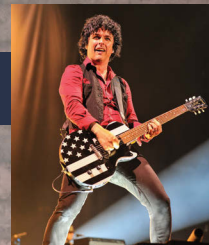


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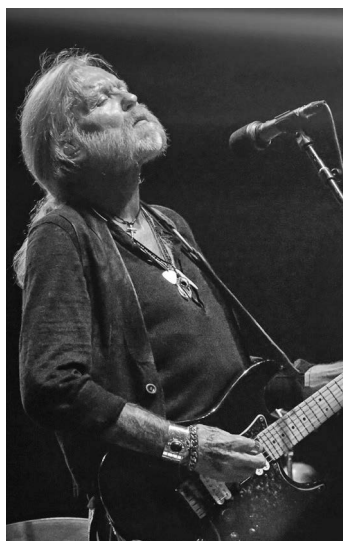
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On the Cover: In the alley behind Germano Studios, lower Manhattan, some of New York's finest recording professionals pose for their version of a classic Ramones album cover. Front row, L-R: Kenny Laguna, Paul Adams, TG, Malay Ho, Kenta Yonesaka, Jon Haber. Back Row: Steve Jordan, James Brown, Joan Jett, Jason Staniulis, Dave O'Donnell. **Photo:** Bob Gruen

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EDITORIAL

EDITOR Tom Kenny tkenny@nbmedia.com
MANAGING EDITOR Barbara Schultz bschultz@nbmedia.com
TECHNICAL EDITOR Kevin Becka kbecka@me.com
DIGITAL EDITOR Kieran McGee kmcgee@nbmedia.com
TECHNOLOGY EDITOR, NEWBAY MEDIA
Strother Bullins sbullins@nbmedia.com
FILM SOUND EDITOR Larry Blake swelltone@aol.com
SOUND REINFORCEMENT EDITOR Steve La Cerra
CONSULTING EDITOR Paul D. Lehrman paul.lehrman@tufts.edu
CONTRIBUTING EDITORS Michael Cooper Eddie Ciletti
Gary Eskow Sarah Jones Barry Rudolph Matt Hurwitz

PUBLISHER, NEWBAY MEDIA PRO AUDIO GROUP
Janis Crowley jcrowley@nbmedia.com

ADVERTISING

Kim Sarni ksarni@nbmedia.com
Joanne Melton jmelton@nbmedia.com

SPECIALTY SALES MANAGER

Zahra Majma zmajma@nbmedia.com

ART & PRODUCTION

ART DIRECTOR Todd Berkowitz tberkowitz@nbmedia.com
PHOTOGRAPHY Steve Jennings, Todd Berkowitz
PRODUCTION MANAGER Beatrice Weir bweir@nbmedia.com

NEWBAY MEDIA AUDIO GROUP

EXECUTIVE VICE PRESIDENT/GROUP PUBLISHING DIRECTOR
AV, CONSUMER ELECTRONICS & EDUCATION DIVISIONS
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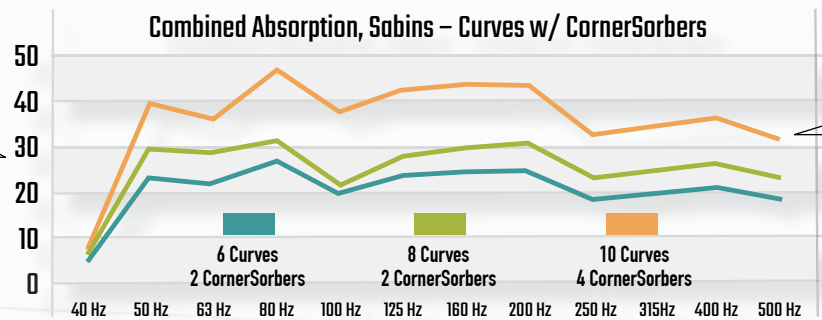
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From the Editor

WHO'S ON YOUR TEAM?

As a parent, I learned around the time my two daughters entered middle school that it was time to start paying closer attention to who they ran around with. Not to judge, and not to forbid or promote any particular individual. They would find their own way, make their own mistakes and celebrate their own triumphs, with their own friends, same as I did growing up. I just wanted to pay attention because I knew that teams matter. I knew that who we choose to spend our time with has a great deal of influence on who we are, whether personally or professionally.

I am reminded of this time and again in my travels through the audio industry, which seems to be fueled by the very formation and implementation of “teams.” Tours have road crews, film and television have groups of sound editors and mixers, studios have engineering staffs, manufacturers have product development teams, and labels have project and artist management pipelines involving dozens of people across multiple cities. Every project is a production, and every production needs a trusted team to succeed.

I was especially reminded of this in mid-September during our Mix Presents Sound for Film & Television event, on the Sony Pictures Studios lot in Culver City. The day ends with an evening Sound Reel Showcase, where we run eight-minute reels from 10 big films, in Atmos, featuring some of the year's best in sound design and mixing. In assembling the credits list to pass out the audience, I left off two key names. I told the audience, of course, and apologized, but I still felt terrible. For an editor, that is just plain bad. And it's especially egregious when crediting a post-production sound crew, where a supervising sound editor's team is everything—from trust in the dialog editor, to reliance on Foley, to confidence in the stems delivered by the composer and music editor, on to the artful impact of the re-recording engineers.

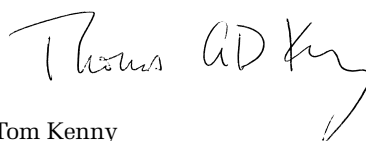
It's really no different in music recording; there are just fewer job titles, and the contributions often come from many different directions. When an artist goes into a studio, the studio becomes the focus and the song gets recorded. But before any of that happens, there can be songwriters, arrangers, orchestrators,

managers, engineers, producers, assistants, marketing types, console makers, software developers, equipment dealers, studio designers, friends of the family and a wide range of varied and other services that have a part, no matter how small, in creating that sound.

That's the team, and every team is different. On the cover this month, in an effort to recognize and represent the range of characters that might contribute to a recording project, we asked longtime New York City studio owner and music industry veteran Troy Germano about his team, those people who have helped him in his career and who help fuel the industry, often unrecognized. Here we have a small sampling of some big-time professionals, from Steve Jordan to Joan Jett, from Dave O'Donnell to Jon Haber, each of them selected because of their relationships over the years. There are many, many more New Yorkers equally worthy of inclusion. This is simply a Bob Gruen snapshot of a day in the life. A New York moment.

Troy Germano, admittedly, has a pretty sweet Contact list in his phone, and he has a rich history at the heart of the New York recording scene from age 6. He ran around with Julian Lennon as a child, and his team sometimes includes Keith Richards, Lady Gaga or Ryuichi Sakamoto. But that's not the point. Developing long-term relationships and assembling a team that you trust, in both your personal and professional affairs, is one of the foundations of living a successful life. No matter where you ply your craft, no matter the size or scale, the team matters.

And yes, my daughters gravitated toward some true and good friends, from all types of backgrounds, and are now both out of graduate school and adding to their own teams. They're figuring it out, and I couldn't be prouder. I hope they never stop.



Tom Kenny
Editor

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Welcome to AES

The Audio Engineering Society's 143rd international convention begins this month at the Jacob Javits Convention Center in New York City, with hundreds

of exhibits on display October 18-20, and programming continuing through October 21. The theme of this year's show is Maximum Audio, and the AES aims to present essential information about new products and technologies to every segment of the audio industry. For example, the game audio and cinema audio programming has been expanded to include presentations on new approaches to virtual reality/immersive audio.

Of course, extensive programming is planned to explore the latest product developments and technologies, as well as special "Expos" for project studio owners, concert and Broadway sound mixers, and broadcast pros, who will also benefit from the National Association of Broadcasters' (NAB) decision to co-locate their New York convention at the Javits Center October 18-19.

To learn more about the 2017 AES show and plan your visit, go to aes.org/events. ■

the sound teams behind *Game of Thrones* and *War for the Planet of the Apes*; Dolby's exhibition of tools for everything from Cinema to Home Theater to Atmos for Pro Tools; Meyer Sound's introduction of the remarkable new Bluehorn speaker system; Yamaha's introduction of Nuendo 8, Line 6 Helix Native and Steinberg's Cubase system; and Formosa Group's presentation of the Sound Reel Showcase.

Event partners MPSE and CAS, along with sponsor Westlake Pro, assisted in the development of the main panel series, dedicated to creative design for new workflows and formats. Additional sponsors included Focusrite, Sound Particles, RSPE Audio & Video, Auro 3D, Audionamix and Fortium/MediaSeal. ■



Power Station New England Reopens

Power Station New England (Waterford, Conn.) has completed major refurbishments with the commission of two new consoles. "Sonalysts [the company that owns the facility] decided it was

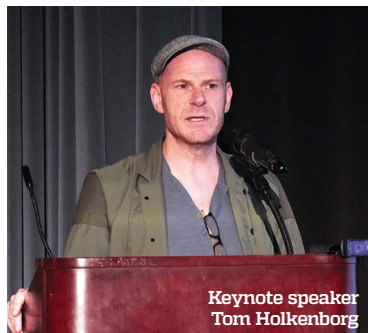
time to reinvest into the studio, to keep this a relevant studio and functioning at the highest level," says chief engineer Evan Bakke. "They landed on an amazing tracking console and an amazing mixing console."

PSNE's new mixing board, an SSL 4064 G+ formerly owned by Royaltone in L.A., is installed in a new B studio known as the Mix Room, while the Neve 8068 MkII serves the studio's tracking room, a full-scale replica of the original Power Station Studio A in Manhattan. (The original Power Station, which later became Avatar, was recently acquired by Berklee College of Music. See page 42.)

Coincidentally, both the new Neve board and Bakke are Minnesota transplants. "The console used to be at the Pachyderm Studio, south of Minneapolis, and I actually worked on this board in Minnesota," Bakke says.

While the design of Studio A remained intact, to accommodate the new console installations Redco Audio re-cabled control room A, including all patchbays and connections to the tracking studio. In addition, Vintage King provided a host of new equipment, including a Pro Tools 56-channel HD-X system; 56 Channels of AVID HD I/O; API 3124, Mercury m72, Chandler TG-2 and Shadow Hills mic pre's; and additions to the studio's impressive mic collection, including a Bock 251, two Coles 4038s, two Flea m49s, Neumann m269c, two Neumann U47s, two Neumann U67s, an AKG C12, an AKG C24 and two Royer 121 ribbons.

"I've worked in many studios, and this is one of the finest studio I've worked in," Bakke says. "The staff is awesome, and the sounds coming out of the studio are incredible. Also, the scenery is right on, where the Atlantic Ocean and the Long Island Sound meet. It's a perfect place to turn off the outside world." ■



Mix Presents Sound for Film & Television

More than 550 audio professionals descended on the Sony Pictures Studios lot in Culver City, Calif., on September 16 for the fourth annual Mix Presents Sound for Film & Television. From the opening remarks by keynote speaker Tom Holkenborg (aka Junkie XL) to the evening's screening of ten reels from top films at the Sound Reel Showcase, the day was centered on creativity and workflow.

"The level of programming and the interest shown by attendees in how to produce soundtracks that have impact on any-sized screen was just stellar this year," says Tom Kenny, editor of *Mix*. "We had Oscar-winning sound designers talking about prepping tracks for Dolby Atmos, and we had composers explaining how they work in every type of project, from documentaries to VR. We had the great Mark Isham there with his engineer, Jason LaRocca, to close the show! It was a great day all around."

The event, which is spread out across the re-recording and editing facilities of Sony, included the all-new Composers Lounge this year, along with the popular Production Sound Pavilion, featuring the audience favorite Parade of Carts.

Sponsor-based programming included Avid's presentation of

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Music



FOO FIGHTERS

By Anthony Savona **12**

GREGG ALLMAN

By Sarah Jones **16**

CLASSIC TRACK:

"WALKING ON SUNSHINE"

By Barbara Schultz **18**



L-R: Taylor Hawkins, Pat Smear, Dave Grohl, Rami Jaffee, Nate Mendel, Chris Shiflett

Photo: Brantley Gullerrez

NEW FOO REVUE

Powerhouse Producer Greg Kurstin Brings a New Sound to the Foo Fighters **By Anthony Savona**

When it came time to record the Foo Fighters' new album, *Concrete and Gold*, frontman Dave Grohl knew he wanted to do something different—again. The band's previous album, *Sonic Highways*, featured songs written and recorded in legendary studios across the country, and had its own HBO series to accompany it. Then the Foos surprised fans with the sudden release of their *St. Cecilia* EP. So what could they do next that would challenge the band and excite the audience?

Grohl found the answer by joining forces with

pop producer Greg Kurstin, who also happens to be half of the musical duo The Bird & The Bee, and Grohl is a huge fan. "So I think, maybe Greg is the guy that we ask to be our producer because he's never made a heavy rock record before and we've never worked with a pop producer," says Grohl; the idea was to combine "our noise and Greg's big brain and all of his sophisticated arrangements and composition."

"Dave asked if I'd be into working on this album with them and I was really excited," adds Kurstin. "Especially when we talked about how much they wanted to push the sound and go nuts."

Kurstin, the multiple Grammy-winning producer of chart-toppers such as Adele's "Hello," Sia's "Chandelier" and Kelly Clarkson's "Stronger," brought the band into Hollywood's EastWest Studios, which was an obvious choice for Kurstin: "We had an idea of setting up a bunch of different kinds of drum kits all miked up—some big and open and some tight," he says. "We needed the right-size room [Studio 1] and I'd always had a great experience at EastWest. There's great history there; *Pet Sounds* was recorded in Studio 3, as well as all of the great Wrecking Crew sessions that happened in that building."

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The Foo Fighters listen to a mix at EastWest Studios with producer Greg Kurstin (seated, left).

Photo: Simon Rejzbaum



EastWest's Studio 1 boasts an 80-channel Neve 8078 console that was originally commissioned for Michael Jackson's *Thriller*. To complement this historic board, Kurstin and engineer Darrel Thorp brought in some of their favorite effects. "Darrel brought in the SPL Kuwltube and Overstayer NT-02a, which sounded great on drums," says Kurstin. "I was focused on freaking out the sounds, so I brought the Roland RE-201 space echo, Mu-tron Bi-phase, and an A/DA flanger, which were used a lot. They also have this great '60s fuzz/wah—kind of like a Shin-ei but sounds different. I'm not sure what the make is, but it's gnarly."

LENNON MEETS LEMMY

Those effects help make a noticeable difference in the Foes' approach throughout the making of *Concrete and Gold*, giving the songs a more lush and layered sound than their previous albums, and helping them to achieve Grohl's stated goal of creating "Motorhead's version of *Sgt. Pepper*...or something like that."

In fact, the tunes on *Concrete and Gold* evoke many musical influences. "I think it's a combination of so many things," says Kurstin. "There's a lot of layered vocal parts, which reminds me of *Pet Sounds* or [The Zombies'] *Odessey and Oracle*. I'm always a sucker for how live instruments were manipulated on '70s Berlin albums such as Iggy Pop's *The Idiot*. There are so many other influences here and there, but not always intentional—we were definitely drawing from the albums we grew up listening to."

For Kurstin, a big difference between working with a rock band and producing pop vocalists is that he could take a break from building the tracks himself. "Working with a band like the Foo Fighters, they are completely self-sufficient," he says. "They play great with each other, so I'm searching for other ways to help with the arrangement or the overall sound. I'm able to just listen as they're playing, which brings a whole different perspective."

The band dynamic played a big part in how Kurstin and Thorp recorded the tracks. "I think the overall sound comes from the band's big and raw guitar/drum sound," says Kurstin. "On some songs, there're distant mics on the amps to get the room. Darrel did that on the song 'Concrete and Gold,' and I wanted it on almost everything after that."

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INSIDE

"Taylor [Hawkins, drummer]'s playing is really powerful and we wanted to make sure we always had the right kit and snare. The drum miking is more on the minimal side. I was doing my best to freak out sounds with pedals or using the EastWest chamber on vocals and guitars. Darrel's way of mixing everything together sounds massive. All together we landed on this particular sound."

Another track, "La Dee Da," features a particularly deep sound, with multiple vocal tracks, distortion, and echo. "We started that track with Dave and Taylor playing in the room together," says Kurstin. "We wanted to get the guitars and bass really fuzzed, so we used various guitar pedals and would overdrive the mic pre to get it as buzzy as possible. Space echo did all of the tape feedback sounds."

SUNG FOO

Kurstin's impact can really be heard on Grohl's vocals. "A lot of the time we would use a Neumann U47 for Dave and sometimes blend in a cheap little mic that came with this early '70s reel-to-reel tape recorder," explains Kurstin. "Anything you hear that is reverby is from the chamber at EastWest. Darrel had slap echo going on some things. On 'The Sky Is a Neighborhood,' recorded in Studio 2, we first attempted the Bowie 'Heroes' multiple-gated-mic technique, but ended up liking the sound of the roomy,



far away mic, so that's what you hear on that one."

The song "Dirty Water" introduces even more new dimensions to a Foo tune, including female backing vocals and a synthesizer track. "Inara George, from my band The Bird & the Bee, does a lot of the backing harmonies on this one, along with layers of Dave," says Kurstin. "I love working out vocal arrangements, and Dave's guitar chords are so great, so there were a lot of possibilities for counter melodies and harmonies."

"The beginning of that track is Dave playing guitar into an iPhone in the EastWest parking lot," says Kurstin. "At the end of the song, there's the Gary

Numan-ish Minimoog synth doubling the guitars. The two parts play off each other. We loved how the song gets so much louder when it kicks in at the end, and made sure to keep that in mastering."

Concrete and Gold is a perfect example of music pros merging their skills to create something neither could do alone. It required an open mind from all parties, and a trust in their talents and practices.

"I think it's most important to keep listening," says Kurstin. "I don't want to label what the song is going to be or sound like too early in the process. Keeping an open mind and letting things unfold is more exciting. I'm always surprised. Nothing ends up exactly the way I imagined, and I love that." ■

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'SOUTHERN BLOOD' SESSIONS

Gregg Allman Returns to Muscle Shoals to Record His Musical Farewell

By Sarah Jones



Photos: Travis Vautour

Gregg Allman passed away in May, but he left behind an eternal musical legacy. *Southern Blood*, Allman's farewell gift to fans and loved ones, is meant to tell the story of his life. Soulful, spirited, vulnerable and defiant, it's a profoundly moving, honest reflection on his experiences, good and bad, and his feelings about leaving the world.

The album was recorded at Muscle Shoals' legendary FAME Studios, produced by Don Was and recorded by Don Strygley, with assistance by John Gifford III and Spencer Coats.

For Allman, returning to Muscle Shoals was coming full circle to the place where he and his brother, the late guitar great Duane Allman, cut some of their earliest tracks nearly 50 years ago. "He's tried to have a connection with Duane

through his career," says FAME general manager Rodney Hall. "He wanted to come back and do what he knew was going to be his final album."

Still, Was notes, "Even though there is an unusual amount of gravitas attached to this particular album, the producer's role didn't stray too far from basic principles. You're there to help the artist realize his vision: Make sure the songs are great and that the artist has room to phrase with a full range of expression."

Southern Blood's ten tracks—including songs written by Bob Dylan, the Grateful Dead, Willie Dixon, Lowell George and Jack Avery—speak to Allman's roots in blues, country, soul and rock. It's an expansive range of styles, yet a cohesive, organic feel permeates the tracks, unified by Allman's transcendent vocals, live performanc-

es by Allman's longtime touring band and the signature sound of the studio itself.

Sessions were cut live, through a Neve 8232 console to 2-inch tape. The musicians crowded into Studio A, with most of the players on the floor; guitar amps were placed in a former echo chamber-turned-storage-room and miked with Shure SM57s, Royer 121s and an 87 placed back; the horn section packed around a single U87 microphone in another booth.

With up to 11 players in the room at one time, there was a lot of bleed—which was key to the sound of the record. "What you hear is what happened in the room," says Strygley, who has recorded many sessions at FAME over the past 27 years. "I used as little EQ as possible; I just wanted to document it."

The sessions pushed FAME's channel inputs—and mic collection—to the limit. "It wasn't like, 'I want this mic here and this mic there,'" says Srygley. "It was like, whatever mic we have left, put it up. I had to swap mics back and forth because we were so short."

As with so many iconic vocal recordings, capturing Allman was simple and straightforward. "Gregg was a badass singer—one of the all-time great American vocalists," says Was. "He kinda spent his whole life specializing in raw expression...so, with a brilliant artist like that, you're already way ahead of the game when the tape starts rolling."

Allman sang in the main room when he played guitar or Hammond, and occasionally sang in a vocal booth, always aiming for a natural sound. "Starting out, I had a favorite kind of vocal mic that I liked," says Srygley. "It was a little too crisp and up-front for him; I basically ended up using an

from liver cancer, so unfortunately he did not live to see *Southern Blood* released last month. "I know I'm lucky to have been able to work on this record," says Srygley. "I'm really proud of the way it sounds."

"Gregg was surrounded by a really supportive and generous cast of musicians, engineers, management and friends, and all of them played a significant role in this record," Was says.

For Hall, son of FAME Studios founder Rick Hall, the studio's role in this musical legacy has hit home in surprising ways. "My son is 17; he comes in and does jobs for us from time to time," he says. "We were putting tapes away in the vault, and we had Gregg's tapes. He said, 'Where do you want to put them?' And I said, 'Well, put them there in alphabetical order; put them right there.' And I realized he was putting Gregg's tapes right next to Duane's, and I got chills." ■



Band and crew members: Ron Johnson, Pete Levin, Jay Collins, Allman, Rick Hall, Don Was, Art Edmaiston, Scott Sharrard, Marc Quinones, Marc Franklin and Steve Potts.

87 on his voice." Allman's vocals were sent through the console preamp and a Tube-Tech CL1-A compressor.

An emotional moment came during the recording of the last verse of Jackson Browne's "Song for Adam," which was particularly dear to Allman because it reminded him of his brother. When he got to the line, "Still it seems that he stopped singing in the middle of his song," he became too choked up to continue; everyone agreed to wrap for the day, but Allman never got the chance to finish singing the verses. "Leaving them open seemed like a poignant and poetic way for him to make his exit," says Was.

Allman passed away in May from complications



In FAME Studios, L-R: guitarist/musical director Scott Sharrard, Allman and engineer Don Srygley.

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Classic Tracks

By Barbara Schultz



"WALKING ON SUNSHINE"

Katrina and the Waves

A song is in select company when listeners know it from the drum intro. Hits such as "Superstition," "Get Off of My Cloud" and "Wipeout" come to mind. In 1985 this month's Classic Track, "Walking on Sunshine," that smile set to music, joined those ranks.

The band Katrina and the Waves evolved from an English group called The Waves, which included guitarist/songwriter Kimberley Rew and drummer Alex Cooper. The Waves were together for a couple of years in the 1970s and then disbanded when Rew left to join Robyn Hitchcock's band the Soft Boys in 1978. Meanwhile, Cooper joined a cover band called Mama's Cookin', which featured American-born singer Katrina Leskanich.

When the Soft Boys called it a day in 1981, Cooper reconnected with Rew, and a band comprising Rew, Cooper, Leskanich, singer/guitarist Vince de la Cruz and bassist Bob Jakins reclaimed the name The Waves. (Note: Jakins left The Waves soon after and de la Cruz became the bass player.)

In the new Waves lineup, Rew would put his writing talent to work on original tunes for Leskanich to sing. When sessions began for the group's first LP, they changed their name to Katrina and the Waves. The songs on the album were written by Rew and recorded on the band's own dime, with engineer/producer/musician Pat Collier. That first album, *Walking on Sunshine*, included the first recorded version of the song.

"Until about 1980, I'd been playing in bands. I played in a punk band called The Vibrators and then I had my own band called The Boyfriends, and that finished around '80," Collier says. "I had a small studio in a rehearsal room, which started as a 4-track room, but then it went to 8-track and then 24-track. I was recording indie records, and that's how I met Kimberley when he was in the Soft Boys. That rehearsal studio was called Alaska; it was in a railway arch under Waterloo Station [London], so it was incredibly noisy and damp and very horrible.

"Alaska Studios is still there to this day," Collier continues. "That had a Soundcraft 1624 desk and a Soundcraft multitrack machine—very limited gear, very limited mics, very limited everything. We also worked in my other studio, which was much more spacious, in a more sensible building. That was Greenhouse Studios, and it also had a 1624 desk as well as a 3M M79 machine and a little more gear, but not much: dbx 160s, a couple of Neumann U87 microphones, but it was mainly Shure 57s.

"The majority of what we did was in Greenhouse. They would always record as an entire band. They might patch and repair stuff after. They would always do the vocal again. But the basic thing was live."

Collier recalls that on all of the sessions he had with KATW, "Guitars would have been one 57 bang in the middle of the speaker." On drums, he used 57s on snare and toms, though overheads may have been AKG C414s. On kick, he put up an AKG D12. "There were no room mics on that session," Collier says. Everything went through the mic preamps in the Soundcraft board.

Leskanich overdubbed her lead vocal into a U87, which went through a dbx 160 compressor. "I'd always get Katrina to run it through, [then I'd] set the level, set the compression and say, 'Let's get the take,' at which time the volume would double, the compressor would go off-scale, and the tape machine would go into the red. Basically Katrina did one-take vocals that were amazing, and I'd say, 'It's too loud,' and the band would say, 'It sounds great!' It was way hotter than I would have liked, but there you go."

On "Walking on Sunshine," horn parts were also overdubbed, in addition to the "organ" played by Nick Glennie-Smith in Alaska Studios. "That sounds like a Hammond, but I think it was just a sampling keyboard—probably an Emulator," Collier says.

The album was picked up by a small Canadian label Attic Records and got most of its play in Canada. Attic Records and Collier also helped them make a second album, *Katrina and the Waves*, and after that second album released, things really began to look up: Capitol Records signed the band with the idea of releasing a selection of songs from both records, as a new album that would be widely promoted.

However, Capitol wanted some of the songs—particularly "Walking Down to Liverpool" and "Walking on Sunshine"—to be "tarted up," as Collier says, to make them more single-worthy. And the bandmembers were dissatisfied with the drums on "Walking on Sunshine." "So, we did loads of versions; we just kept going round and round in circles. We kept redoing it nonstop," Collier says.



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Ultimately, the label decided to outsource a remix. The tracks were handed off to engineer/producer Scott Litt at the Power Station in New York City.

At that time, Litt worked freelance, but he had served on the Power Station engineering staff from 1978 through 1983. Just weeks after starting his New York engineering career at Herb Abramson's A-1 Sound Studios, Litt had taken a walk over to the Power Station with his resume in his hand. He was greeted by a receptionist and studio co-founder Bob Walters, who just happened to be in the lobby.

"Bob said, 'We don't take resumes,'" Litt recalls. "But he looked me up and down and asked me a few questions, and then to my amazement, he said, 'Come back tomorrow and we'll let you sit in on a session. Just keep your mouth shut.'"

The next day, Litt visited Power Station's Studio B, where Nile Rodgers and Bernard Edwards of Chic were producing Sister Sledge's track "He's the Greatest Dancer," with engineer Bob Clearmountain manning the Neve 8068 board. The sound of that production coming through the studio's Altec Big Red mains blew Litt's mind, but he kept his mouth shut, and that earned him a job as an assistant.

It was only weeks before Litt jumped from assistant to engineer at Power Station, after being asked to fill in when another engineer got sick in the middle of tracking a Herbie Mann album. Litt built a reputation as a reliable and innovative engineer and then as a producer. He went freelance, but he still worked on plenty of projects at Power Station.

"Remixing tracks was a newer way of working then," Litt recalls. "The usual way was for one person to do everything from recording through mixing. One of the first jobs where I was hired to remix was Katrina and the Waves' first album for Capitol. The band had come from London to the U.S. to meet with the record company, maybe finalize artwork, but also to be in New York while I mixed the record. We did it in Studio B, which I had an affinity for since that first day at the studio."

When Litt first heard first "Sunshine," he says his overall impression was that the song was mainly finished, but the version he was given had a drum machine that needed to be replaced with real drums. This possibly seems a bit surprising, considering how hard Collier and the band had worked on getting the right drum take.

"Scott is probably correct to say that drum machine sounds were used in the drum recording. At that time I would routinely trigger bass drum and snare sounds from a Linn Drum 2 to bolster the real drums," Collier explains. "It is entirely possible that I only printed the Linn Drum sounds for bass drum and snare, as tracks were at a premium."

"The main problem with the drum recording, though, as replaced by Scott, was that Alex, having had one last go at doing the drums in London, had pushed so far ahead of the beat that everything else felt way behind. When [Scott] pointed this out, it seemed glaringly obvious, but somehow the band and myself had managed to overlook this rather major point."

Regardless of what was on the tape from London, Litt did re-record the drums. He positioned Cooper in the back right corner of the studio. The kit was miked up with Sennheiser 421s on the bass drum and tom toms, an AKG 451 on hi-hat, and Shure SM57s on snare top and bottom. "I'd put the bottom one out of phase with the top because they're seeing the sound source from 180 degrees different angles," Litt says. "That was a great technique that Clearmountain used, not only on snare but on tom toms—miking underneath the tom and putting that out of phase with the top to get a deeper, more reverberant sound."

"And when we were working in a smaller room like that, room mics became not that big a deal," Litt says. "If there were room mics, they would probably be Neumann KM84s, only eight or 10 feet from the drums; I would gate that off the snare just to give more life to the snare."

"Alex did [the final drums] in one or two takes, and it was phenomenal," Litt continues. "All of a sudden the song exploded. As soon as the drums were done, that spurred us on to do more. I was flying guitars around. I put that intro on the beginning of the drums. At the time, one of my favorite songs was 'Wake Me Up Before You Go Go' by Wham, and that has a real R&B vibe to it, so that was a bit of an inspiration for me. You can probably hear it when you listen to it."

As for the sound of the drums themselves, "I'm sure the tricks that I used at the time, the mix ideas [involved] the live chamber; there's definitely a slapback on that, and I'm sure that would be a tape delay that I used on the drums," Litt says.

Litt also moved some puzzle pieces around a bit to beef up the impact of the song. He held the horns out of the first chorus, for example, and apparently Leskanich's "Woo!" was somewhere else in the song, but Litt pushed it up front to before the horns come in.

With his critical distance from the original, Litt seemed to have just the right sense of what the song needed to put it over the top. When the remixed version was released, "Walking on Sunshine" charted all over Europe, Canada and Australia, and it peaked at Number 9 in the U.S. By some accounts, the song has earned millions in licensing royalties for the bandmembers, who share rights to the song.

"It's great! Absolutely great," Collier says. "It was a treat for me to go to New York and a treat for me to see The Power Station, and Scott absolutely made that track. He took it in hand and made it what it is."

Today, Collier is still fighting the good fight in London. "I do a lot of old-fashioned punk. I started in punk bands 40 years ago, and I'm proud to still be doing it," he says. Collier's numerous credits also include the Jesus and Mary Chain, Soup Dragons and the last five albums by seminal punks the UK Subs.

And Scott Litt, who has worked with cutting-edge artists such as Patti Smith and Nirvana is now best known for producing several of R.E.M.'s most successful albums, including Grammy winner *Out of Time*, and *Automatic for the People*, which Litt was remixing for a 25th-anniversary Dolby Atmos release when we spoke.

Litt is proud of his earlier recordings, but when he remembers the "Sunshine" sessions, he remembers feeling a bit sheepish.

"I remember it was 6 a.m. on a Saturday and I had just put the drum intro in the front, and who walks in but Tony Bongiovi," Litt recalls. "He had done some early mixing for Motown and he was really entrenched in that R&B tight and classic sound. He heard the song and he loved it. I was excited and a little full of myself and I walked out into the lobby of the Power Station and I ran into another engineer, Jason Corsaro. He said, 'What are you working on?' and I said, 'I just finished mixing this song, do you want to check it out?' He came into Studio B and listened to it, and he's like, 'It sounds good. Do you want to hear what I'm working on?'"

"So I go into Studio C where he was working on the band Power Station: Robert Palmer with the guys from Duran Duran. And what Jason played me was the song 'Some Like It Hot.' It was the craziest sounding thing ever. The drums sounded like they came from another world, and I thought, 'I just finished a song that couldn't sound more '60s if you tried, and this song sounds like the future.'" ■



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Live



Green Day is touring with a d&b P.A. supplied by VER.

GREEN DAY COMES HOME

Local Heroes Bring Their 'Revolution Radio' Tour to Oakland

By Barbara Schultz / Photos by Steve Jennings

This year, the Oakland Athletics' commercial campaign emphasizes that the team is "Rooted in Oakland." It resonates because, in a city that usually takes a backseat to tonier San Francisco and has its share of urban problems, Oaklanders take extra pride in The Town's notable assets: diverse population, lakeside parks, historic movie palaces, Green Collar Baseball, Raider Nation, Dub Nation... and Green Day.

So when the world's most successful punk band played their hometown this summer—one

night at the A's Rickey Henderson Field—Oakland pride was on full display, from the Green Day A's jerseys in the crowd to the message from the stage. "We're home!" frontman Billie Joe Armstrong declared, and throughout a night of hits and extreme audience participation, he stressed the importance of East Bay pride and unity. You heard it here: Inclusion is the new punk.

It takes energy on a Springsteen-in-the-'80s level to deliver Green Day's message and engage a stadium crowd for more than two hours, particularly when most of the audience—those

who did not score "pit" tickets—were separated from the band by the entire baseball infield. With the stage situated in center field, it was GA in front of the stage, everybody else in the stands, and a lot of protected turf in between.

To meet this challenge, bandmembers Armstrong, drummer Tré Cool and bassist Mike Dirnt expanded their stage sound with help from guitarists Jason White and Jeff Matika, and saxophone player Jason Freese.

Green Day's other not-so-secret weapon is interaction with their audience: There's fre-

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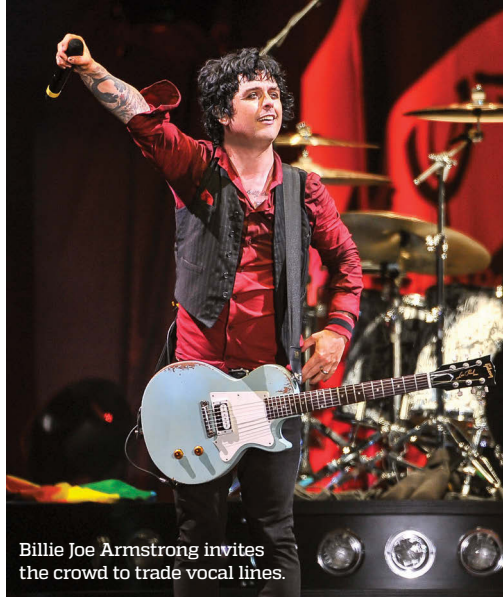
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quent call-and-response, and several times during a show, Armstrong will invite an audience member onto the stage to sing a verse or play a guitar riff. The band's setlist remains fairly consistent from night to night, but their shows are still full of surprises, and Green Day's technical team needs to be ready.

Front-of-house engineer Kevin Lemoine has been touring with the band since 2000, so he knows the drill. He's been with them so long, in fact, he's burned through at least one console. "I have a new Trident 88 now, a modern analog console," Lemoine says. "The last console we owned was a 32-channel Midas. It was a good board, but we just wore it out. So I went to AES and other tradeshow to try some new things. The Trident looked and felt solid and high-quality. So I got VER [sound company, Nashville] to supply one on this run.

"As far as the workflow, it's about as straightforward as it gets," Lemoine continues. "It's a really basic analog console that just happens to have phenomenal EQ and it sounds great. And even though I do have a couple of computer screens—I have one with my Lake EQ/analyzer and one with a Waves package on it—it lets me pay more attention to the performance than to the gear."

VER also provides the tour's d&b audiotechnik J Series P.A. "On this



Billie Joe Armstrong invites the crowd to trade vocal lines.

tour we're doing amphitheatres, arenas and stadiums, so the P.A. has to be something we can set up in all those situations and cover everybody," Lemoine says. "I think this d&b system is the nicest, most hi-fi rig we've come across: absolute clarity, nice volume without hurting anyone—just a really sweet rig."

For the Oakland stadium date, the crew put up three main hangs per side of 24 J8 loudspeakers, as well as side hangs of 20 J and J12 speakers, flown sub arrays consisting of eight JSubs each, as well as four J12s and two J8s for additional fills, and a complement of 28 JSubs and 14 Jinfras as ground subs. The entire

system is supported by d&b's ArrayProcessing and D8o amplifiers.

Lemoine uses a honed collection of outboard gear and plug-ins at FOH: "I like API preamps on all drums and vocals," he says. "I've got my Waves package on Billie—C6 and Vitamin [sonic enhancer], and the Manly Marroquin Triple D on his vocal. I like the Lexicon PCM92 reverb, Chandler compression on the backing vocals and Billie's acoustic guitar, and I like the way SSL gates and compressors sound on drums."

Onstage, Lemoine captures Armstrong's lead vocal with a DPA 4018v. "It's a capsule that screws right into a Shure wireless system," he explains. "I do have a Lake EQ inserted on there, as well, for troubleshooting with

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FOH engineer Levin Lemoine (left) and monitor engineer Tim Engwall

the long ramp that comes out in front of the stage—it helps out with that.”

Backing vocals are taken via Telefunken M80s, and drums are miked up mainly with DPA mics, plus AKG 414s as overheads and another M80 on snare. Still more M80 mics are used on guitar amps.

“The two main guitar players, Billie and Jason White, have identical Marshall rigs with two amps [each],” Lemoine explains. “One gets a Neumann TLM103 and the Telefunken M80, and the other gets another Neumann TLM103 and an old RCA BK5 ribbon mic from the ’60s. Those go into BAE 1032 preamps—they’re basically Neve 1073 clones. Having one of those on each mic makes it easy for the mics to sound individually accurate. The 103 sounds like a 103. The ribbon mic sounds like an old ribbon mic.”

As for bassist Mike Dirnt, “He designed his own Fender amplifier with the Fender guys,” Lemoine says. “It’s got a tube preamp section and a tube amp section, and it’s just got an XLR out; I put it through a [Tech 21] Sans-Amp. I also have a Beyer M88 microphone on one of his cabinets.

“Mike’s bass tone has evolved through the years, and the bass is a very important part of this band’s sound. The earlier records sound different from the later records, too, and they’re playing songs from their very early records till Revolution Radio, so I wouldn’t just throw the bass up and keep it the same all night. It has to evolve through the songs.”

Lemoine’s goal, on any Green Day tour, is to bring the albums to life for the fans, and the audience’s response is essential to a great show. It’s give and take.

“The guys want their monitor mix to sound very polished and like the record, and live at the same time,” says Tim Engwall, who mixes for the band’s Shure PSM1000 in-ears on an Avid S6L. “In order to achieve that, I have a few analog pieces of gear: I run all my drum channels through Midas XL42 preamps to get that analog drum sound before it hits my digital console, for example.

“But then in terms of Billie’s mix, he feeds off of the crowd, so we put up anywhere from six to 12 crowd mics in front of the stage, depending on if it’s a stadium show or a smaller amphitheater. He’ll point his vocal mic at the crowd, but obviously that doesn’t pick up very much. That’s more of a prompt, if you will. But those crowd mics really pump him up, and that’s a big part of the show.” ■

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On the Cover

By Tom Kenny

TROY GERMANO TALKS NEW YORK CITY

A 40-Year Perspective on Recording and Relationships



The well-tuned Germano Studios team, from left: Owner Troy Germano, mix engineer Max Morin, training assistant engineer Isaac Choi, assistant engineer Manny Park, co-chief engineer Kenta Yonesaka, co-chief engineer Dave Rowland, assistant engineer Kris Crawford and mix engineer Matthew Sim.

Photo: Michael Vecchio

The concept for this month's cover was clear, but in a vague sort of way. New York City itself was to be a main character, somewhat in the manner of E.B. White's 1948 love letter to The City, *Here Is New York*. But for the Recording Industry. The Studio Business. In 2017. Again, clear but vague—just so it wasn't a typical studio shot. We wanted something different.

So we called Troy Germano, whose studio business experience began at age 6 sitting in on

string sessions with his father producing at Phil Ramone's A&R Studios in the late '60s, to an unparalleled 25-year run at the world-famous Hit Factory Studios, to an upcoming 10-year anniversary at the helm of Germano Studios. The concept began to take shape. He called his friend, Bob Gruen, an iconic rock 'n' roll photographer, and we thought it might be cool to steal the graffiti-alley concept from a classic Ramones album cover.

The studio business, we agreed, is all about the people. It's about the relationships formed over

the years and the knowledge passed on to the next generation. We also noted that while the remaining big facilities that cater to big artists get a lion's share of the attention, there are countless professionals, with many and varied talents, who feed these studios and make those legendary recordings possible. That's why there's a rock star on the cover, just a few steps away from an audio retailer, a couple engineers and producers, a manager, a label head and a songwriter or two. Everybody has a role in making the music.



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We also agreed that this was just one photo from one moment on one day in one year, and it was to be a representation of a hundred talented professionals in The City equally worthy of inclusion. New York has a one-of-a-kind audio history, with a storied list of engineering and producing talent, from radio to Broadway to television and rock and roll. For the past 40 years, Germano has had a front row seat, providing the spaces where artists want to make music.

"There's an energy in New York that no other place has," he says. "And that energy crosses over into fashion, into film, into music and art. New York has threads through all those industries and they feed off of each other like nowhere else. When I was a teenager in the mid-'70s and my father owned part of Record Plant, then purchased The Hit Factory, there was a certain crunchiness and an element about New York, and everybody wanted to be here. I was too young to fully experience it, but it was different. There was this punk rock thing happening with the Ramones and all. Then the English influence. Rock and R&B.

"Then in the 1980s, we saw the modernization of the music industry, in terms of technology," he continues. "And I think that passion for music was carried over to new technologies, where the process of designing and building and running studios was as much fun as making the music. When my father started, there were no real blueprints. We were making it up, and we evolved with the times.

"But I think the cover of the magazine shows one thing very well: What it comes down to is relationships. Friendships. The people on that cover are from all aspects of the industry and from different age brackets. The multidimensional part of New York and the multidimensional part of what I'm still trying to do here with my two studios. It's just a very different time. But for New York, relationships is what it's all about. That doesn't change."

In those same decades, New York studios have faced a unique set of challenges, even within the larger changes impacting the recording industry at large, from production through distribution. It has been reflected in some well-publicized (though sometimes misinformed) studio closings, and in the slow exodus of many producers and engineers to Los Angeles or upstate. Not to mention the ever-rising independent studio scene in Brooklyn. It's not easy to operate a world-class commercial studio in New York these days, with budgets what they are. For major-label work, there's Germano Studios, Jungle City, Electric Lady and perhaps a couple more.

Germano was well aware of the changes taking place in both the music market and the traditional studio model when his father and best friend, Hit Factory founder Ed Germano, died in 2003, followed by the closure of the W. 54th Street facilities in 2005 in a real estate deal that was set up for his mother. Troy, then, set off on his own and adapted to the new music business. People made records in a lot of different ways, he figured—at home, a few days at a time, on the road, on a laptop—so only two rooms this time, not 18, but with the same attention and service.

"The best way I can describe what I wanted to build here was 'two heavyweight rooms that are middleweight fighters.' And that's kind of what I did," he says of Germano Studios. "The speed and leanness of a middleweight is better than that of a heavyweight. You have to embrace the changes and adapt. You can't chastise people for building a production room at home or

creating records inside a DAW. And it's not necessarily about the four walls. It's the energy, it's the monitoring, it's the analog equipment, it's how you treat the clients and it's keeping a staff in tune. How powerful is your Pro Tools system and how deep is your plug-in list? You have to be engaged, you have to pay attention to your software and you have to be passionate to ride out the changes."

Germano is also quick to note that because the average booking these days might be only four or five days, with the occasional long-term projects, the number of clients has to increase. That means variety, as well as a larger number of puzzle pieces.

"Today, studios have to be able to do all types of music," he says. "Pop, rock, hip hop, Broadway cast recording, film score work, rap records, trap records, jazz records. You have to be able to do anything, and that's good. It helps develop your engineers for when they go on to be producers and engineers in their own right. In developing these young engineers, it's important that they're in the room with Keith Richards, with Kendrick Lamar, with Mark Ronson. Where are you going to get that experience? That education? I think you get that in a unique way in New York City.

"When my father was at the Record Plant in the '70s, he hired engineers like Thom Panunzio and Jimmy Iovine, and they went on to become great producers and entrepreneurs," he continues. "We've lost some of that over the years, so I am doing everything I can to develop young engineers. I think it's vitally important. Those are your alumni, your future clients. It's a long road, but it's something I think all studios need to cultivate more. That's why I wanted to put a couple of my engineers in the photo, to show the next generation coming up."

It hasn't always been an easy road for Germano and his two studios. He opened in 2008, on the downbeat of a mini-recession and at the height of a massive transformation in production budgets and consumer consumption of music. He's made it work, and he's had a steady stream of A-list label work in tandem with new artists and indie projects. He is genuine when he says he wants more studios to open, believing in the "rising tide" philosophy. "I fight for New York," he says simply. "Many people talk about bringing the recording business back to New York. As far as I'm concerned, it's never left."

He also continues to design studios, recently spent nearly two years consulting with Universal Music Group on the reconditioning of Capitol Studios and Abbey Road Studios, and this month will be releasing a new near-field self-powered Germano Acoustics monitoring system, built in conjunction with APS, a manufacturer from Poland. He talks openly about the possibility of expanding into other cities. Just not quite yet...

First and foremost, though, he will continue to fight the good fight, and he has proven that studios can survive, and even thrive. But there has to be passion, and there has to be a foundation of trust in relationships.

"If you come from a blue collar background—and that's where my father came from—you learn at a really young age that the conversations you have with the janitor, or the delivery team that brings the equipment, or a Peter Gabriel or a Ryuchi Sakamoto, you have to give them all the same level of attention," he explains. "My dad did that naturally. And he taught me. It's more than just relationships, it's about respect." ■

"I am doing everything I can to develop young engineers. I think it's vitally important. Those are your alumni, your future clients."



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TIPS & TECHNIQUES

From the Pros

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

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

2 Check for Mono Even though it's 2017

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

3 Try Out a Manual De-Esser on Vocal Tracks

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

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MIX REGIONAL: NEW YORK CITY



Stephen Webber will serve as Executive Director of Power Station at BerkleeNYC

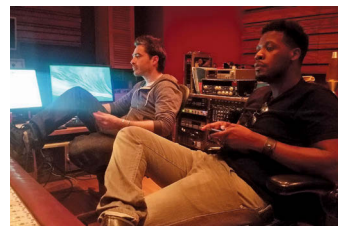
to be a hub of creative activity,” Webber says. “We want it to be this amazing space where collaboration and community and innovation can’t help but happen when you walk in the door.”

Once Berklee has completed renovations—

which will also involve an architectural facelift to the building exterior—the studios will operate under a similar business model to the one used by Ocean Way Nashville/Belmont University, where educational institutions, including Berklee, local schools and community groups, will book time as commercial clients do. Educational programming will be supported to some extent by a \$6 million investment by the City of New York. Berklee may also offer some of its students an opportunity to spend their last semester in New York.

“There’s also been a lot of interest from people in continuing education for musicians, producers, engineers and technologists,” Webber says. “We want to use this space as a laboratory to come up with new ideas for classes and programming. We want to look back 10 or 20 years from now and say this was a real turning point in music education and the New York studio scene.” ■

Keyon Harrold at Shelter Island Sound



Engineer Ben Wollner (left) and Keyon Harrold at Shelter Island Sound

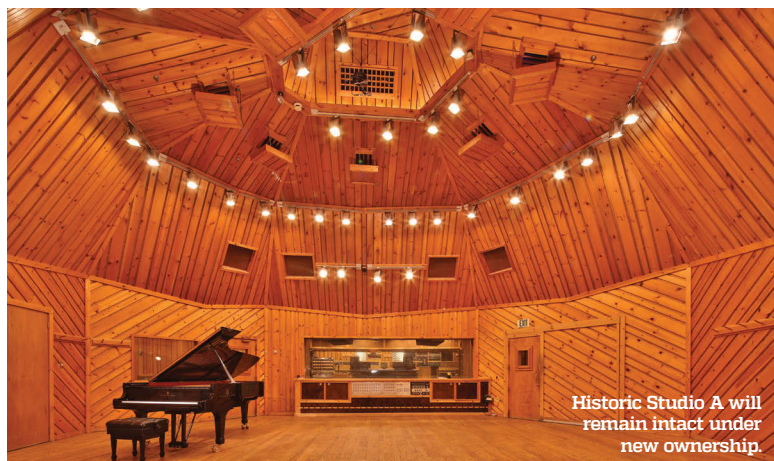
A Grammy-winner for his work on the *Miles Ahead* soundtrack, as well as Gregory Porter’s *Take Me to the Alley*, trumpeter/producer/songwriter Keyon Harrold has just released his latest solo album, *The Mugician* (Legacy/Mass Appeal Records).

The album features guest appearances by Bilal and Gary Clark Jr., and a sound that merges sweet, pure jazz trumpet music with electronica.

A variety of engineers, including Mick Guzauski and Glen Marchese, mixed the album tracks, but the majority of the tracking was done live at Shelter Island Sound with producer Harrold and engineers Myles Turney and Ben Wollner.

“Shelter Island is a studio where I work at a lot,” says Wollner. I like it because it’s a very private facility and it combines modern technology—Pro Tools 11 and AD/DA conversion—with an MCI/API 636 board and a lot of Neve pre’s and that sort of thing. Also, the backline is great: there’s a great piano, a B-3 that sounds amazing, Wurlitzer, Rhodes, and those things made it great for this project.”

Harrold’s trumpet is the centerpiece of the album, and one of the pieces that went down live. “I would usually put three mics up: a Royer or a Coles ribbon mic into a Neve 1081 or 1073 preamp, a Neumann M49 through a Hardy M1 pre, and an AKG C12 through another Neve pre. If need be, I would compress with an LA2A, but I would try to avoid compression as much as I could.” ■



THE POWER STATION AT BERKLEENYC

Historic Studio’s Next Act

As widely reported by the *New York Times* and others, Berklee College of Music, led by president Roger Brown and trustee Peter Muller, has joined with the City of New York to acquire Avatar Studios. Through this partnership, the studios that were originally built by producer Tony Bongiovi and co-founder Bob Walters in the late 1970s, will receive selective upgrades and play a new educational role for Berklee students and for New York’s audio and music communities.

Leading these efforts is Berklee’s Dean of Strategic Initiatives, Stephen Webber. An educator, musician and recordist, Webber had just headed up the launch of Berklee’s Valencia, Spain, campus when he was asked to make Power Station at BerkleeNYC his next priority.

“As someone who’s been in recording all of my life, it means a great deal to save these studios,” Webber says. “There’s something that happens when people come together in an inspiring space to make music together, and I feel like that is something worth preserving.”

Good news for Avatar’s devoted clientele: Chief engineer Roy Hendrickson will stay on with Berklee, and the famed acoustics of the original studios and the vintage equipment within the building—including consoles, mics and outboard gear—will remain intact. “But at the same time, the Pro Tools systems haven’t been upgraded in ten years, and there’s a lot to do in terms of networking,” Webber says. “We will also outfit all the studios with cutting-edge video-capture technology and add a video control room in the lower level, which is currently massively underutilized.”

Further plans for the lower floor of the building include installation of a rehearsal/performance space and a virtual reality laboratory “We want this



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THE STUDIO LETTER OF THE DAY IS “G”



While the owners of Studio G—musician/engineer/producers Joel Hamilton, Chris Cubeta and Tony Maimone—are proud of their rock records and multiple Grammy nominations, they’re also pleased to host ongoing music production for the under-5 set.

“We’re now the headquarters for all the music for *Sesame Street*,” Hamilton says. “They’re here every Tuesday using our B room. They have a consistent band

and the same producer, Bill Sherman, who also produced the *Hamilton* soundtrack album. All the *Hamilton* cast members’ individual albums have been happening in Studio G as well, under Bill’s production.”

Studio G’s 1,000-square-foot B room features a 40-channel Neve 5316 console that was originally used by the BBC. “They use all of our vintage microphones. We have a really extensive vintage synth and drum machine collection, as well, and that’s been expanding like crazy recently,” Hamilton says.

Other recent projects at Studio G include Cubeta working with indie pop duo A Great Big World, and Hamilton with Turkish pop singer Sertab Erener.

DOUGLASS RECORDING, FROM L.A. TO NYC



Douglass Recording opened this year, built into 2,000 square feet of warehouse space in Brooklyn’s Park Slope neighborhood. Owner/engineer Myles Rodenhouse is a native New Yorker with an L.A. connection: His brother, Jake, owns two studios out west, and

the siblings collaborate frequently, sharing clientele, knowledge and gear.

Myles’ studio was designed by the late Vincent Van Haaff, who had consulted on Jake’s studio Perfect Sound. “He designed the layout and most of the acoustic treatment before he passed away in 2016,” says Myles, who makes no apologies for wanting to emulate what his brother has established in L.A.

“There’s tons of stuff that we ripped right out of Perfect Sound. I got to know a lot of that equipment, and wanted to create a similar vibe. I actually acquired speakers from Perfect Sound. They’re Barefoot Micromain 27s.”

Douglass also offers Pro Tools 12, Digital Performer and racks of Neve preamps and choice outboard gear. “We chose to do a hybrid sort of thing without a traditional console,” Myles says. “We also do a lot of work with plug-ins, inside the box, of course. Something we’re especially proud of is the keyboards.”



Myles is a pianist, and he’s particularly happy with his Steinway B, which is maintained by James Carney. The studio also offers a vintage Rhodes piano, as well as a Wurlitzer 200A and Hammond organ restored by Vintage Vibe.

Clients that have worked at Douglass Recording recently include Talib Kweli with engineer Chris Pummil, pianist Arturo O’Farrill and vocalist Grace Mitchell.

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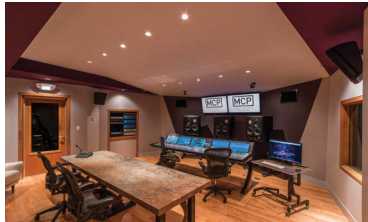
SESSIONS



Joey Wunsch, Daniel Sanint, James Bay and Jonathan Green writing session with Jonathan Green.

FLUX STUDIOS, NYC

Recent sessions in the multiroom Flux Studios include Andre 3000 with engineer Ken Oriole, Ingrid Michaelson recording “Miss America” (Sara Bareilles) with engineer Daniel Sanint and assistant engineer Ana Tuiran, and Sanint and assistant Joey Wunsch capturing James Bay’s



MANHATTAN CENTER PRODUCTIONS

Obie O’Brien, studio manager of MCP, reports, “We just finished recording and mixing a film score with composer Elliot Goldenthal for an upcoming Netflix movie called *Our Souls at Night*, starring Robert Redford and

Jane Fonda. It was our first film project to be recorded and mixed in our recently renovated Studio 7. We also recently hosted MixCon which was spread between our Grand Ballroom, the new Studio 7 and our Log Cabin studio.” Gear in MCP’s new Studio 7 includes an 80-fader Lawo mc²56 console, Pro Tools 12 and ATC SCM110 monitors.



Nathaniel Reichman & Tony Mason

RHUMBA, NYC

Rhumba is the children’s entertainment arm of Murmur Music/ Dubway Studios. Ongoing work includes composing and recording songs for the new animated Barbie preschool series *Dreamtopia*. The

Rhumba staff also took charge of casting, directing, scoring, sound designing and mixing *Season Isle* and *Remy’s Place* for Panoply’s children’s division, Pinna. Tracking songs live for *Remy’s Place* were musicians Richard Julian, Norah Jones, Henry Butler, Matt Munisteri, Tony Scherr, Kenny Wollesen, Tony Mason and Roy Nathanson, with Brad Jones engineering.



The Cast of *Waitress*

THRESHOLD STUDIOS, NYC

Threshold Studios owner/producer James B. Walsh reports that his studio has hosted recent sessions to create marketing music with a number of Broadway cast members, ensembles and shows, including *Something Rotten!*, *Waitress* and *Kinky Boots*. Threshold’s latest projects also include Cyndi Lauper with engineers Andrew Yanchyshyn and Walsh, and producer Bill Whittman; and John and Roger Taylor of Duran Duran cutting a song to benefit the nonprofit Road Recovery, with Walsh engineering and co-producing with the Taylors and Scott Young.



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Come From Away cast and bandmembers onstage

'COME FROM AWAY'

A 9/11 MUSICAL SINGS, ON BROADWAY

BY ERIC RUDOLPH

The modestly scaled Broadway musical *Come From Away* arrived this past March with no stars, unknown writers and a cast of normal looking people. Usually, stars, sizzle and known properties rule on ultra-competitive and costly Broadway, so such drawbacks could have easily doomed an original show about 9/11 and its aftermath. Yet, *Come From Away*, now playing at the 1,080-capacity Gerald Schoenfeld Theatre, is grossing a million dollars-plus weekly and runs at more than 100 percent of seating capacity, a distinction shared by behemoths like *Hamilton*.

Come From Away seems nearly guaranteed a long run. And its timing during the current political climate may be a big part of its success: "Try, if you must, to resist the gale of goodwill... of *Come From Away*... a tale of an insular populace that doesn't think twice before opening its arms to an international throng of strangers," raved the *New York Times*.

Come From Away was nominated for seven 2017 Tony Awards and won for Best Direction (Christopher Ashley). The show limns but a slice of the vast 9/11 drama: When the FAA ordered every plane flying to land at the nearest airport and no flights were allowed for five days. Suddenly Gander, Newfoundland (a small northeastern Canadian island town), had 6,500 brand-new people deplaning from 38 grounded jetliners; many were heading home from Europe. Gander and other nearby towns strained mightily to house and care for this group that nearly doubled the population on a moment's notice. Cultures clashed and, ultimately, deep friendships were made.

Onstage, 12 actors and eight musicians transform this awkward situation into 100 lively minutes of powerfully moving song and dance. The small cast portrays the equally gobsmacked locals and the "come from aways" and

switches back and forth rapidly, often within one musical number. (Each cast member is credited as their main character "and others.")

This hectic theatrical mashup, and the barrage of nonstop dialog and song that goes with it, is the show's biggest audio challenge, says sound designer Gareth Owen (who won a prestigious Outer Circle Critics Award for *Come From Away*). A multitude of rapid changes and effects are facilitated by the Avid Venue S6L desk that Owen says he's helped develop for theater use by consulting with the company for the past 15 years.

Specifically, because the Avid S6L has Pro Tools/HDX cards in the audio engine itself, a host of DSP plug-ins can be integrated directly into the system and elegantly programmed into a show, with full recall. Owen also makes extensive use of the Futzbox plug-in, in its Broadway debut, for rapid changes to a variety of distorted sounds such as airliner P.A. systems, pilot radio transmissions and a host of others.

"It is all about workflow; getting the desk to do what you need quickly without having to wrestle with it. Avid can do it instantly. I never think about it and it never gets in the way." For example Jenn Colella, in a featured part as American Airlines' first-ever female captain, does "three different accents in her first five minutes, requiring three different EQ and compression settings" to be executed quite quickly.

The S6L's Snapshot recall feature makes fast work of it all. "You create momentary snapshots that can be recalled repeatedly at any time, without pulling you out of position in the cue list," Owen says. "This means you can create three cues, each with just EQ for a specific character, and then recall them as the actor changes characters."

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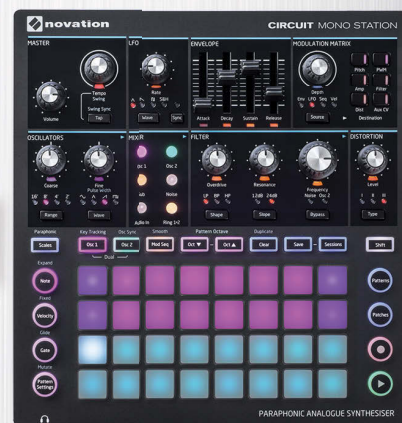
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Still, with a complex show like this, even a state-of-the-art desk needs a highly skilled operator to succeed. "The biggest challenge here is the operator's," says Owen. "It really is about working line by line, mixing dialog and music thick and fast. The pure number of cues involved to get every last bit of clarity takes an awful lot of faders being pushed and pulled [very quickly, throughout]."

The actors deliver a multitude of crucial but terse storyline snippets with lightning speed, so in addition to all the compression and EQ changes for the character shifts, the operator has to open, and then close, a host of RF mics extremely fast, to ensure absolute clarity and intelligibility.

This is essential because the audience has one chance to grasp a slew of key story elements, many delivered over upbeat, loud-ish music. Miss a few key points and one might be befuddled rather than entertained. At *Come From Away*, audiences are clearly being entertained and emotionally moved.

This dextrous, rapid-fire fader riding continues nonstop throughout the 100-minute show. "I'm constantly pulling faders, shutting off one mic and turning on others, literally line by line. And then suddenly there's a lot of complex music blending. It does not stop," says sound engineer Chris Luessmann, adding that having worked six *Come From Away* performances per week since the show opened, he can now run the desk sans script.

As with the Avid desk, Owen knows what he wants from his P.A. The main loudspeaker system is all from d&b audiotechnik: a mix of their V, E, Y and T Series point-source units. There are 10 V, B and J Series subs as well, several prominently placed in the theater's elevated side-seating

boxes, bringing the total to around 90 speakers.

"For me it's about picking a speaker that works and using it [consistently]," Owen says. "d&b seems to have a voicing policy where you get fundamentally the same frequency balance and voicing out of every speaker, so I can concentrate on the acoustics of the room and the requirements of the show rather than worry about making big boxes sound the same as little boxes."

All 24 cast foldback speakers are built into the floor and the sides of the stage (all d&b, except for eight small Electro-Voice S40s for wings programming). Extra care went into ensuring that no lines or key story points are lost due to mic failure. Each of the 12 cast members wears two complete RF mic systems; the primary mics are DPA 4066 booms, reaching far across the cheek. The boom also has a Countryman B6 (chosen for its waterproof qualities) custom-mounted next to the DPA capsule.

Every actor wears two Sennheiser transmitter packs, one for each mic. Each transmitter sends its signal to a dedicated Sennheiser receiver. But only the main DPA mic is used unless it shorts out from sweat; then the backup mic goes live manually. These backup mics are, in fact, regularly needed on *Come From Away*. This double-mic approach is standard for Owen, who's seen its importance dramatically demonstrated. "On *Young Frankenstein* in London we used all the backup mics at one time or another," he notes.

The choice of the quite-visible flesh-colored booms instead of traditional Broadway hidden head mics was dictated by the show's rapid-fire character changes. The cast is constantly changing costumes and hats,



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

~ Al Schmitt

(Barbra Streisand, Steely Dan, Ray Charles, Quincy Jones)



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

~ Vance Powell

(The White Stripes, Jars of Clay, Jimmy Buffett, Faith Hill, Jack White, Kings Of Leon)



"They cleared up a cloudiness in the bass and mid bass that I had been battling in my studio. They're an affordable and effective problem solving product. I love these things!"

~ Ross Hogarth

(Melissa Etheridge, Keb' Mo', Jewel, Rooney, John Mellencamp, Jonas Brothers, John Fogerty)



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

~ Michael Brauer

(Coldplay, John Mayer, Leonard Cohen, Bob Dylan, My Morning Jacket, Paul McCartney)



"The Recoils have become my monitor standard. Wherever my nearfields go, my Recoils are right there underneath. I don't monitor with out them. Thanks for a great product."

~ Bobby Fernandez

(LA film scoring mixer - Clint Eastwood, Tim Burton, Alexander Payne, Peter Weir)



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~ Paul Northfield

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

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often onstage, so no one could help them keep head mics from being covered or jostled.

So the choice was "less for acoustics, but for practicality; it doesn't hurt the sound," Owen says. "[Head mics] compromise sonic integrity. [With the booms], 'there's more headroom and the vocals are more precise. [With head mics], there's less clarity, as more foldback, house sound, other people onstage [gets into actors' mics]."

Also for greater overall clarity, all monitors are all mixed from FOH, rather than from an unmanned desk under the stage, as is Broadway custom. "We have so many people using so many instruments onstage, it made more sense to have total control of foldback signals," Owen says. This is especially important for the band, who are using both Shure SE315 RF in-ear and Sennheiser headphone monitoring.

The band is onstage, at the sides, and often joins in some rousing center-stage action, so most instruments are on also RF mics/pickups. Surprisingly, the FOH mix position is not at center orchestra-rear, as in nearly every Broadway show; it's upstairs at the back of the small mezzanine. This is pure "Tens of thousands of dollars are saved every week by not removing premium-priced orchestra seats to make way for FOH," Owen says.

He's unfazed by the move, though; his other Broadway show, *A Bronx Tale*, also has a mezzanine FOH position. "The sound should be as good at back of mezzanine as in the orchestra, so it shouldn't be a problem," Owen says. "I fight for best mix position I can get, and the back of the mezzanine was not any worse [than the orchestra]. And when I'm saving

Come from Away mixer Chris Luessmann at the Avid Venue S6L control surface, situated on the mezzanine level of the Gerald Schoenfeld Theater. He wears a Gander Flyers hockey jersey, from when the show was performed in Gander, Newfoundland, where the action takes place.

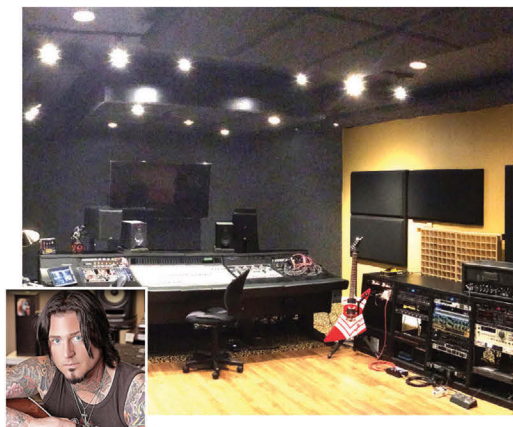
Photo: Eric Rudolph

the producers that kind of money every week, I can get other things I want that cost less," Owen notes with pleasure.

In fact, Owen has a special understanding of the economics of live theater; he was once engaged to a producer. "So I know about spending clients' money responsibly," he says. "I ask myself, 'Do I have what I need and nothing more?' I like to get to opening night and justify everything."

The right-from-opening-night success of *Come From Away* has been a rewarding, if sometimes taxing, team effort. The sound of the show is as much a reflection of the passion of the music department and direction as it is of the sound department. The attention to detail from our director and musical supervisor can sometimes be overwhelming, but the end result makes it all worthwhile. ■

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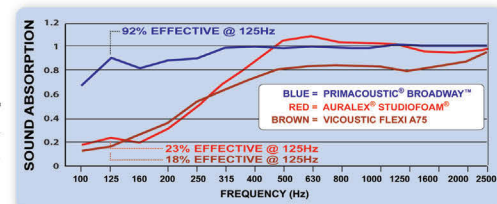
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~ Jason Hook - Five Finger Death Punch.

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RICHARD DEVINE

IMPLICATIONS OF VIRTUAL REALITY // BY SARAH JONES



Photo: Emily B. Hall

I'd like to tell you what Richard Devine is working on right now, but I'm sworn to secrecy.

The Atlanta-based producer and sound designer is well-known for remixing the likes of Aphex Twin, and designing sounds for hardware synths and music software such as Reason and Absynth. His work for corporate clients, however, often flies under the radar.

Devine is in demand by tech giants such as Apple, Sony and Microsoft, and he is increasingly called upon for top-secret projects developing sonic environments for everything from apps to automobiles.

His newest work is in the exploding field of sound design for virtual reality, which he delved into in 2015 when Google hired him to create the entire sonic realm of the company's Daydream virtual reality platform, from designing navigation sounds to assuring consistency in virtual environments. "I basically flew out to Google's headquarters in Mountain View and got a three-week crash course in virtual reality at their offices," he says. "I just jumped right in from that point."

One of Devine's most significant projects at Google was creating organic textures and sounds for the Google Earth VR app, a process that began with location recording using a Sennheiser AMBEO VR mic and Soundfield ST450 Ambisonic mic and an 8-channel Sound Devices recorder. "If you were in a forest or near a lake, you would hear sounds of water or birds and wind noise and crickets; depending on where you are in the world," he says. "We have this library of sounds that I recorded in Ambisonics format; it plays in various locations, depending on where

you are on the planet."

Devine worked in Google's Virtual Reality (VR) SDK; sound design involved adapting environments to match the time of day, conveying a natural sense of localization with effects, programming seamless loops, and creating an immersive sonic environment that never overwhelmed the user with too many natural sounds.

Maintaining subtlety sometimes meant replacing "busy" location recordings in the studio, ADR style. "I used an application environment called Pure Data," Devine explains. "I created the crickets using synthesis and re-recorded them in quad, in my studio, in a perfectly soundproof, controlled environment."

"With the software, I was able to control the rate of the crickets, and I could also randomize the playback for each one of the speakers so it would sound like a different cricket coming from each direction," he says. "Everything was completely lean; we later took those sounds and imported them

into the Unity 3D engine, and we used scripts that would randomize file playback, so you wouldn't think it was just a loop."

To create a sense of distance in, for example, sounds of birds in trees, Devine programmed Unity 3D scripts to evolve reflection patterns. "If you were hearing a cricket that was on the floor, you placed a 'sound emitter' on the floor, and then the closer you get, the less reverb it applies," Devine explains. "There are scripts that detect the position of your head in the environment, so as you get closer to something, it pulls back the reverb and gets more detailed as you are turning your ear or are closer to the ground."

It's difficult to comprehend fully virtual reality's potential to redefine our relationship with sound, but the implications are vast. For example, Devine worked on a Google project called Blind VR that enables sight-impaired users to navigate objects in a room through echolocation, via a controller's haptic feedback. And he's hinted at secret projects that involve developing new sensory languages of sorts for VR controller platforms.

"Just the way we play music in the future will be different," Devine says. "When I was at Google, we were working on a music app where you could place instruments in a space and play them in a way you would never be able to play them normally, like set up a drum kit floating in the air and have 15 cymbals. You could set them vertically."

"You can do things that are physically impossible within the natural, normal environment. I think it's going to open up a whole world of new creative art and music; it's just really exciting." ■

Category Killer*



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- Phil Ward, Sound on Sound

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- Andy Hong, TapeOp

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HOT PRODUCT DEBUTS AT AES NYC

BY STROTHER BULLINS

Let's cut right to the chase: AES NYC 2017 plans to deliver on its theme of Maximum Audio, with lots of "sound" education and tutorials taking place at the intersections of live performance, Spatial Audio, broadcast, cinema and more. That's also reflected on the exhibition floor, with a host of product unveilings and demonstrations well worth seeing in person

Though we are aware of a number of embargoed product announcements to be revealed for the first time in New York, we provide here a collection of exciting AES debuts.

Be sure to drop by **Antelope Audio** (booth 632) to hear the company's four new vintage compressors—the BA-6A, FET-A78, SMT-100A and Grove Hill Liverpool—for its expanding library of FPGA hardware-based effects, easing the processing load on your DAW. The company's associated Thunderbolt and HDX audio interfaces include Orion Studio HD, Goliath HD, Orion Studio (revised 2017), Orion32 HD, Zen Studio+, Orion Studio, Goliath, Orion32+, and Zen Tour.

Burl Audio (booth 249) is showing its BAD8 card for the B8o and B16 Mothership. Utilizing all Class A, discrete transistor circuitry and Burl's BX1 transformer-coupled input, the new form factor is said to allow for more channel density. Other features include Burl's latest A/D conversion, operation at 24-bit, 192 kHz, notably low latency and D-Sub connectivity.



Crane Song (booth 231) will display its new HEDD Quantum, the next generation of the HEDD A-D/D-A con-

verter, which utilizes the same sub-picosecond jitter clock found in the Avocet IIA DAC. Reportedly, the result is "outstanding imaging, an open 3D sound, and extremely detailed transit response." Clocking is applied to both the D-A and A-D converters; it also features six word clock outputs.



Denmark's **DPA Microphones** (booth 840) will show its d:vice MMA-A Digital Audio Interface, a portable USB interface designed for live broadcast, as well as audio and video recording. Designed to perform with any MicroDot-equipped DPA Microphone, it is small and captures or streams studio-quality 24-bit/96kHz audio to virtu-

ally any laptop or iOS device. Channels can be configured in mono, dual mono and stereo, with access to advanced parameters via a free d:vice app.

Meanwhile, fellow Danes **Dynaudio Pro** (booth 440), will unveil the company's first new studio-oriented powered subwoofers in a decade, each featuring long-throw 9.45-inch woofers. The Dynaudio 9S features a single woofer, while the 18S offers two, arranged in a push-push opposing



design, with a woofer per side. Both the 9S and 18S offer a frequency range of 18 Hz to 175 Hz, powered by a 300 W Class D and 500 W Class D amplifier, respectively. The 18S also

includes a DSP engine with built-in presets, time-alignment functionality and a three-band EQ; as such, it is optimized for pairing with Dynaudio Pro studio monitors like the company's new LYD Series.



Earthworks (booth 416) has announced its newest microphones for drums, including the DM20 DrumMic for close-miking toms and snare, as well as several multi-microphone kits. The DM20 features a cardioid polar pattern, 150dB SPL rating and flat 50Hz-20kHz frequency response. A right-angle microphone head allows for precise positioning, and its gooseneck is stiff yet flexible.



ESI Audiotechnik GmbH (booth 345)—a branded and OEM pro audio design/manufacturing firm since

1998—will show its 24-bit/96 kHz-capable U168 XT and U86 XT USB audio interfaces. Mac or PC-ready, the U168 XT provides four microphone preamps via front-panel XLR inputs with phantom power, two of which are switchable Hi-Z instrument inputs (with XLR/TRS combo jacks); 16 line inputs and eight line outputs via quarter-inch TRS, all on the rear panel; S/PDIF I/O; dual headphone outputs; L/R mix outputs via quarter-inch TRS; 16 channel MIDI I/O; and USB 2.0 port.



Focusrite (booth 366) will show its new RedNet X2P, a 2x2 Dante audio interface that can add I/O to any Dante audio-over-IP system. The unit sports two Red Evolution mic pre's that provide stereo linking, individual

phantom power, a highpass filter and phase reverse, and also include Air mode, emulating the sound of Focusrite's transformer-based mic preamps. The unit also has stereo line out and a stereo headphone amplifier; power, audio and remote control are supplied via an Ethernet cable.

Genelec (booth 322) will showcase its 7380 Smart Active Subwoofer, which delivers both high SPL and an extended low-distortion LF response in a compact enclosure. The 7380 is easily integrated into any monitoring system—from stereo to multichannel, or as part of a large-scale 3D Immersive setup. Features include a newly designed Class-D amplifier and Smart Active Monitoring technology.



MIX WITH THE MASTERS

The Mix With The Masters Program offers the unique opportunity to work closely with the world's top music mixers, producers and engineers and to improve one's skills in music production. Since its successful debut in 2010, it has hosted over 1000 participants and 80 seminars.

In addition to these seminars, Mix With The Masters has now launched an exclusive online community for Engineers and Producers, offering an incredible array of exclusive online services, enabling its members to discover the approaches and techniques of A-list music mixers and producers. You can now become a member to get an unlimited access to hundreds of videos, and to take advantage of our unique online services such as Mix and Production Consulting, Webinars, and much more.

In like manner, the Mix With The Masters residential seminars are held at the Studios La Fabrique in the South of France, which is the perfect setting to both learn and relax. Each weeklong seminar includes, among other activities, a series of discussions about production techniques, mental and philosophical approaches towards mixing, career advice, workshops, during which the guest speaker tracks a band, and mixes in front of the attendees, as well as giving them feedback on their own projects.

The process of greatness fostering greatness has long been recognized, and is the reason why master classes are organized. The Mix With The Masters Program is proud to be part of this tradition, both through our online community and weeklong seminars.

MUSIC PRODUCTION SEMINARS & ONLINE COMMUNITY

GIK Acoustics (booth 436) now offers new finishes of Gray Elm and Mahogany, in four styles, for the: Alpha Series, featuring a choice of one-dimensional or two-dimensional scattering/diffusion sequences; the Impression Series, featuring decorative, semi-reflective rigid plates attached to absorptive acoustic panels and bass traps; the Scopus Tuned Membrane Bass Traps; and the PIB (Portable Isolation Booth).



The brains at **Grace Design** (booth 513) will showcase the company's m900, a compact, desktop-friendly headphone amplifier/DAC/monitor controller "for musical, transparent playback from USB, S/PDIF or TOSLINK sources." The m900 is designed for small DAW setups or portable laptop editing or mixing rigs, yet provides the same playback quality as Grace's large monitor controllers. It is enclosed within in a rugged, portable chassis.



Sennheiser's Neumann (booth 724) will be celebrating the anniversary of the legendary U87 large-diaphragm condenser microphone while showcasing its U87 Rhodium Edition, a made-to-order version limited to 500 units worldwide. Each U87 Rhodium Edition is individually numbered with a certificate of authenticity and ships in a Neumann aluminum case with a special Rhodium Edition EA 87 elastic suspen-

sion. A pair of black gloves is also included for keeping the limited-edition microphone "in pristine condition."

IK Multimedia (booth 404) will tout its Ampeg SVX 2 plug-in for Mac/PC featuring six newly modeled vintage Ampeg bass guitar amplifiers and cabinets. The SVX 2 package is rounded out by the Ampeg V-4B 100W All-Tube Bass Head, modeling the 1971 original; the Heritage B-15N with distinct switchable 1964 and 1966 channels; the SVT-810AV amp stack from 1969; the Ampeg SVT-212AV bass enclosure; and the 60s-era B-15N 115.



Millennia Media (booth 532) will be showcasing its HV-3R AELogic Remote Control Software, operable over Wi-Fi using a high-resolution Android tablet client with Microsoft Remote Desktop. The picture shows an HV-3R connected to the Wi-Fi access point with a Galaxy Tab S controlling it—a simple, cost-effective solution.

Revealing multiple new products (booth 239), **Radial Engineering** will have namesake products as well as the latest from Hafler, Primacoustic and Jensen Transformers. The new Radial MIX2:1 mixer passively sums two audio channels, offering quarter-inch TRS and XLR input connectivity per dual mic preamps; also, ground lift, trim control, phase invert, and passively summed XLR output. Other new products: The Radial SAT-2

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passive stereo audio device; Hafler P3100 "next generation" 2-channel amplifier; Primacoustic Element panels featuring hexagonal shapes and beveled edges; and Jensen's PI-RJ2X ISO-MAX transmitter/receiver offerings for sending line level audio over CAT5/CAT6 Ethernet cables.

Roswell Pro Audio (booth 242) will show its updated Mini K47 Microphone, including new accessories. A new Black Sparkle powdercoat finish, new Cutaway shockmount, newly added European polypropylene signal capacitors and refined DC voltage circuitry are among the improvements. It ships with a signed and dated QC card, within a padded aluminum flight case.

Also showcasing a limited edition microphone, **Shure** (booth 514) will display its Super 55-BLK Deluxe Vocal Microphone Pitch Black, among other debuts. The Super 55-BLK supercardioid dynamic features a matte black die-cast case, black foam and the Super 55's traditional frequency response for natural vocal reproduction.

Showing at **Tascam** (booth 928) will be the US-1X2 USB interface, intended for portable or desktop 24-bit, 96 kHz recording. USB bus-powered for mobile



operation with a Mac or Windows laptop, the unit comes with a secondary 5 VDC mini-USB power input provided for iOS devices and for standalone operation in practice sessions. The XLR input employs the company's Ultra-HDDA mic preamp and is class-compliant for macOS and is compatible with Windows PCs using an ASIO driver.



At **Wave Distribution** (booth 250), Useful Arts Audio will showcase its SFP-60 Microphone Preamplifier, a 2-channel Class-A mic tube preamp with a variable control for second-order harmonic distortion. Also at Wave Distro: Empirical Labs (ELI) will be demonstrating its Version 2.0 of the Arouser plug-in with a bevy of new features and improvements, including AAX-DSP support for Mac OS. The Arouser is billed as Empirical Labs "classic knee compression in a plug-in." And the Big



Bear Audio brand will debut with its MP1, a discrete Class A mic preamp with high-impedance discrete instrument input for 500 Series racks.

Yamaha (booth 624) will display its MMP1 Studio Monitor Management System to aid in the setup and use of monitor environments in a range of configurations. Offering a 40 x 36 Monitor Matrix, the MMP1 supports formats from stereo to Immersive audio, including Dolby Atmos, Auro3D and NHK 22.2. Communication. Features include eight cue outputs, two talkback systems, cough mute, cough mute override and studio speaker auto-mute.

Zaxcom (booth 933) will show its new ZMT3-HH, a "first-of-its-kind" handheld microphone featuring fully digital wireless transmission, hard-wired balanced mic level analog audio, internal microSD recording with timecode, a programmable function button, battery life up to 14 hours, proprietary Zaxcom technology and more. If for any reason a wireless transmission is not possible due to RF interference or lack of available channels, the XLR output immediately becomes the fallback, allowing the ZMT3-HH to be used in any situation. The ZMT3-HH is compatible with Earthworks WL40V or any Shure 1.25-inch, 28-thread compatible mic capsule. ■

Strother Bullins is Technology Editor for NewBay Media's AV/Pro Audio Group. sbullins@nbmedia.com

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Tech // reviews

ROYER R-10/MOJAVE MA-1000

New Ribbon and Condenser Mics From the Mind of David Royer



The R-10 is Royer's most affordable ribbon using the same engine as the classic R-121.

ROYER R-10 RIBBON MICROPHONE

The name Royer slips off the tongue as easily as studio standard ribbons like RCA, AEA, Beyerdynamic and others. The R-121 is a favorite of engineers and studios who can afford its \$1,295 price tag; until now, the only ribbon mic under \$1,000 was the R-101 at \$699, but the passive R-10 beats that. The new mic bowed just last month and sells for an astonishing \$499 street.

Royer's John Jennings offered that the mic uses the same internally shock-mounted ribbon transducer as the R-121, made in-house at Royer's California factory. What differs is the outer appearance and the transformer, which alters the personality just a bit. Also onboard is a multi-layered wind screen to protect the ribbon element. The R-10 utilizes Royer's patented off-set ribbon technology, which helps its SPL handling and also gives a slightly brighter response on the back side of the mic if the

instrument (or singer) is 3 feet or closer to it. The mic comes in a sturdy, padded case with mic mount and logoed Royer mic sock. I had a pair of the mics in use around Blackbird Studio and they are astonishing, making me want to bring them out on every session, often in place of an R-121. Of course, the first question out of anyone's mind is, "How does the R-10 compare to an R-121?" The answer is simple: The mids and top are nearly equal, but the R-10 has a fuller booty, necessitating an HPF on occasion.

On a Fender Deluxe combo amp up close on a speaker next to an SM57 it was never out of place or disappointing. The mics were gained using the stock 31105s on Blackbird's Neve 8078 in Studio A. The mid and top edge paired well with the 57, and the R-10, when called upon, brought a fullness to the bottom end of the track. If anything, it needed some EQ push at 2.5 kHz, but that's standard when I cut electric guitars.

In use around a drum kit, as a mono room mic, the R-10 was full-bodied and represented the drum kit very well, top to bottom. The great thing about ribbons, in general, is that they accept EQ at the top end very well, and being naturally rolled off, they often need the boost. In this case, I shelved above 6.8 kHz and added a touch of bottom end below 100 Hz. This brought the boom and top to the signal that paired nicely with the R-10's sweet midrange.

On various hand percussion the R-10 did what ribbons do—rolled off the top, which can be harsh when recording shaker or tambourine. Because of the bigger bottom end, a highpass filter was employed but the mid and top were perfect and very reminiscent of an R-121.

Where I absolutely loved the mic was recording the fiddle of Third Man Records recording artist Lillie Mae. I often use ribbons for this application because of the instant beauty they bring to a sometimes scratchy and exposed upper midrange and top. It's not so bad in a section when the mics are at a distance, but a close-miked solo violin in an iso booth can be a challenge. I placed the R-10 18 inches to 2 feet above the fiddle and used an SSL 9K preamp and channel to get into Pro Tools. It was instantly beautiful in the track and needed no EQ. That application alone is worth the price of entry. If you record strings, you can't ignore this mic.

Finding a new ribbon with a solid pedigree and at such a price is like striking gold. The Royer R-10 is an instant classic that is a must for any mic locker, high-end or low. And at this price, you can have a pair.

MOJAVE AUDIO MA-1000

Mojave Audio, a companion company to Royer (with designs by founder David Royer), specializes in making condenser mics of many types. Its latest offering, the MA-1000, draws from the company's expertise in electronics and capsule design. But the price forced a double-take when

PRODUCT SUMMARY

COMPANY: Royer Labs
PRODUCT: R-10
WEBSITE: royerlabs.com
PRICE: \$499 (street)
PROS: Wonderful-sounding, affordable ribbon mic
CONS: Zero found

TRY THIS

Two side-address ribbon mics can be placed as a stereo or M-S pair by placing one on a tall mic stand and the second on a short boom stand. By positioning the mics top to top, one from below, one from above, you can steer them as an x-y or Blumlein pair with perfect alignment of the ribbons on- and off-center.



The MA-1000 uses an NOS 5840 tube and custom transformer from Coast Magnetics.

I first saw the mic at Winter NAMM 2017. Mojave's mics have hovered below and above the \$1,000 mark, but the MA-1000 tops out at \$2,795 street. I was curious about what this new mic offered to justify the price.

The MA-1000 uses a purpose-built transformer from Coast Magnetics, an original NOS 5840 tube, and 3-micron, 1-inch gold-sputtered capsule. Features on the power supply include continuously variable pattern control from Omni to figure-8, a highpass filter at 100 Hz (6 dB per octave), and a switchable -15dB pad. The mic comes with an impressive carrying case housing the mic, power supply, Sling-Shock shock mount and cables.

The first application was over a drum kit. It was open and represented a stereo picture of the kit very well without being strident. I tried the mics in both cardioid and omni, finally settling on the former because it focused the kit more in the large room. Both patterns sounded great; it was just a matter of preference for this session and style of music.

On another session, I used the pair for recording toms on a drum kit. It needed little EQ help, and the transient hits were beautifully rendered. I regularly hear U67s, Josephson e22s, and TLM-107s in this application, and the MA-1000 brings its own signature to close-miking. The bottom end is full, but for me needed some boost at 100 Hz. The stick hit and top were beautiful and responded well to a little sweetening above 6 kHz.

PRODUCT SUMMARY

COMPANY: Mojave Audio

PRODUCT: MA-1000

WEBSITE: mojaveaudio.com

PRICE: \$2,795

PROS: Sonically excellent, great case for mic and accessories

CONS: Price may be out of reach for some

TRY THIS

When recording acoustic guitar, close miking can offer a boomy result, depending on the instrument. Two ways of battling tubbiness are to back the mics off the instrument a bit when using a directional pattern like cardioid or figure-8, or moving the pattern to Omni where proximity effect is not exhibited.

Next, I used an MA-1000 for tambourine and shaker. The MA-1000 sounded very good representing the sometimes out-of-control jangling of the tambo very well. The

pair of mics up close on a Yamaha C7 piano captured the instrument beautifully. The piano in Blackbird's studio A is bright and full, and the mics stood up toe to toe with a player who could play from *f* to *fff* in a moment. Transients were crisp without distortion, and the bottom end was sonorous.

On acoustic guitar, a single MA-1000 shined when paired with a Neumann KM56. The MA-1000 was set up pointing at the low end of the instrument while the KM sat near where the neck meets the soundhole. Both mics rendered an excellent stereo picture of the expertly played guitar.

The Mojave MA-1000 is an excellent microphone that brings a smooth, evenly tempered response across a range of applications. It's great around a drum kit either overhead or up close on toms. It also excels on acoustic instruments like guitar, piano and percussion. Highly recommended if you can swing the price. ■

Kevin Becka is Mix's technical editor.

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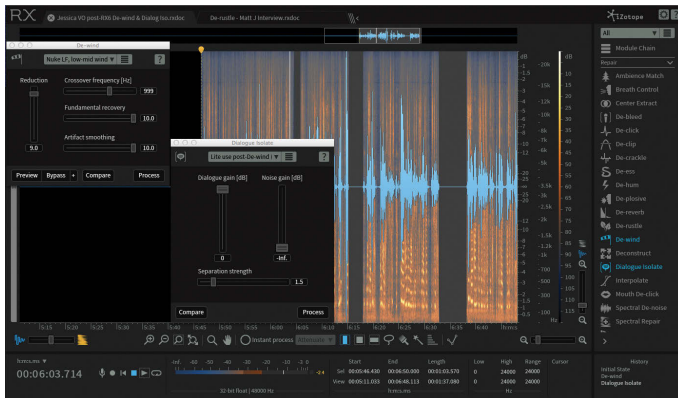


Fig. 1. The RX 6 Advanced standalone application is shown here with the GUIs for two of its modules—De-wind and Dialogue Isolate—placed left of center.

I've used the sequential versions of iZotope's RX Advanced standalone application and component plug-ins on all my post-production sessions for several years. With each new release, it keeps getting more powerful, versatile and, frankly, indispensable. The latest version, RX 6 Advanced, promises solutions to some of post's most vexing and immutable noises that pollute dialog tracks, including wind and the sound of clothing brushing against a lavalier mic.

Other new processing modules (for the standalone application) and plug-ins aim to isolate dialog and reduce mic bleed, sibilance, mouth clicks, lip smacks and breathing noises. The new Composite View combines up to 16 active tabs into a summed spectrogram/waveform display and is useful when you want to apply the same spectral editing to all tracks at once. RX 6 Advanced can also export files in MP3 format.

Legacy processors—De-click, Voice De-noise, De-plosive, Ambience Match, Center Extract and Deconstruct—have also been improved, as has the Find Similar (event) tool. The Module List has been better organized into Repair, Utility and Measurement categories, and you can save custom views of your go-to modules as presets for faster access.

RX 6 is available in three versions—RX Elements, RX 6 Standard and RX 6 Advanced. The Advanced version has the most features and highest price tag. The component plug-ins are available in AAX, Audiosuite DPM, Audio Units, RTAS, VST 2 and VST 3 formats. I used the AU plug-ins in Digital Performer 9, using an 8-core Mac Pro running OS X 10.9.5.

OFF THE AIR

One of three new modules in RX 6 Advanced that use machine learning and intelligent signal processing (the others are De-rustle and Di-

alogue Isolate), De-wind will reportedly only attenuate intermittent wind gusts that don't distort a microphone; it regards constant wind noise to be part of the desired noise floor.

The module's Crossover Frequency slider delimits how high in frequency (up to 1.5 kHz) the processing will act on the signal, while the Reduction slider sets the balance between wind-noise reduction and the original signal (see Fig. 1). The Fundamental Recovery slider re-synthesizes lower voice harmonics that have been obscured by wind noise, and the familiar Artifact Smoothing slider (also included in legacy noise-reduction modules) reduces watery-sounding artifacts that can occur with FFT-based processing.

I tried De-wind on the windiest track I could find in all my past post-production sessions—a female dialog track that was severely tainted by extremely strong low-frequency wind gusts that almost completely obscured the voice at times. Simply put, De-wind is a virtual hurricane shelter for dialog tracks. The module eliminated the track's low-frequency wind gusts—gusts that, during the original session, the RX 5 Advanced De-noise plug-in could not completely quell.

A moderately loud, airy wind—naturally modulating slightly in intensity—remained. Another new module, Dialogue Isolate, dealt with that in short order. I simply boosted the Dialogue Gain slider to the max and lowered the Noise Gain slider all the way to favor speech over noise, then raised the Separation Strength slider slightly to 1.5 (on a scale of 0 to 10) to attenuate the wind. This transparently reduced wind noise to that of a light breeze (I could've attenuated it more), which made sense of waving vegetation in the video without sounding obtrusive.

CLOTHES CALL, MOUTH OFF

The De-rustle module uses machine learning to attenuate the sound of clothing brushing against a lav mic. Two controls are all you need: Raise the Reduction strength slider to attenuate the rustling noise more (at the potential expense of speech clarity at high settings), and raise the Ambience preservation slider to retain more of the noise floor and background ambience (which De-rustle might otherwise remove).

De-rustle was very effective at reducing lav noise that was only about 3 to 6 dB lower than—and overlapping—male speech on the same track. Turning up the Reduction strength slider about two-thirds of the way attenuated the rustling noises almost to the point of inaudibility. The track suffered only a moderate reduction in depth, and clarity of speech was not noticeably impacted—an acceptable tradeoff. Once again, I was extremely impressed.

The new Mouth De-click module and plug-in are optimized for removing the sounds of mouth clicks and lip smacks. Aside from the

PRODUCT SUMMARY

COMPANY: iZotope

PRODUCT: RX 6 Advanced

WEBSITE: iZotope.com

PRICES: RX 6 Advanced: \$1,199;

RX 6 Standard: \$399; RX Elements: \$129.

PROS: Mutes noise that used to be impossible to remove. With judicious settings, most processing sounds remarkably transparent. Includes standalone application and component plug-ins. Excellent interfaces.

CONS: The Advanced version might be too expensive for some people.

fact that it includes no drop-down menu for selecting alternate algorithms, its control set and operation are the same as with the De-click module.

In A/B comparisons treating an adult female dialog track, RX 5 De-click and RX 6 Advanced Mouth De-click were equally effective at removing extremely loud mouth clicks and lip smacks vented by an off-mic, hyperactive child (up to 6 dB louder than the adult's speech!). Mouth De-click, however, better-preserved bass spectra in the underlying track and introduced far less audible watery-sounding artifacts—a definite improvement.

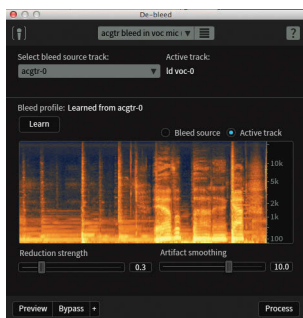


Fig. 2: The new De-bleed module's interface

MUSIC PRODUCTION

The new De-bleed module attenuates or removes bleed in a track from an off-mic source. To use De-bleed, you have to import two tracks into the standalone RX 6 Advanced application: the track containing both desired audio and unwanted bleed ("Active Track"), and a track that contains only the audio from the source of the bleed ("Bleed Source Track"). (iZotope doesn't recommend using De-bleed in Composite View to treat multiple tracks at once.) The two tracks must have matching sampling rates and be time-aligned within a few milliseconds of each other.

The De-bleed module is used on the Active Track. In De-bleed's interface, you select the Bleed Source Track from a dropdown menu. After making a time-range selection in the Active Track where the bleed is most apparent, click on De-bleed's Learn button to initiate

the module's analysis of the problem. After the analysis is complete, the center of the interface shows a spectral display of either the Bleed Source Track or Active Track, depending on which associated button you click (see Fig. 2). Drag the Reduction strength slider to the right to progressively remove more bleed, and adjust the Artifact Smoothing slider as needed to avoid unnatural sound.

I used De-bleed on multimiked tracks for a male singer who was simultaneously playing acoustic guitar. De-bleed did an amazing job reducing guitar bleed into the singer's mic. Any higher than a 0.3 Reduction strength setting (very low) thinned the singer's deep bass register. But even such ostensibly light processing was remarkably effective at reducing bleed to an acceptable level.

Used on the same vocal track, the new Breath Control module was both extremely effective and transparent. The module has two modes of operation: Gain mode applies the same amount of gain reduction to all detected breaths, while Target mode lowers only loud breaths to your specified target level.

I also got fantastic results on the same track using the new De-ess module (also available as a plug-in), which lets you use either a spectral or more conventional mode of processing. Spectral mode uses multiband compression (using dozens of bands) and spectral shaping to achieve ultra-smooth and transparent results—without audible modulation—on complex programs. Love it!

Obviously, De-bleed, Breath Control and De-ess also have uses in post-production. And while there are other de-essers and breath attenuators available (including impressive plug-ins made by iZotope), many of RX 6 Advanced's other new modules offer veritable breakthroughs in audio repair, effectively eliminating noise that was heretofore impossible to remove. RX 6 Advanced is a stunning achievement and a must-have for anyone working in post-production. ■

Michael Cooper is a recording, mix, mastering and post-production engineer and a contributing editor for Mix magazine.



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SOUNDELUX USA U99 MICROPHONE

Re-imagined U67 from David Bock



Since the 1980s, the name Soundelux has meant many things, with the brand evolving from a sound design company to an award-winning library to a provider of dozens of services touching all areas of the audio industry. Part of that legacy is David Bock, whose penchant for mic design can be traced back to his work repairing holy-grail vintage mics at various California studios.

Since his time at Soundelux, and eventually starting his independent brand, Bock Audio, his philosophy of producing quality, handmade, boutique microphones at reasonable prices has been responsible for some modern classics. His latest offering, the Soundelux USA U99, is the second Soundelux USA-branded mic since Bock's acquisition of the brand name in 2016.

The original Soundelux U99 was produced from 1999 through 2006, and, like the original, the new mic features a K67 dual-backplate capsule allowing adjustable polar patterns. Also echoing one of the most interesting features of the original, the polar pattern adjustment control, found on the power supply, is continuously variable from Omni to figure-eight. It is not stepped or detented.

The U99 takes a turn with its vacuum tube, using a NOS Philips 5840w subminiature pentode run as a triode. The 5840s are a currently a popular choice in pencil condensers like the Telefunken ELAM 260 or Mojave MA-100 because of their small size. Like the Soundelux USA U195, the U99 features a "Fat" switch. On the U195, this was a low-frequency boost. According to Bock's description, the U99's Fat switch plays more of a role in affecting the bias of the tube to alter the low-frequency character of the mic. Other bells and whistles include a pad and a high-frequency tilt, which can boost or attenuate the top end, with a

two-position adjustable frequency selector when used as a cut. These controls are active circuits, which are truly bypassed when set to the "flat" position.

GUITARS, VOICE, CELLO, BONES

My first use of the U99 was an overdub session recording electric and acoustic guitars. I set up the U99 about a foot-and-a-half away from the acoustic guitar pointed just about where the neck met the body. I had all of the switches set flat and the polar pattern set to cardioid. When listening, the guitarist started out playing big, jangly chords, with some staccato palm-muting in between. The first thing that caught my ear was how snappy the sound was. The mids had this unique thick, tight attack, and the top end was detailed but very smooth and non-abrasive.

We moved on to electric guitar, first recording a low staccato riff with a clean amp tone. The Soundelux USA U99 was about a foot away from the amp, just slightly off axis, and again, this fat, punchy, warm tube sound came through. The low end had a nice "thunk" to it, and the highs were clear, de-

TRY THIS

Adjusting the sweepable polar pattern setting on the Soundelux USA U99 often had an EQ-like effect. There are obviously a lot of factors involved; for example, drifting toward Omni when recording vocals in a small iso booth results in a boomier sound because the room resonances are capturing more, while tightening the pattern toward figure-eight brightens the signal by removing them. On top of that, many mics, including the classic U67 show different frequency responses relative to their polar patterns right on their spec sheets, so there could be factors on an electrical level. Try playing in these areas, before always turning to EQ.

PRODUCT SUMMARY

COMPANY: Bock Audio/Soundelux USA

PRODUCT: Soundelux USA U99

WEBSITE: www.bockaudio.com

PRICES: \$2,599

PROS: Great sound with a good deal of versatility

CONS: No onboard highpass filter

tailed and anything but harsh. Out of curiosity, I engaged the Fat switch to see what it would do, and the most noticeable effect, in this case, was that the sound started to break up a little bit in the low end. Desiring a cleaner tone, we took the Fat switch off. Later, when using a slightly dirty tone on the amp, the Fat switch added a nice subtle but noticeable punch to the low end. The overall sound was warm, punchy and nostalgic, like a '60s feel but with a more modern low end.

The Fat switch shined on heavily distorted palm-muted guitars. This time the effect was not subtle, as it seemed to change the overall character of the signal completely. In normal mode, the guitar sounded great. It was thick and tight, and the top end had a nice bright sheen. After engaging the Fat switch, however, the lows picked up this tightly compressed sound that lifted them out from the signal in a controlled manner.

Next, I tracked vocals with a male baritone singer. In each take, the mic took to the low midrange of his voice with clean, clear, swelling sounds, falling short of being boomy. The sound seemed too dark on top to pop in the track, but turning on the high-boost switch made a difference, though it was still too subtle to get him cutting through. Boosting top-end EQ when tracking with a tube mic is often a dangerous proposition because many tube mics have a hissy self-noise, but that did not seem to be the case with the Soundelux USA U99. After adding some EQ, I realized that this was one of the quietest tube mics I've heard.

I tried using the Fat switch with the singer, but it didn't help the cause. If anything, it brought out a lot of plosives and got in the way. On an announcer-type voiceover, on the other hand, the Fat switch was a nice trick. The results weren't nearly as profound as what I had heard on that blistering guitar track, but it made a positive difference that was accentuated when adding compression

and subtle equalization. As with the guitar, it lent a punchy, percussive sound to the low end and pushed the consonants, in both cases with a desirable restraint.

One of my favorite uses was miking a solo cello. The mic was backed about two feet from the instrument, pointed between the f-hole and the bridge. When the cellist bowed her first note, everyone's jaw dropped in the control room. The low end enveloped the room, but the top end was velvety smooth. The tracking room was a bit dead, so with a little reverb, the sound was pretty perfect, with no equalization.

Recording bass trombone was one application where the top end got to be a little harsh and warranted the use of the high-frequency cut switch. The switch engages an additional circuit that can center the high-frequency shelf at either 5 kHz or 2.5 kHz. In either case, the effect was relatively subtle and ultimately necessitated positioning the mic pretty far off axis from the bell pointed downward towards its opening. The resultant sound was that same thickness that I had heard on guitars with a tame and pleasant growl.

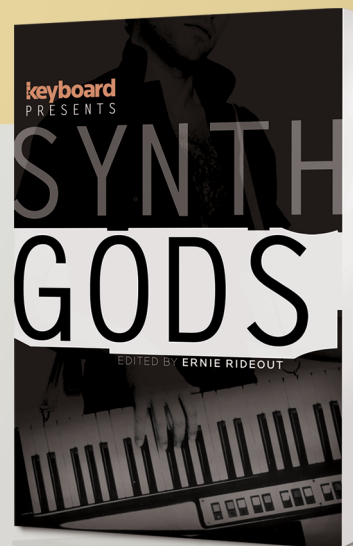
It is worth noting that the output of the mic was pretty hot, even with the pad switch engaged. In the case of recording bass trombone, as well as electric guitars, I typically had to pad the mic preamp in addition to engaging the mic's own pad just to avoid clipping the converters.

A NEW CLASSIC?

Altogether, this microphone is the ultimate studio workhorse. It always produces a great-sounding recording and never gets subbed out once it goes up. It's obviously a lot more affordable than a vintage U67, and won't give you that same fear or apprehension when it comes out of the locker. With all of its settings, it also provides a much wider range of sounds than a U87, while coming in at a lower price tag. If you're looking for a flagship mic to build your locker around, this should certainly make your top five. If it's time to retire one of your Neumann classics and you're eyeing a young rookie for the future, this kid's a first-rounder for sure. ■

Brandon T. Hickey is an AZ-based recording and post-production engineer.

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SOUNDWAYS RIN-M SOFTWARE

Metadata Collection for Any DAW

Album credits, which were once readily available on vinyl and CDs, have become casualties of the music-streaming world. It was the sole way of building your résumé and establishing a connection to a project for later remuneration, and awards. Since the credit stream withered, the Recording Academy's Producers & Engineers Wing and other organizations have been working on standardization and implementation of a solution.

Soundways RIN-M software is an elegant and free way to collect credits and session technical info as metadata for pushing down production and sales streams. Hot on the heels of the latest version of the RIN standard that was just published last year comes RIN-M, a DAW-agnostic plug-in, or standalone software, designed specifically for this purpose.

RIN is the acronym for Recording Information Notification – a standard created by DDEX for the purpose of documenting recording session and music project information as metadata to be used along the audio production supply chain. DDEX was formed in 2006 by a group of media companies, digital service providers and music licensing organizations with the intent of setting standards for communicating information on products including creator credits, sales information and ownership.

The RIN-M plug-in brings this standard directly into any DAW where recording professionals, including engineers, assistant engineers, producers, recording artists and musicians, can capture, store and export essential data for every song in a project.

THE INTERFACE

RIN-M is a single-screen plug-in that may be instanced on a track in any DAW. RIN-M works on Mac and PC in AAX, AU and

The plug-in is linked to tutorials and information regarding obtaining ISRC, ISWC and ISNI codes from Soundways.com.

ple rates, and information about whether the project contains pre-recorded samples.

The middle of the plug-in is where you will spend most of your time. This section allows you to easily add players' names, addresses, ISNI codes and more. Here you would also define their roles in the project by type and category, flagging the person as an engineer, performer, manager, producer, distributor, media company, label and more.

Next, you would save the person's profile, which now lives in the plug-in and on your system, making it easier for you to recall them into the next song and project. RIN-M grows as you use it.

One of the most important features of RIN-M is the inclusion of ISRC, ISWC and ISNI codes in the data stream. Tutorials on these codes and information on

VST formats. Minimum system requirements include Mac OSX 10.8 or Windows 7 with Pro Tools 10 or any VST2, VST3 or AU host. I tested the RIN-M plug-in in Pro Tools 12.8.1.

The best practice for RIN-M is to have a dedicated instance for each song in a project. Common data such as the names of players and creators can be easily imported to other RIN-M plug-in instances in the project, making it easier to use as each song/session is created and moves through production.

The interface is very intuitive and breaks down into three basic sections. The topmost section is for the Artist and Song Title. At the bottom is more global information, such as the song's ISRC and ISWC codes, original and final audio file formats and sam-

TRY THIS

Instance RIN-M on a new AUX track in your DAW titled CREDITS and give it a bright color. This way, users downstream opening the session can readily see where the plug-in resides and easily enter additional metadata.

PRODUCT SUMMARY

COMPANY: Soundways

PRODUCT: RIN-M Software

WEBSITE: soundways.com

PRICE: \$Free

PROS: Elegant and easy logging of album credits, by song, directly into a DAW

CONS: None found

One of the most important features of RIN-M is the inclusion of ISRC, ISWC and ISNI codes in the data stream.

how to obtain them are linked to the bottom of the plug-in from the Get Codes button. The button takes you to Soundways' website, where you can obtain a free e/iBook and product manual that helps you learn and understand more about DDEX, RIN, ISRC, ISWC and ISNI.

WHERE DOES THE DATA GO?

While RIN and the RIN-M plug-in represent a major development for our industry, there is still work to do at the label end. Major labels already use the DDEX ERN (Electronic Release Notification) standard. RIN itself is a new standard, just published in October.

I talked to Tony Brooke, RIN developer and Product Specialist Content Operations at Pandora, who said that some labels (including one of the majors) are working on the ability to ingest the RIN file, the same type exported via RIN-M. Although they have not given an ETA, the major label has been a significant part of the DDEX working group that developed RIN and is partway through development of ingestion.

Today, RIN can't yet be ingested by the labels. However, they will collect and hold them for later ingestion. Data such as credits and services are often added well after the first street date of a release. For

example, Pandora receives a constant flow of DDEX ERN "update messages" to adjust that information—change rights, correct mistakes and make other alterations after the initial delivery of an album/single.

Brooke's educated guess is that we will see other players step up soon. The "mini-majors" have resources to improve their automated data ingestion and can move more nimbly than the majors can. Also, "artist aggregators" such as CD Baby, Distrokid, TuneCore, Believe and others have UIs that allow automated submission of albums one track at a time. This is a logical place to add the ability to upload a RIN. But all of these players have a vested interest in reducing their manual data entry labor costs, and RIN is a perfect way to do that. RIN can save labels money, which is the best incentive for making this all work.



RIN data follows a song from the writer to the streaming services.

WHERE TO NOW?

While RIN-M is free, there is a PRO version now in development that will contain additional options at a very affordable price tag. The point is to help Soundways offset development and marketing costs; RIN-M has been completely out of pocket for the Memphis-based company.

Downloading and using the plug-in is a must for all audio engineers, songwriters and producers—whether they're involved in recording, mixing, mastering or post-production. Robust metadata collection from the beginning of the production path establishes a connection between the creators and the owners of the work, and the many streaming and sales services downstream. Get RIN-M, use it often, export your metadata, and get in the habit of sending it along with your session and files. How much can you hate money? ■

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Spatial Audio at AES



By Kevin Becka

I'm a 3D audio tech nut. I've always been interested in surround and have had opportunities to make some great recordings over the years. But where 5.1 is limited to those with access to playback systems, Spatial Audio spans more users from mobile up to the big screen, and the business is growing.

Tim Merel at Techcrunch says: "...mobile AR could become the primary driver of a \$108 billion VR/AR market by 2021 (underperform \$94 billion, outperform \$122 billion), with AR taking the lion's share of \$83 billion and VR \$25 billion. So it's the wild wild west and content will be king once the delivery platforms are established." The last six words in the previous sentence are the keys to the kingdom. Insiders speculate that Apple and Samsung will release AR-enabled phones (Augmented Reality), with a VR solution (Virtual Reality) hot on its heels. With so much money in play, it's just a matter of time.

Gaming is the obvious application for VR, but for amateurs and pros alike, the tools to produce slick-looking 3D, 4k content with post-produced audio are here now. At NAB back in April, I saw my friend and 3D audio guru Michel Henein in the Vuze booth demoing the new RS360 Cinema software from VisiSonics. Michel describes it as "a standalone spatial audio toolset designed for easy authoring of 3D audio for 360 video." It offers post-production pros an intuitive 3D interface that shows audio tracks overlaid as objects onto 360 video. It features MIDI timecode for synchronization and streaming audio from any Native DAW directly into the app. Henein explains, "Ambisonics (up to 7th order) and object-based spatial exporting is supported with automatic metadata injection for YouTube and Facebook 360 video platform." The software was designed in partnership with Humaneyes, makers of the first-ever 4K stereoscopic 3D 360 video camera that is priced under \$800.

At the 2016 AES show in Los Angeles, Spatial Audio was dubbed Audio 4 VR Expo and included a small but impressive array of exhibitors in a hallway upstairs at the LACC. This month in New York it will be expanded, covering both pro and consumer audio in a demo area with a presentation stage. No doubt it will benefit from some of the joint efforts this year with NAB, which at April's convention called their area the Virtual Audio and 3D Pavilion.

For amateurs and pros alike, the tools to produce slick-looking 3D, 4k content with post-produced audio are here.

Besides the toys on the floor, there will be a Spatial Audio Track that is scheduled to include some great presentations. Edgar Choueiri of Princeton University will talk about the challenges and solutions surrounding the delivery of binaural audio through headphones (BAH) and loudspeakers (BAL). He'll cover the recently developed BACCH-HP headphones technology, allowing 100% of listeners to perceive binaural audio as a well-externalized 3D image outside, and far from their heads. Albert Leusink of Tumble and Yaw will outline the differences and similarities between spatial and stereo workflows, binaural rendering engines and its impact on phase and frequency response in the Ambisonic soundfield.

Kedar Shashidhar from OSSIC in San Diego will use examples of spatially mixed recordings from Grammy Award winning artists in various genres, including EDM, pop and jazz. His tutorial will cover basic concepts in spatial audio, signal flow, creative tips and best practices when producing a track in Higher Order Ambisonics, plus distribution and release of 3D audio content.

Nuno Fonseca of the Polytechnic Institute of Leiria, Portugal, and founder of Sound Particles, a randomization plug-in with intelligence, will cut through the confusion covering the most common 3D audio concepts, formats and technologies, demystifying the terms Ambisonics/HOA, Binaural, HRTF/HRIR, channel-based audio, object-based audio, Dolby Atmos, Auro 3D and more. Paul Special, Founder of SAS and Richard Warp with Intonic in Emeryville, Calif., will co-present and talk about 3D workflows and the growing networks of pros working in immersive audio. Finally, Ravish Mehra of Oculus Research will discuss the challenges surrounding the generation of acoustic signals that reproduce the properties of natural environments through headphones. Heavy stuff (pun intended).

So what does it mean for Joes and pros? All this new tech and gear means possible new production revenue streams for immersive sound-for-picture—from gaming, concert videos and motion pictures, down to consumer gigs like web content for travel and resort industries, streamed commercials in the YouTube format, and more. If you're at AES check out the Audio 4 VR Expo and the presentations. It will expand your mind, and maybe your wallet. ■

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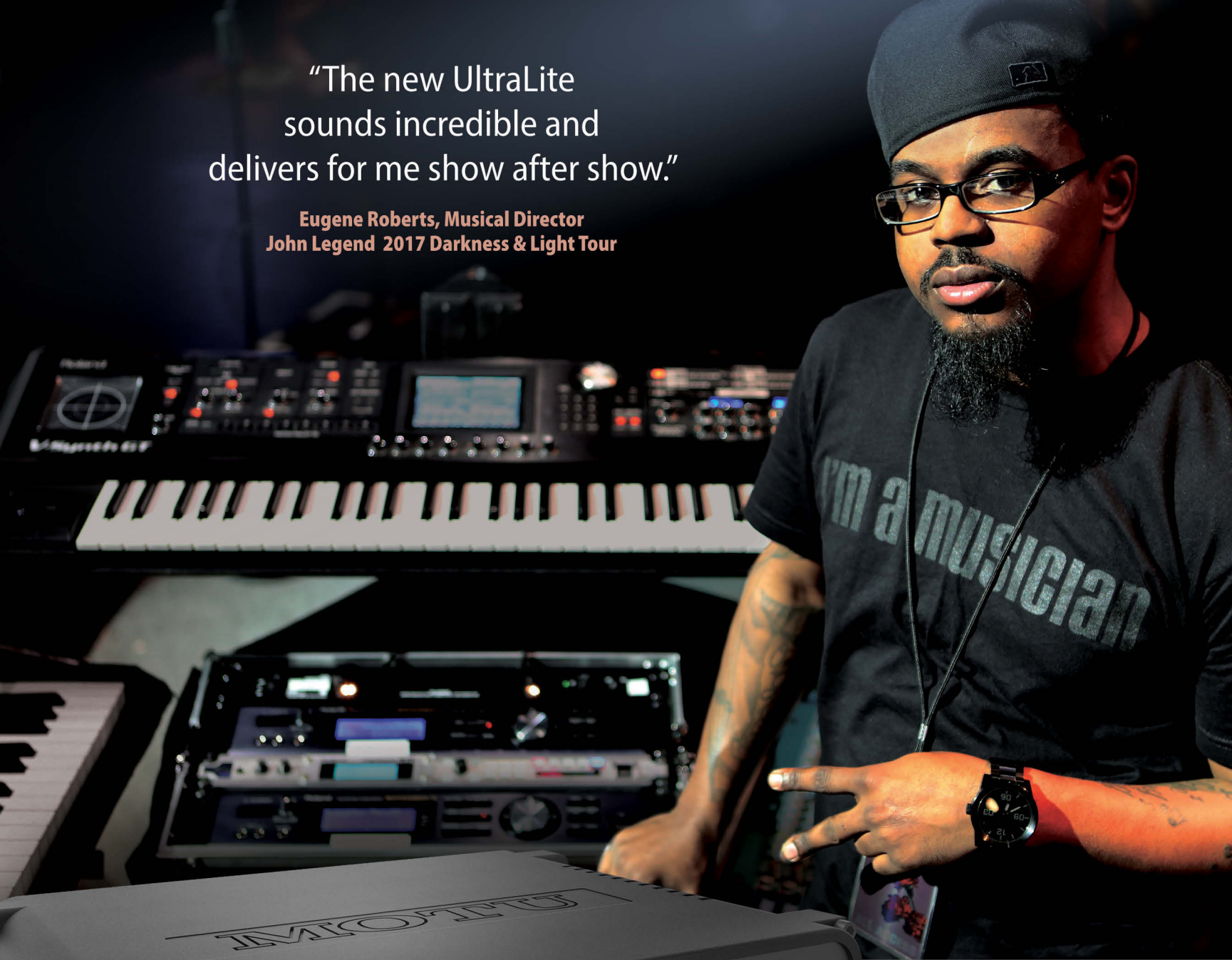
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