New York, and I am also proud to say that I am now starting my 18th year also as a writer for *FRONT of HOUSE*.

One change that did occur for me? This past New Years Eve, I welcomed in 2019 as a guitarist in a band, and it marked the first time since 2000 that I have worked on a New Year's Eve. Starting in the early 1970's, I prided myself for managing to work every year on that coveted high-paying night. They were fun times indeed. I was doing what I liked to do, getting paid double for doing it, and being a part of the party as well.

## » The Good Olde Days

Back in the 1970's, we had an old 14-foot beer truck we used to cart our gear to and from gigs. The truck was a necessity, as most clubs at the time were devoid of any type of audio, and we were required to carry our own sound system to ensure a decent quality of sound. We started with Shure Vocal Masters and worked our way up to a couple of Altec Lansing cabinets stacked per side, with either a JBL horn or the Altec horn on top.

At the time, there weren't a lot of mixing consoles to choose from, but in 1975, we bought a second-hand 16-channel Stramp console. Stramp was a German company that made sound reinforcement gear, and it turned out to be a decent board, and it was the board on which I first learned how to mix. We would set the console up by the side of the stage, and I would play and mix at the same time. The band finally worked its way up to hiring an engineer, but after a year, the band broke up, and I moved back to New York City.

## » Doing the Sound Circuit

By the early 1980's, I was doing sound at

ILLUSTRATION BY ANDY AU



The Bitter End in New York as a way to supplement my income as a musician. Come New Years Eve, I usually found that I had a choice of either playing or mixing for the big night and, unless it was a great playing gig, I began to opt more for sound gigs, since the money offered to me was always better as an engineer than that as a player. On a few of these yearly gigs, I was even able to mix and play in the band, as it doubled my pay, and because I could.

By the mid-80's, I was never at a loss of work, as I was doing sound at many of the New York clubs. Not only was I working at The Bitter End, but I was also picking up gigs at The Blue Note, The Bottom Line, The Cat Club and The Village Gate, to name a few. At the same time that I was honing my engineering and production skills, I was playing guitar with blues legend Sonny Terry and also Melanie — the iconic star from the Woodstock Festival. Other than that, there were the one-off playing gigs, some studio engineering as well as mixing live auditions for the TV show *Star Search* — a talent-show precursor to *American Idol*.

During that time, I was also working and traveling as an engineer for jazz luminaries

such as Tania Maria, Eddie Gomez and Herbie Mann. It was an exhilarating time as I traveled between Europe, Canada and the United States, alternating between playing and engineering. In 1987, I got married and was still on the road as an engineer, but I was also working as arranger and music director for the singer-songwriter Wendy Wall. We were signed to a record deal with SBK/EMI, and started the recording in 1989 — a mere two weeks after the birth of my daughter. It was a great time, as we worked with some amazingly talented people and traveled around promoting the album — we even had the opportunity to play The Letterman Show and do a short tour opening for Michael McDonald.

## » New Horizons

In 1991, my son was born, and along with that blessing I was offered the position of audio engineer at Tramps in NYC as they expanded the club on 21st Street in Manhattan. I had the chance to work with and mix many top-name artists while managing the audio and production for the club, and in the summer of 1996 I expanded my horizons while holding

down the FOH position for New York's Central Park Summer Stage. During those years, I was also able to do a bit of roadwork mixing sound for Chaka Khan and Lou Reed as well as doing shows at Town Hall and The Beacon Theater with Tramp's promoter Steve Weitzman. By 1999, Tramps was coming to an end and as we were working towards our demise, I was staying busy doing production work for the Bell Atlantic Music Festival as well as doing a 10-week Allman Brothers/NASCAR tour. For promotional reasons, NASCAR had attached itself to the Allman tour, and for 10 weeks, I wore the mantle of engineer/production manager for the NASCAR bands on the second stage.

When Tramps, Bell Atlantic and the tour came to an end, I decided I wanted to see more of my family and less of the road so, for a year, I bounced around a couple of venues and even a regional sound company until I landed at S.I.R., where the fit was just right. I'm not recounting my adventures because I think that my experiences are all that amazing or unique. Throughout the years, I have had the pleasure of working with and knowing many engineers, musicians and producers with more impressive lives and resumes than my own, but as I welcomed in the New Year on the upstage side of the microphone, I began to reflect upon the 40-year-old body of work that I created, which is still a work in progress.

## » A Little Sage Advice


I'm not ready to retire as of yet, and since most of the techs and musicians I work with are now younger than me, I'd like to think that I can offer them good advice on navigating this life they have chosen for themselves. Most of my advice would be anecdotal, as so much has changed over the last few decades, but while the opportunities and technologies have been updated, there are a few things that remain unchanged. Even though the tools are different, the fundamentals to success stay the same. A proper gain structure is still a requisite for the sound engineer; playing in tune is a necessity for a guitarist; and the difficult task of maintaining a balance between a professional life and one's personal life is definitely a mandatory requirement for anyone making the choice to follow this path. FOH

Contact Baker Lee at [blee@fohonline.com](mailto:blee@fohonline.com).

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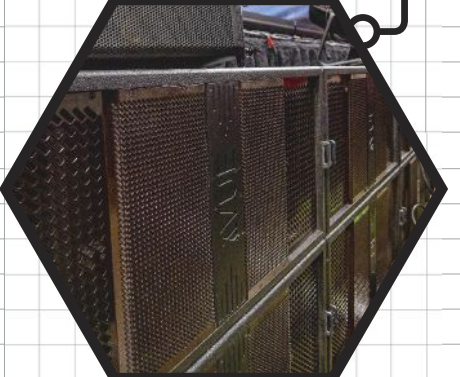
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