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**On the Cover:** Thermal imaging, body sensors, HDR video and 9.1.4 Atmos audio come together in the Bio-Physical Lab at Dolby Laboratories' stunning new 16-story headquarters in downtown San Francisco. **Photo:** James Ken Butler.

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## From the Editor

### BRINGING IT ALL BACK HOME

Three things struck me immediately after two separate days of walking through the stunning new Dolby Building at 1275 Market Street in San Francisco. The first was the impact of real Science and how it informs algorithm development in the creation of new technologies. It sounds so obvious, I'm aware: R&D precedes product development. But at Dolby, with its open architecture up and down 16 floors and its state-of-the-art system integration, the interaction between neuroscientists measuring multi-sensory perception and end users testing available tools in real-world scenarios brought it all into focus.

Dolby's approach to measuring sensory perception, and then using that information to create tools for professionals and consumers for delivering a more impactful immersive experience, whether in sound or image, is what lured Dr. Poppy Crum, Ph.D., away from a position on the research faculty, bio-medical engineering, at Johns Hopkins Medical to become Head Scientist at Dolby five years ago. A violinist and recording engineer, with a doctorate in neuroscience and psychology, she had been enamored of Dolby and its approach to studying perception since attending her first AES conference at age 17.

Today she has critical listening and measurement labs to rival anything in academia, and she and her staff of neuroscientists are playing a key role in setting the standards for how all of us receive and perceive content, in whatever form it is delivered. That's a pretty cool job.

Second, I was reminded of just how hard it is to build a building. Bringing the art and architecture, the floor plans and workflows, and the needs of multiple groups together into one cohesive audio-video-data infrastructure is incredibly complex, even in a simple office building. For a company like Dolby, with standards-critical tolerances in room design and a need for no-compromise performance in systems, the job is infinitely more complex. My hats off to Matt Lavine and his team at Bug ID, along with all the Dolby department heads and liaisons, for bringing it all together over these past three years.

My final impression was that after nearly 30 years of covering professional audio—including writing about film sound at the dawn of AC-3 encoding and 5.1 playback, visiting their famed Presentation Theater on Potrero multiple times for demos, going

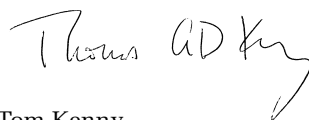
to their studios when they entered gaming, and so on—I really had no idea what Dolby was all about.

Of course I knew about Ray Dolby's development of Type A noise reduction back in 1965, and his brilliant business decision to license it. I witnessed the rise of encoding and learned why lossless compression matters. I knew they had developed a high-end video reference monitor, but wasn't entirely sure why, or how it fit in. Same for laser projection. And of course I have been following the entrance of Atmos into cinemas and now homes, under the moniker of Immersive Sound.

So it all came together for me when I saw a Vizio Dolby Vision display on the tour, side by side in a dark room with a straight 4k monitor. The difference was shocking. Luminance, clarity and rich, rich blacks. Depth in the image. A much closer representation of reality. And they do the same thing in sound. Audio and Video and the coming of Augmented Reality. Dolby is about multi-sensory perception. It's not just Immersive Sound. Dolby is a company built around Total Sensory Immersion.

Dolby is not a disruptive technology, to borrow overused parlance from Silicon Valley, nor is it transformative. It's more of a foundational or bedrock technology at this point, a wrapper that accompanies a majority of the audio and video stimulus we experience. Dolby has taken its hits and criticisms over the years, as is common for companies that dominate market share. But to survive and thrive over 50 years in the heart of new technology development, adapting as formats change and new markets emerge, is no easy feat. It's also not easy becoming a household name, especially when few households have any idea what you do.

There are many other companies doing worthy research into sensory perception and bringing products to market, from binaural recording/playback to spatialization and visualization studies for goggles and headsets. But nobody in the media and entertainment world brings it together like Dolby. Nobody.



Tom Kenny,  
Editor





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# The Incentive Auction and What It Means for Wireless Audio

*[Because Shure has been an industry leader in negotiations with the FCC regarding pro audio wireless systems and the auction of spectrum, Mix asked Mark Brunner, Senior Director, Global Brand Management, Shure Incorporated, to chime in on what wireless users need to know.]*

The U.S. Federal government's Incentive Auction of RF spectrum is upon us, which will have significant impact on TV Band wireless microphones, ear monitors and intercoms in the years to come and lead to changes in the way we deploy wireless gear at events large and small. Unlike the 700 MHz Band changes following the completion of the DTV transition, the Incentive Auction's restructuring of operations in VHF and UHF will roll out city by city in a "patchwork quilt" of changes to TV channel assignments and the arrival of new LTE deployments. Termed the "TV Band Re-pack," this transition is scheduled to transpire in the 39 months following the completion of the Incentive Auction, which will likely run through the summer months of 2016 and conclude with the Channel Reassignment Public Notice this fall.

**What's the Incentive?** TV stations are being offered a "once in a lifetime opportunity," according to FCC Chairman Tom Wheeler, to participate in a spectrum auction designed to free up TV channels for mobile broadband use. In doing so, stations that decide to go off the air and relinquish their licenses, share channels with other stations, or move to less desirable VHF channels can share in the revenues generated by the auction. Their participation is vital—without volunteers there is not enough spectrum to auction—but because it is confidential, it is also a wildcard in the final restructuring of the Band. The number of volunteers will have a direct impact on the amount of spectrum offered at auction, which will start at the top of today's TV Band (698 MHz) and move downward. The first visibility wireless microphone operators will have to the future TV Band plan will be the Channel Reassignment Notice.

**How Will I Know?** While the Notice will reveal the plan, the actual implementation will be a complex exercise and it will vary by city. For wireless microphone users to comply with operating rules, they will need a dashboard of the changes in TV channel assignments and commencement of new LTE operations. The current plan is to reflect these changes in the TV Bands Geolocation Databases, which were created a few years ago to usher in "white space devices" to the TV Band in a sharing arrangement with wireless microphones. To date, very few white space devices have appeared in the field, but the Incentive Auction band plan ensures that adequate spectrum remains for this new technology. The databases are also an important tool for licensed wireless microphone operators to "reserve" vacant TV channels at specific locations and times and effectively "block" white space devices from access to these channels—an important protection from potential interference.

**The Benefits of Licensing:** Wireless Microphones are classified

as a licensed service under Part 74 of the FCC's rules. Until recently, however, a limited number of entities actually qualified for license eligibility. In anticipation of the increased crowding of the TV Band that will result from the Auction, the FCC amended its eligibility rules for Part 74 wireless microphone licenses to include venues and sound companies that routinely use 50 or more RF channels. This is a significant development for pro audio and will allow an increased number of important productions across the country to reserve channels in the Geolocation Databases and prevent interference. Additionally, the FCC recently identified several other spectrum bands for use by licensed operators, which will help offset the reduction of UHF spectrum after the re-pack. If you are running a venue or campus that meets the criteria, it is time to get a license. If your tour or festival depends on wireless microphones, intercoms and ear monitors, make sure your sound company is licensed. The benefits are significant, and will become increasingly important in the years ahead.

**What About My Current Gear?** The complexity of the Incentive Auction and re-pack process is unprecedented in the global history of spectrum reallocation, and it has raised several critical issues for "incumbent" operators in the TV Band. Suffice to say, some of today's wireless microphones operating on frequencies in roughly the 600-700 MHz range will not be legally operable in the years to come. But the new LTE spectrum in UHF will require "guard bands" between the uplink and downlink blocks and to separate their service from the TV stations in the frequencies below. These guard bands are slated for shared use between wireless microphones and white space devices and, in some cases, exclusive use by wireless mics. Manufacturers are working with the FCC to create rules for operation in the guard bands and to ensure that as many products in the field that can comply with the new rules and band plan are able to do so. They are also gearing up to help users through the coming transition, to develop products that take advantage of the newly authorized licensed spectrum bands, to improve spectral efficiency, which increases the number of wireless systems one can operate in limited spectrum, and to create more offerings in unlicensed bands that are unlikely to be targets for auction and reallocation.

**The World Is Wireless:** If the situation seems complicated, that's because it is. As more and more of our daily life relies on wireless technology, the job of the FCC and other international regulators gets more challenging. But the benefits of wireless are clear, and they are here to stay—in pro audio and elsewhere. Thankfully, the audio industry established a foothold in wireless years ahead of personal computers, smartphones, and your refrigerator. The trick now is to make room for these services and technologies while allowing the show to go on. Fortunately for our industry, policy makers enjoy a great concert, broadcast event, or theatrical performance as much as anyone else. It is our job to ensure that they continue to understand what it takes behind the scenes to make them happen. ■





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# Music



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Photo: Mark Shaw

Charles Bradley

## CHARLES BRADLEY'S 'CHANGES'

By Barbara Schultz

**T**he challenge for producer/engineer/guitarist Thomas Brenneck, who has completed his third album with the fabulous '60s-style soul singer Charles Bradley, is somehow to capture the sound of the great classic R&B records he loves, yet twist things just enough so that Bradley's releases have their own place.

Brenneck is the first to point out that it all starts with the performance; everything grows from Bradley's immense, raw talent and the deeply personal way he connects with his audience, and from the inventiveness and feel that Brenneck

and the rest of the band bring to bear.

"Musicianship and songwriting have the biggest effect on the timeless quality that we're going for," Brenneck says. "But it can still be like climbing a mountain, to sound like the records that we love."

Brenneck learned many of the engineering techniques he uses from his friend Gabe Roth, the bassist, producer/engineer, and musical director for Sharon Jones & the Dap-Kings, among other things.

"Gabe is also the one who introduced me to Charles," says Brenneck. When they first met in

2001, Bradley was performing as a James Brown imitator to eke out a living as a singer. "He wore his James Brown wig all the time," Brenneck recalls in the film *The Soul of America*, a documentary about Bradley's life and career.

Back then, Brenneck was still making records in his parents' basement. Later, he built Dunham Studios (Brooklyn), where two of the songs on *Changes* were recorded and mixed as a Record Store Day single in 2013: the original "Ain't It a Sin," and the Black Sabbath cover (!) that serves as the album's title track.

Soon after that, the lease on Dunham





Thomas Brenneck

Studios ran out, and Brenneck opened Diamond Mine in Queens, with the help of three bandmates: drummer Homer Steinweiss, saxophone player Leon Michels and bassist Nick Movshon, all of whom play on Bradley's records.

"It's a 1,000-square-foot loft. [Studio and technical consultant] John Klett designed the studio and helped us choose dimensions and materials," says Brenneck. "Because we record full bands live often, we wanted to have a nice-sized live room, as well as a good-sized control room. There's also a really small iso booth and a lounge."

The centerpiece of Diamond Mine's control room is a custom 24-channel 1970s Spectrasonics console fashioned by joining separate 16- and 8-track boards. "It's got a really specific heavy, thick sound to it," Brenneck says. He has since changed to an MCI tape machine, but when they made *Changes*, his recording platform was a 1-inch, 16-track Tascam.

Brenneck begins Bradley's sessions with the rhythm section. "That's the bass, drums, rhythm guitar and organ in the room," Brenneck says. "I don't



think we cut anything with less than four people, set up in a square so we could see each other."

Brenneck captured drums with two Altec birdcage mics: a 639a overhead and a 671 ribbon on the kick. "Very little EQ, very little compression, and then I'd just check the phase and sum them to one track," he says.

Bass was taken DI, but they would leave a bass amp turned on quietly in the room, so the musicians could feel it without wearing headphones. "I use an Electro-Voice 664 on my guitar, and an EV RE15 on Leslie, the same mic I use for Charles' vocals on the whole record," says Brenneck.

Bradley's vocals are always overdubbed (as are horns and backing vocals), and require various types of preparation. "I know the man pretty well at this point, so I like to get him comfortable, and have a few drinks, so I get a good performance out of him," Brenneck says. "And on this record particularly, he was obsessed with burning Palo Santo, so the room was fairly full of smoke."

Bradley also needs time to nail down some of the song lyrics. "Charles' literacy is not so happening," Brenneck says. "When I first met him it was clear to me and we put him in reading classes, but he's a 67-year-old man and he dropped out of school in junior high. It's hard for him to pick it up now. If he's looking at a piece of paper trying to sing, he can't sing to his best ability.

"So what I do is a lot like what Jimmy Reed's wife used to do. I just whisper the line—take it line by line. What's amazing, though, is there's still plenty of room for Charles to do a lot of amazing improvising, which I'm all about capturing."

Once the performances are captured, however, Brenneck still has work ahead, to nail the classic soul sounds he's after. "We're going for a '60s

production, but all our gear is rock-solid 1976," he says.

One key that the producer has found involves using vintage filters. "More than EQ'ing anything, my favorite thing is filtering," he explains. "I remember listening to old Allen Toussaint records—The Meters and Lee Dorsey and Ernie K. Doe—and on all those old New Orleans recordings, the drum sound is so iconic, and that's the kind of stuff my ear always leans to. I think it was Gabe who pointed out to me, it sounds like the whole band is in mono and everything above 6k is filtered out, and the vocals have all that room to breathe." ■



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## JUDAH & THE LION RECORDS IN LOW COUNTRY SOUND

Nashville-based Americana-folk band Judah & The Lion recently released *Folk Hop 'N Roll*, an album whose name couldn't be more spot-on. It's a unique, catchy blend of folk and hip-hop, produced by Grammy Award-winner Dave Cobb (Shooter Jennings, Sturgill Simpson, Chris Stapleton and Jason Isbell) and engineered by Eddie Spear.

Spear has been engineering for Cobb for about a year; Cobb approached Spear and asked if he'd like to record *Folk Hop 'N Roll*. "Obviously I said yes!" Spear says.

The album was recorded at Cobb's home studio, Low Country Sound in Nashville. Spear says they primarily laid down the tracks live. Drums were in a booth, as were vocals, and mandolin and banjo were in the main room together with no isolation.

"We felt having them in close proximity helped get a more 'live' energy," Spear says. "A few moments were punched in and a lot of the electronic-based parts were us goofing off and having fun on some of the later days of the record, but we wanted it to feel lively. Gang vocals were definitely the most fun to record late night after a few drinks! You can really hear Drew Long, the assistant on the record, in the gang vocals; I loved his commitment to the high-energy performance. He also did a fantastic job on this record; he's a great guy!"

Spear says the band had been listening to early Beastie Boys records and wanted to make something with that raw energy. "We made the drums pretty explosive, with minimal microphone techniques and some heavy compression," he says. "We wanted to commit to anything that felt high energy or exciting. The guys would work on the arrangements with Dave, we would maybe change out a snare or a compressor style to get the energy right and then hit Record."



"A lot of the tracks were written fairly on the spot," Spear continues. "After the basic track was laid down, we would mess around with adding electronic sounds or playing around with cheap effect devices and guitar pedals on the vocals, drums...in fact, most sources were effected by something."

Spear recorded *Folk Hop 'N Roll* into Pro Tools, and used a variety of mics to record the instruments. On drums, he used a Bock Audio iFet on the kick, a Shure SM57 on both the top and the bottom snare, a Neumann U 67 as an overhead and a U 47 as a front mic; a DI unit on bass and keys; a small-diaphragm condenser and ribbon microphone combined (variances included a Neumann KM 84, an AKG 412, a Neumann U 87, a Coles 4038, and an RCA 77) on mandolin and banjo; and an AKG C60 or a Neumann U 47 on vocals. His vocal chain is the C60 or U 47 into a Helios console preamp feeding an 1176 Blue Stripe with a lot of compression. The majority of the vocal effects were created using a Roland VT-3 and a Caroline Guitar Kilobyte guitar pedal.

Spear mixed the album in two days. "Honestly, the record was really easy; we didn't overthink it or get weighed down technically," he says. "We didn't want it to lose how it felt during tracking. As an engineer, you always want more time to tweak or change or make it loud, but making the record raw like this gave it a strong aesthetic and kept it exciting."—Lori Kennedy

## BOULEVARDS GETS FUNKY WITH 'GROOVE!'



The authentic spirit of funk lives in Raleigh, N.C.'s, Jamil Rashad, aka Boulevard. The songwriter has defined ideas for delivering the essence of funk, first for his 2015 self-titled EP, and now for his full-length, *Groove!* Rashad trolled the Internet to find his musical soul-mates, Rollergirl, aka Adam Rich, and Taste Nasa, aka Leroy Clampitt.

"I want to make funk and disco in a pop format," says Rashad. "I try not to overcomplicate things when I'm writing. I send [Rich and Clampitt] records I've been studying, demos of a cappellas I do in my bathroom, and they make them into something."

For Clampitt, who produced and/or co-wrote more than half of *Groove!*, the songs were worked on in different settings. First in his home studio in Los Angeles' Echo Park neighborhood, where the frequencies of a local Mexican pirate radio station bled into his bass recording—he has a jazz degree in bass from the defunct New Zealand School of Music in Albany.

"Unless you bend your lead in the right way so it stops becoming an antenna, your speakers will play back this radio station," says Clampitt, who uses a 1983 student Fender Bullet bass into a Joemeek VC3Q. "I figured out a way of putting this cigarette lighter under my lead so it would bend into the compressor. It was really bad for the compressor, but it worked."

The second location for Clampitt is Bevan Galbraith's Bagnall Hill Studios in Te Pahu, New Zealand. Here, Clampitt had access to the custom-made Ekadek Dual Channel 535 Neever Mic DI Amp made from a classic Neve console belonging to a television studio. The third place he recorded was at Honua Music in Los Angeles, in Westwood, far away from Echo Park.

"Trying to get a bass tone as good as [Rich] got on 'Got To Go' was a constant reference for me," says Clampitt. "My favorite bass tone is on 'Up On Your Love.' Everything, apart from one clap sample, I played and recorded through the same tape machine. I had no idea what I was doing. I figured I'd mess with it in Pro Tools later. I don't boost anything; just take out the frequencies that piss me off. I use sidechain compression a lot, not creatively, just to get the bass out of the way of the kick. Working in a hybrid scenario naturally gets you a sound without messing with audio too much."—Lily Moayeri





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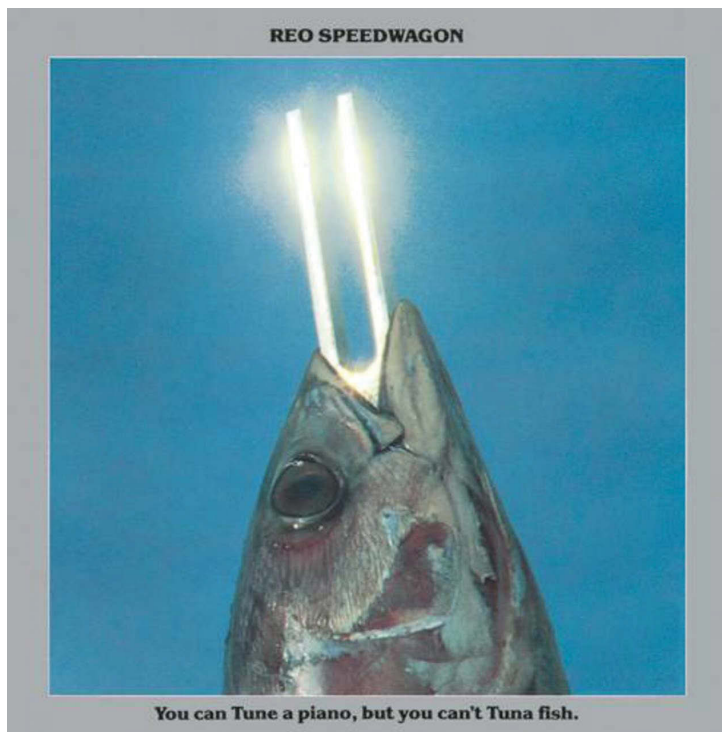
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# Classic Tracks

By Barbara Schultz



## **"ROLL WITH THE CHANGES"** REO Speedwagon

**I**n 1977, REO Speedwagon was on the verge. That Midwestern hair and guitar band—having survived several lineup changes since forming at the University of Illinois in the late 1960s—had finally settled on a permanent lead singer in Kevin Cronin. And between Cronin's clarion voice and unique phrasing, and the talents and appeal of his bandmates, REO was generating growing excitement, especially as a live act.

REO's successful concert album, *You Get What You Play For* (1977), created enough buzz, in fact, for Epic Records to give the bandmembers—vocalist/musician Cronin, guitarist Gary Richrath, drummer Alan Gratzner, bassist Bruce Hall (who joined after the live record), and keyboardist Neal Doughty—more creative control over their next studio release, *You Can Tune a Piano, but You Can't Tuna Fish*.

However, the label also wanted a trusted influence on the project, so, executive producer John Boylan brought the band out to L.A. and asked his frequent engineer Paul Grupp to record and mix the album, and to co-produce along with Cronin and Richrath.

"I'd run into the band several times before, and I liked their previous records," recalls Grupp, who had gone independent in 1974 after two years on staff at Capitol. "I liked their instrumentation and their energy

and their tunes, and I thought they hadn't always been presented to show their best in the past. I thought I could help do that."

Grupp took REO to Sound City Studio A, his favorite room at the time for instrument tracking. Each song on *You Can Tune a Piano...* started with the rhythm section—usually just bass and drums—but the album's opening track, the Kevin Cronin-penned "Roll With the Changes," includes Cronin playing a percussive but lush piano rhythm part, so piano was added to the basics. "We needed to have the drums, acoustic piano, and bass locked together," Grupp says.

The specific sound of Sound City's Steinway grand was also key: "We had a piano technician work on the action and voicing, and he actually hardened the hammers to give it more attack," Grupp says. "The piano also needed to have a very quick response because sometimes the keys were being hit so quickly that they were misfiring, so we had work done on that, as well."

"Also," he continues, "since the piano was being recorded in the main room with the drums, we had this big box: We took the lid off [the piano] and added a box that perfectly fit the shape of the piano but went up several feet; it was acoustically deadened, so no reflections came back off of it. But inside, I used what was pretty much my usual method: an AKG 414 on the midrange, Neumann U 87 on the bottom, and two AKG 452s on left and right sides to pick up the hammers and that nice growl on the bottom end that comes out when you get the mics just right with a well-balanced midrange."

Grupp took Hall's bass direct and simultaneously miked his amp with a U 87. "Since the 87 was back about a foot from the speaker, which causes a time delay of about a millisecond, I put a millisecond delay on the direct to get the direct signal and the amplifier signal in perfect time align and phase," Grupp explains.

Gratzner's kit was situated about two-thirds of the way toward the back of the room from the control room glass. "I can give that away now that the studio's closed," says Grupp. His go-to drum-miking scheme at the time included a Neumann U 47 FET on kick, a Shure SM57 on snare top, an AKG 414 on snare bottom, 57s on toms, and two AKG 414 overheads.

"The overheads would be directly over his ears," Grupp says. "It occurred to me that drummers spend their whole life tuning and balancing their drums to what they hear from where they are sitting. So, that is best captured by a stereo pair as close to their ears as you can get them. A lot of my drum sound comes from those two overheads."

"I also had two 452 room microphones to pick up the gorgeous room sound, heavily EQ'd through that Neve [8078] console," he adds.

The synchronization and interplay of the instruments on that basic track are obvious strengths of this song, right from the intro—and that's before even mentioning the vocals, or B-3 or guitar solos—but there are less conspicuous aspects of the arrangement that also up the ante.

"After the basic track was done, Kevin overdubbed an acoustic guitar rhythm





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part,” Grupp recalls. “No one even knows there’s an acoustic on the record, because I EQ’d it to sound more like a percussion instrument than a guitar, and then I blended it with the hammer sound of the piano and the hi-hat. The idea was to tie the percussive part and the melodic rhythm parts together.

“I would start by pushing the acoustic guitar fader up more and more, and as soon as you could hear there’s an acoustic guitar, I’d move the fader back the smallest amount. The intention was to turn it into a percussion instrument, but nothing scratchy like a shaker. I added a lot of attack and a lot of thinness and treble to make it very percussive, and probably some [UREI 1176] limiting to get that attack, as well.”

Grupp used an unusual mic on that acoustic guitar; he calls it his “magical microphone”—a modified B&K voicing mic that was a secret weapon on his sessions for decades.

“I started using that in the early ’70s,” he says. “I was doing a Marshall guitar session, trying to capture this great Marshall sound, and I was getting close but not all the way there. Finally, I said, ‘Okay, this microphone doesn’t lie,’ and I tried the voicing microphone. It was noisy—it was designed for measurements, not recording—but I thought, ‘This sounds accurate.’ I took its power supply and preamp and did some modifications to make it more suitable for recording. They quit making that mic three or four decades ago, but I still have a couple of them.”

The next part to be overdubbed: Cronin laid down his vocals in Studio B at Record Plant, which Grupp preferred for vocal tracking. Again, Grupp used his magical mic.

“The lead vocals on the entire album were done in one day, and they were all doubled. Kevin would sing it, I’d wind the tape back, and he would sing it again so perfectly that it sounded like one voice. It was uncanny the way he could repeat all of his inflections and his timing, because he sings some real syncopated parts, and if those are off just the smallest amount, you’d hear it. ‘Roll With the Changes’ was two passes without any punch-ins.”

Further overdubs back at Sound City included Neal Doughty’s uplifting B-3 parts, which were carefully arranged to interact with the gospel-style backing vocals on the song for maximum impact. “We had the harmony parts worked out so that, on the last repetition [of ‘Keep on rollin’, oooh’], the singers hit a high C, which is the highest note on the B-3 keyboard; that way, we could have the B-3 solo start out with a gliss up and hold that high C. Then [in the mix], the faders would cross from one to the other so the harmonies would [lead into] the B-3 solo.

“We also realized, it would allow something magical to happen if Neal would hold one note, and play a solo around that,” he adds. “That note would drop in volume as the other notes hit, and then come back in volume as the other notes released, so it would intermodulate with them.”

To capture the B-3, Grupp placed two 414s on the Leslie’s top rotor and an 87 on the bottom. “But when you mike the bottom rotor you can get too much whoop whoop, so I go up to the port to get more bass sound with plenty of rotor sound still coming through,” Grupp says.

When fans think of classic REO Speedwagon, they may fondly remember their live shows, power pop like “Roll With the Changes” or ballads

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like “Take It on the Run,” (1981), but anyone who listened to this band back in the day would likely say that their defining sounds were Cronin’s voice, and Gary Richrath’s guitar. Grupp understood the pivotal importance of Richrath’s solos, and he and the guitarist spent Christmas Day nailing down those parts.

“Everyone else was with their families celebrating, but Gary and I were in the studio working out guitar parts,” Grupp says. “And there were a lot of parts on this song: the answer licks and other parts throughout the verses, plus the intro solo, the middle solo, and then the end solo that was really specifically worked out. I had a lot of ideas about the structure and

interplay of the two solo guitar parts.”

Richrath’s Marshall amp and cabinets were out in the studio, miked up with the magical mic and a 414 back a few feet, and at the other end of a long cord, the guitarist sat in the control room with Grupp. “If we needed to get sustain—since he couldn’t stand in front of his amplifier—I had a little 3-inch Auratone speaker and I would put only his guitar in that speaker, and he would touch the very top of his guitar, where the tuning pegs were, to that speaker; it would vibrate his guitar with the note he was playing and it would sustain forever.”

Richrath and Cronin were both on hand to mix with Grupp on that famed Neve at Sound City. Grupp says that everyone felt the sounds were better and truer through the monitor panel, so they ended up mixing like that, with bandmembers often helping on the faders. Grupp says that “Roll With the Changes” was his favorite song on the album from the start, and he was not surprised that it rose to 58, while the other hit single on the album, “Time for Me to Fly,” went to 56 on *Billboard*’s 200 chart. *You Can Tune a Piano, but You Can’t Tuna Fish* went double-Platinum, and marked the transition of a regional band from rural Illinois to a national success.

Grupp is now semi-retired and still in L.A., and REO Speedwagon continues to tour with guitarist Dave Amato. Richrath left the band in 1989, and he passed away in September 2015 at the age of 65. The song “Roll With the Changes” continues to be an REO fan favorite and a Midwestern favorite; it fit well as part of the 28-song playlist at President Obama’s 2012 election night celebration in Chicago. ■

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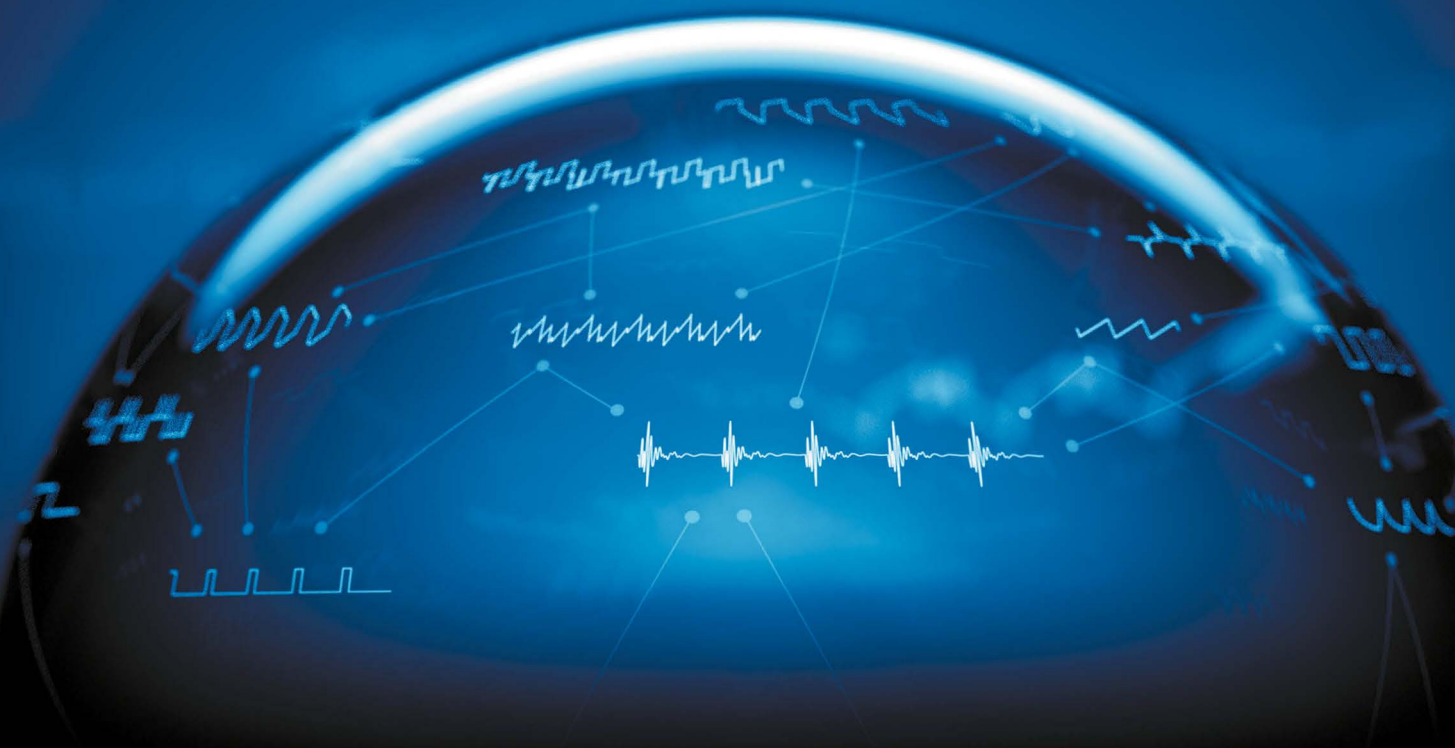


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# Live



DWEEZIL ZAPPA

By Steve Harvey 23

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ALL ACCESS:

BLACK SABBATH

By Steve Jennings 30

Dweezil Zappa, with band, rehearsing for the Via Zammata tour.

Photo: Steve Harvey



## DWEEZIL ZAPPA REHEARSALS

Shaking Out the New Waves Touchscreen Console By Steve Harvey

**A**n old road buddy in England recently posted a photo on Facebook of a massive analog mixing console sitting at front-of-house surrounded by four or five racks of outboard equipment. “Proper setup, that,” he wrote. Perhaps so, but touring productions that can afford to carry consoles that occupy valuable seating space and require six or eight pairs of hands to tip into place have become something of a rarity in the economic reality of the past 15 years.

“We started in 2006 with two semis and three tour buses, with 32 people on the road,” says Glynn Wood, who signed on as both front-of-house engineer and, initially, production manager at the beginning of the Zappa Plays Zappa project, on which Dweezil Zappa re-creates the music of his father, Frank, with a band of top-notch musicians. “Then the 2008 recession devastated the music industry. Our audiences just disappeared—and it wasn’t just us.”

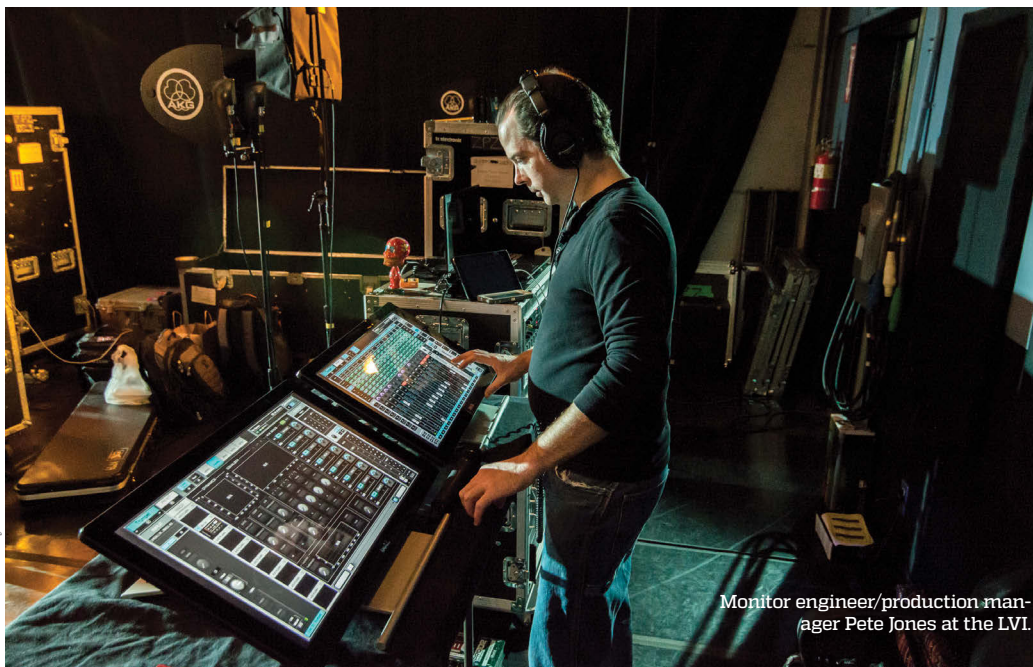
“That led to the situation today where it’s

the two of us,” interjects monitor engineer and production manager Pete Jones, during rehearsals for the upcoming Via Zammata tour, which begins May 3, promoting Dweezil’s first solo album project in a decade. Jones, who has toured with the Radiators, Big Elf and Tal Wilkenfeld, frequently mixes at Tipitina’s in New Orleans, where he spends a lot of time. He initially joined the Zappa crew in 2007 as drum tech for Joe Travers and Billy Hulting, just in time for Terry Bozzio’s final show with the band, before taking





FOH engineer Glynn Wood at the new Waves eMotion LVI mixing system, in rehearsals for Dweezil Zappa's Via Zappa



Monitor engineer/production manager Pete Jones at the LVI.

over production/tour management duties in 2010. "Dweezil did his best to keep the majority of the crew and band together in 2008 and 2009, despite the economy failing," says Jones. "At that time we both loaded and unloaded the truck, I tech'd every instrument onstage, I tour and production managed, and did monitors. And sang a song in skintight spandex and a wig, as David Lee Sloth," he laughs.

In late 2015 the two engineers were approached by Waves to road test a brand new product, the eMotion LVI, an innovative mixing system that uses a pair of large multi-touch screens in place of a traditional console surface.

The system is extremely compact, Wood reports. "Now, we all fit in one bus towing a trailer. And with the LVI system we have lots of spare room in the trailer."

Engineers might balk at the thought of mixing on a glass panel, but Wood, in his early 60s and with four decades of experience on the road with artists including Sinéad O'Connor, Suzanne Vega, Big Audio Dynamite and Vanessa Mae, is proof that you can teach an old dog new tricks. "As many fingers as I have, I can do that many things; I could raise 10 faders all at once," he says. "Anything I touch reacts immediately and is solid. One thing you need to be careful of is that on a touchscreen monitor you can inadvertently touch something else and alter it. But I've trained my fingers now. It took me two or three days; it was not difficult."

Waves brought in engineer Stephen Bailey to help train the Zappa crew. "He is a master of this system," says Wood. "We were using the system three months before the release version, and I'm very proud and honored to have been a part of the beta process. Waves immediately worked on anything that has given us any problems. But the only real problems have been GUI interface things; the audio has remained perfectly solid."

Perhaps more importantly for the minimal road crew (there is also a backline tech), the system has significantly reduced load-in and load-out times, and effort. "It's so fast to put together," says Wood. "The only things that I plug in from the outside world are the mains, my two flat screens, which have HDMI and USB 3 connections—so three connections per screen—and my Ethercon snake. It literally takes me four minutes to set it up."

The only other equipment that Wood has at FOH is a 16U rack: "In the rack are an IOC and an IOX, which are my local DiGiGrid I/Os. Below that is an output

patch, two Waves SoundGrid Extreme Servers, one of which is redundant, and the computer."

But how does it sound? "It's above and beyond anything that I've worked on in the past," Wood reports. "There's nothing to touch it sonically. The DiGiGrid I/Os are fantastic; the headroom is fabulous. It's the best sonic experience you could have."

The FOH and monitor systems are both loaded with Waves Mercury plug-in bundles, but Wood comments, "If I didn't have the entire Waves

*Continued on p. 43*





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# GRACE POTTER

## Potter Rocks D.C.'s 9:30 Club During First Solo Tour

By Mark R. Smith



Grace Potter onstage at The Showbox in Seattle.

Photo: Todd Berkowitz

**T**his past year has proved a period of transition for Grace Potter. The singer-songwriter has been touring behind her first solo album, *Midnight*, and she has a new band. And, as it turns out, Potter's sound team just made a transition as well, to the DiGiCo SD10.

Mix caught the show at Washington, D.C.'s fabled 9:30 Club, where Potter and company will return on June 22-23.

### STEPPIN' UP

Sam Leonard, Potter's front-of-house engineer, said that he "enjoyed working on the previous board," but the early-tour switch to the DiGiCo came down to channel count. "[The old] board could only handle 48 channels," Leonard said, "and there came a point in the tour that we needed more, to accommodate a choir, for instance. So, we went up to 64."

That change also happened because there's only so much room for equipment in the band's two trailers. "We haven't made the jump to a truck yet," Leonard said, "so we try to provide maximum impact with the space

and the budget. It was little difficult to make the jump but the DiGiCo board is laid out logically, with the touchscreen and all of its functions, and user master controls to the right of the screen. We had a rep give us a tutorial."

In the end, it's about the sound. And Leonard said the SD10 "is far superior, even without plug-ins.

"For instance, it has 16 assignable dynamic EQs, and that's allowed me, for the first time, to shape Grace's voice with attack, release and ratio parameters applied to each band of the four parametric EQs," he explains. "She uses a Telefunken M80, which is kind of bright, and the dynamic EQ really helps smooth it. The onboard effects of the desk are much better, too, with lifelike reverbs and fun delays. Experimenting with the 10-tap delay has inspired a whole new creative element that is now featured in the show."

A twist to the show was that it was recorded for Live at 9:30, so Leonard gave the PBS crew the soundboard feed. They can "work off the edit," he said. "We used some ambient and audience mics that can be mixed in."



# Twist and Shout.

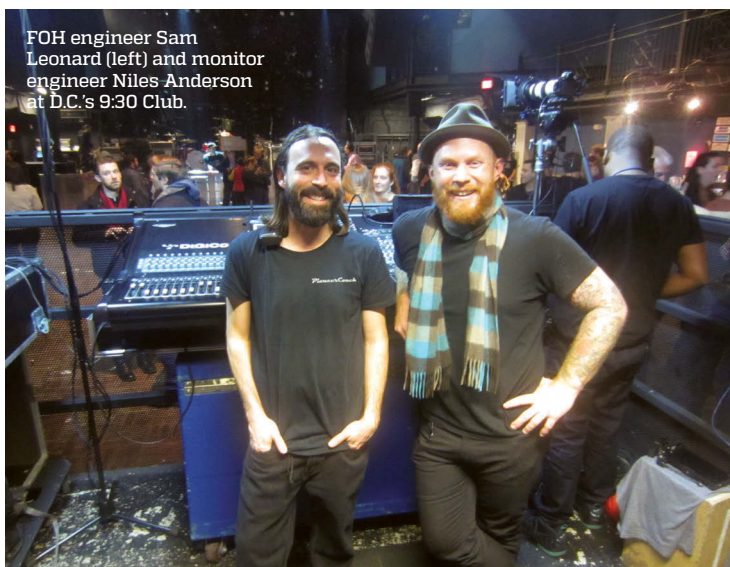
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Photo: Mark R. Smith



FOH engineer Sam Leonard (left) and monitor engineer Niles Anderson at D.C.'s 9:30 Club.

Photo: Courtesy of 9:30 Club



Shawn "Gus" Vitale, lead engineer at 9:30 Club.

## MONITORS 'DU JOUR'

Also loving the increased output is Niles Anderson, Potter's production manager/monitor engineer. "Being able to mix the show at 96k is a game-changer," Anderson says. "After mixing on consoles at 48k for the past couple of years, your ears get trained to that; but after you start using the 96k, you appreciate the nuances.

When the tour does fly dates and can't get the SD10 (from SES, of Winston-Salem, N.C.), they typically pick up Avid Profiles for front and back of house. So far, however, the tour isn't traveling with a particular monitor package. "Its monitor and public address du jour, depending on the venue," Anderson says.

At the 9:30 Club, overhead mics were Shure KSM32s, with some SM81s used on hi-hats and percussion overhead. Potter's crew uses a smorgasbord of mics, too, but has upped the ante in recent months with Telefunken M80s for all vocals (a wireless version for Potter). Shure products for the speaker cabinets and the drums—the old standard Beta 91 for the kick-in and Beta 52 kick-out—are also in the mix.

"We have 60 input mics onstage," Anderson explains, "and the whole band is using in-ear monitors," from Ultimate Ears and JH Audio. "I don't have the entire band"—which Potter has dubbed The Magical Midnight Road Show—"on one model, because it's only been together since last June," he says.

## AT THE CLUB

As for the venue, the 1,200-capacity 9:30 Club (which was once Duke Ellington's, later WUST-AM's studio) recently won Pollstar's Nightclub of the Year award for the 11th time.

Interestingly, one of the most successful clubs in the country had a plaster ceiling during the WUST days. But when co-owners Seth Hurwitz and Rich Heineke bought the building in the mid-'90s, they wanted the best sound possible.

"The Walters-Stoyrk Design Group came in and helped with the elements," says Shawn "Gus" Vitale, the club's longtime lead sound engineer. "[WSDG] suggested the asymmetrical wall and ceiling panels, and built a wall in front of the [upstairs] VIP section." The stage is movable, which

was Hurwitz's idea.

The most recent addition, about a year ago, was a DiGiCo SD8 desk with the Waves Server package. A few years earlier, the club installed d&b audiotechnik monitors, and a few years before that a d&b J Series P.A.

"And that's always the question," Vitale says. "Will the equipment still be viable in 10 years? We've spent money on advancements in sound and light technology since that's part of doing business. It's an ongoing process."

For Potter and company, doing business at the 9:30 Club is also an ongoing process: She's gigged there 14 times (the first 13 with the Nocturnals). "[Her crew is] stable and includes some of the best people in the industry to work with. That says something about the artist," says Vitale, "and I love getting geeked out with Sam, Niles and their crew." ■

## Coming Soon to PBS

A concept long discussed, but never attempted, **Live at 9:30** will be the first TV show to be produced from the venue; it took a creative approach from an independent producer and public television to finally make it happen.

The plan is to "present four to five bands per episode, with each performing two or three songs," says PBS Executive Producer Michael Holstein. "Grace was so good that it's going to be hard to cut it down to three; some will make TV, a couple online only and others will be dropped. We cater to the bands and Grace was really cool to work with."

Holstein said that up to 15 cameras will be used per show, "including five handheld, five mounted, five GoPros and PBS's signature cable-cam. We'll connect to the soundboard with a Zoom H6N, and pick up ambient sounds of the club with a backup analog Zoom R16. Also on hand were Rode NTG3 shotgun mics, with Sennheiser lavaliers with one boom mic.





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## BLACK SABBATH



Mix caught up with England's heavy metal icons Black Sabbath for "THE END" Tour at the Forum in Los Angeles in February, marking the band's final tour after nearly four decades. It started with dates in the States, then goes on to Australia and Europe, and comes back to the U.S. for the band's final show in September. It is the first major tour to go out with Avid's new S6L console, which is being used at FOH and monitors.



"At FOH I have 64 inputs and 16 outputs of analog/AES," says **FOH Engineer Greg Price**, right, with **Clair Global** system tech **Simon Bauer**, at the new Avid Venue S6L, with its 300-plus processing channels, Pro Tools integration, and an array of network and I/O offerings. "I'm using Pro Tools systems from Diablo Digital, and we couldn't tour without these systems embedded." [Note: Price and live sound engineer Brad Madix established Diablo Digital Inc. in 2013, building high-quality easy to implement touring multi-track recorders.]

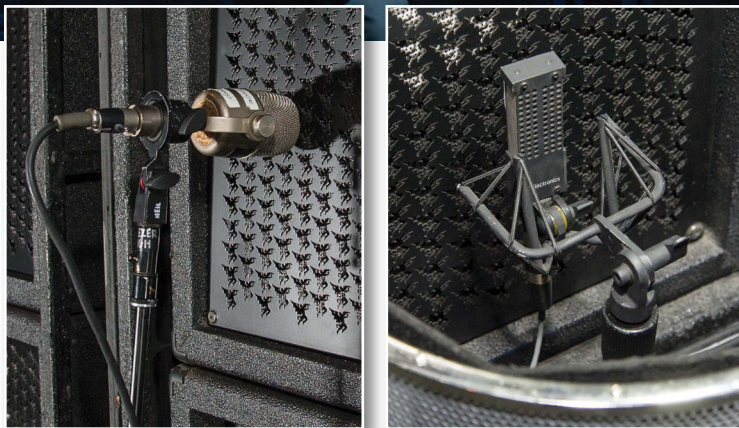
"I would like to personally thank the folks at Avid/Venue—Sheldon Radford, Robert Scovill, and Chant Peck—for all the insight, support and knowledge. I think if you have been using the Venue Profile, D-Show, you will seamlessly migrate to S6L. Incredible audio quality, ease of use; it's a very sophisticated user experience and a new direction for your mixes with the console itself and the operating software."



The Clair P.A. system comprises 56x Cohesion 12 Line Array elements (16x main hang, 12x side hang, per side), 18x Cohesion 218 Subs (6x flown, 3x stacked, per side), 8x Cohesion 8 Micro Array (front fills), all powered by 42 Lab Gruppen 20K PLM+ amplifiers.

"We try to make this work fun," FOH engineer Price says. "We have a great bunch of professional sound crew members from Clair with us on tour. This makes for a tremendous working environment. That is what a great sound company brings to the tour."





Geezer Butler's bass amps are miked with an EV/ND 38 neodymium (left), which covers the high-frequency/distortion of the bass system, and an sE Electronics VR1 ribbon mic (right) with the ISO cover, which handles the low frequency of the system, according to FOH engineer Price.



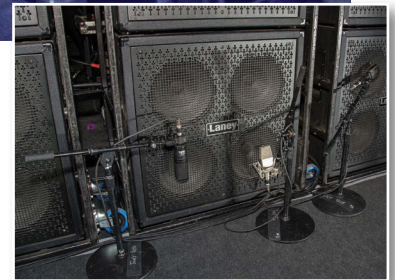
#### Monitor engineer Myles Hale

is also mixing on the new Avid S6L console, running 64 inputs and 29 outputs, with three to spare in case of special guests or add-on mixes. He is not using any plug-ins as of yet.

"My outboard rack gear consists of a Lab Gruppen LM44 inserted across a triple-assigned Ozzy vocal input

for the fine tuning of the vocal, whether it's for side fills, wedges or IEMs. Ozzy uses a standard Shure Beta 58a that handles the high SPL and wetness of this gig.

"For wedges, we have Clair CM22s everywhere onstage except for a couple of locations due to tight spaces where we have Clair 12AMs or their SRMs. For sidefills we have six Clair Cohesion 8s flown per side. Currently we only have one band member on IEMs, Mr. Adam Wakeman, and four other tech mixes all using JH Audio and Shure PSM 1000s. This is an amazing tour filled with great people in all positions. It's one of those rare ones that you hope will never end!"



**Guitarist Tony Iommi** has his amps set up with a three-mic combo: an Audio-Technica AT4050 multi-pattern condenser, an SE Electronics T2 multi-pattern titanium large-diaphragm condenser mic, and a Sennheiser 409.

"I like to mix it up with different microphones on a guitar amp," Price says. "This gives me a combination of sound and texture for the guitar."



"For drummer Tommy Clufetos we have two Shure Beta 91a mics and two Sennheiser 904s on kicks; on snare top a Shure SM 58, snare bottom an A-T 3000; hi-hat a KM 184; rack toms are A-T 3000, bottom concert toms are SM57s, top concert toms are Beta 98AMPs; on ride a Sennheiser 914e; overheads left and right are AKG 414s, overhead center an A-T 4050, and on cowbell an SM57."



# On the Cover

By Tom Kenny

## DOLBY'S NEW SAN FRANCISCO HQ

A Dynamic System Design to Serve Art and Science

The Cinema Group's Content Creation Lab, one level below ground, before the fabric and equipment were installed, covering the Meyer Sound Atmos system: LCR Acheron 80 in front, with 6 HMS5 per side, four HMS5 along the rear and 12 HMS5 in the ceiling; 2 Meyer X800C subs in front and 2 X800C in the rear. It now includes an Avid System 5 Fusion with Dolby Atmos panner. An NC10 room.

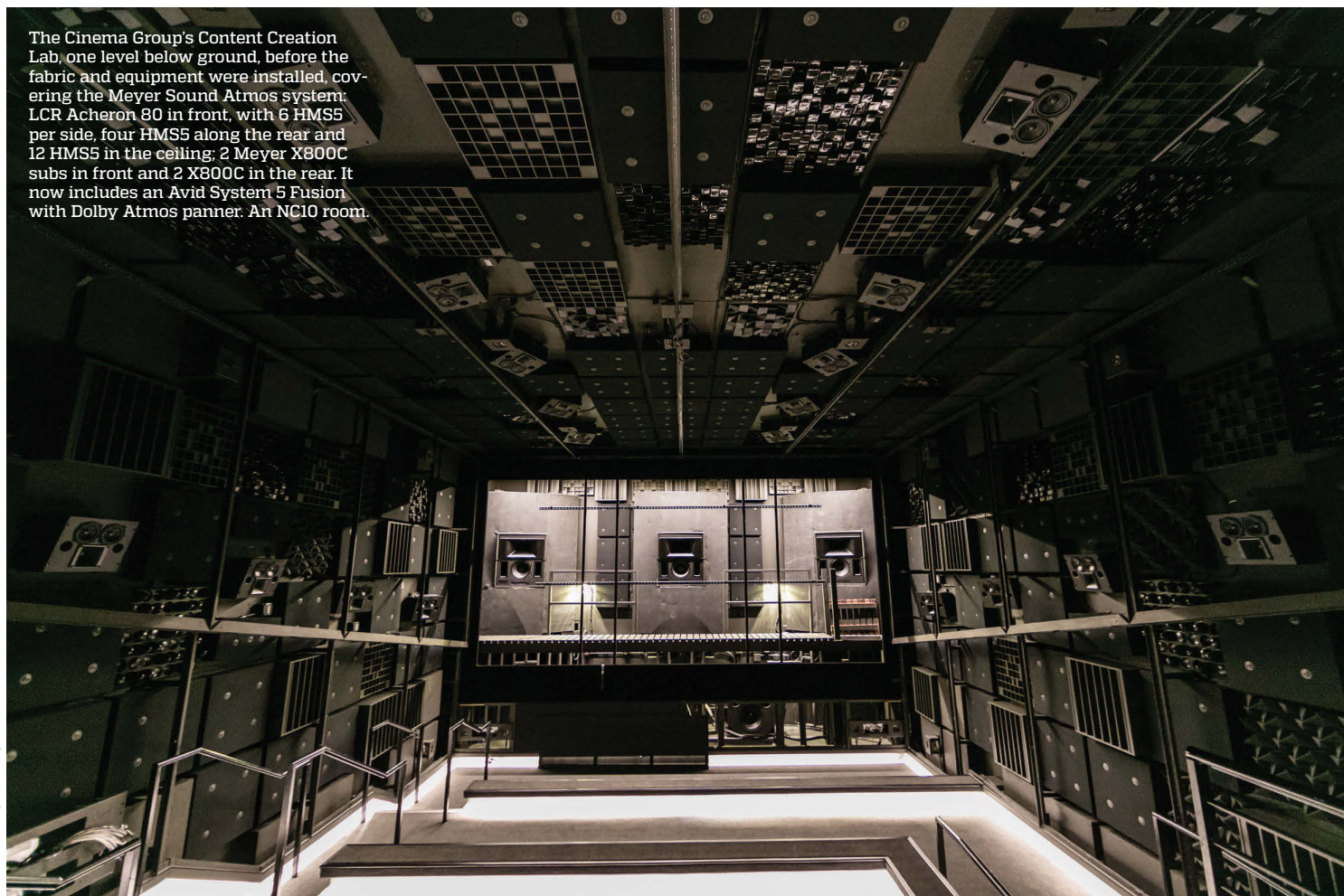


Photo Courtesy of Dolby Laboratories

**I**n a semi-dark room on the tenth floor of Dolby's stunning new headquarters in San Francisco, a young neuroscientist sits on a couch, head and body as still as a mannequin, staring at a pair of High Dynamic Range monitors displaying a stream of computer-generated images—explosions, flames, action and battles. He's wearing what looks like a swim cap, with multiple sensors and wires attached; more dot his fingers and run up his arms. Specialty glasses, not really goggles, cover his eyes. And while an ATC 9.1.4 Atmos

system is available in the NC 10 room, for this experiment he's listening through headphones.

To his left is a thermal imaging camera, with real-time display outlining his image in yellows, reds and blues, and all their gradations. To his right are two monitors showing graphs and waveforms and numbers, also tracking data in real time. Four more neuroscientists move around the room, checking other monitors.

This is the Bio-Physical Lab, and on this day they're collecting data on physiological, neurological and, ultimately, multi-sensory response

to the impact of changes in video resolution and luminance. For instance, they've already found that flames displayed in HDR format will trigger the brain to produce heat in the cheeks. But not in SDR. Tomorrow the team, led by Head Scientist Poppy Crum, Ph.D., might be working on high-resolution audio for mobile or spatialization for multi-talker situations in VR.

It's all about the study of human perception. And it always has been.

Since Ray Dolby founded the company in 1965 with the introduction of Type A noise



Matt Lavine, CEO Bug ID, in one of the Advanced Technology Group's ITU NC 10 Critical Listening rooms, with a Revel 9.1.4 Atmos speaker system (9x Salon 2 on floor; 4x Gem 2 in ceiling; 2x Paradigm Subs. Wired for up to 32 channels of passive audio with custom Nion mixer/monitor controller.

Photo: Steve Jennings

Dr. Poppy Crum, Head Scientist, in the Bio-Physical Lab, with 9.1.4 Atmos speaker system (ATC SCM11 speakers and Velodyne Optimum 12 subs). This room works in conjunction with the Sensory Immersion Lab, which has a Meyer Sound Constellation system, along with an internal speaker grid that includes up to 40 custom Peponis Sound monitors.

Photo: Steve Jennings

reduction, on through AC-3 encoding and its broadcast and cinema variants, up to Atmos playback for the home, the mission, at its root, has always been about achieving a closer approximation of reality. In the beginning, it was all Audio. Then image was added with Dolby Vision. Now it's the infancy of Virtual and Augmented Reality. If there's a piece of professional content out there, on physical media or streaming, past, present or future, it likely has some type of Dolby wrapper attached.

"Dolby is a company that thinks about sen-

sory perception," says Crum, who joined the company five years ago. "Not just audio but the impact of what we see and what we hear and what we experience in order to build technologies that are intelligent in that way. They understand the impact of sensory perception on how you can derive intelligent algorithms and ultimately more successful immersive, impactful experiences in technologies that reach people. Across the gamut. The expansion we've had into imaging, I think, is one of the defining features moving forward."

Today Dolby's influence reaches across music, cinema, broadcast, gaming, streaming, live events and all sorts of specialty markets—worldwide, with a multiplicity of ever-changing distribution formats, on both the professional creation and consumer playback fronts.

The spread and growth was at times rapid, including an IPO in 2005 and the leasing of multiple locations around San Francisco once the company outgrew its Potrero Street home. Scientists and creators and business units were all spread out. So, about five years ago the company found an appropriate property, and in September 2015, Dolby moved into a 16-story, 300,000-square-foot, 100-lab architectural and technological masterpiece of a building in central San Francisco, referred to by employees simply by its address: 1275 Market.

## DYNAMIC SYSTEMS

The goal for the building from the first inter-group planning meetings was to create an environment—aesthetically and technologically—that would stimulate collaboration and cohesion between business groups, and between content creators and scientists. There's a reason for the tagline Where Science Meets Art. It's evident in the clean, open architecture, and it's hidden behind the walls in the core connectivity between labs and listening rooms.

"Dolby is always looking to new technologies, for systems that are dynamic," says Matt Lavine, founder and CEO of Bug ID, design-build system integrator for the project. "They want flexibility. They want an environment for their engineers to be creative and have access to the latest and greatest technologies, to let them create the new latest and greatest technologies. So we created systems that all the end users could use across all the floors. Cinema has different needs than Broadcast, but the core infrastructure and technology behind it can be similar. Engineers can go from one lab to another, or to another group, and understand how the building functions."

If Dolby were just a research facility, that's one, albeit large, function. But Dolby engineers' needs run from standards-critical listening labs to "typical" small, medium and large living rooms; from luminance measurement to Atmos plug-in development.

"There are certain baselines we knew we would have to have for the labs," Crum says. "We had to be able to support specifications





The Marketing Group's Studio C, with Avid S6 and API 1608 consoles, 7.1 ATC SCM50 PSL monitor system and 12 on-wall Triad subs, three per wall. Also, Panasonic PTZ cameras and a Tricaster video switcher for recording or streaming. Inset: John Loose with Erik Foreman and Kevin Perry.

for noise floor levels and room specifications for different international standards that exist. Any developer working in these spaces has to do this. At the same time we need to have rooms to offer flexibility, malleability, and allow for simulation of the types of listening environments that people interacting with our technologies are going to be in, which is very different than a specification in a development lab."

"We needed technology for where we are right now, and also ensure

that we're set up for the future," Lavine adds. "We still have to deal with SDI video, AES audio and analog audio, while technology is moving into packetizing the bits and sending to IT. Making sure we had pipe to interconnect floors and send data throughout the building was key.

"Then we developed the system to send MADI, HDMI and SDI to all the labs, where we created multiple machine rooms, each as our hub for a particular floor or a particular room," he continues. "Our goal was to

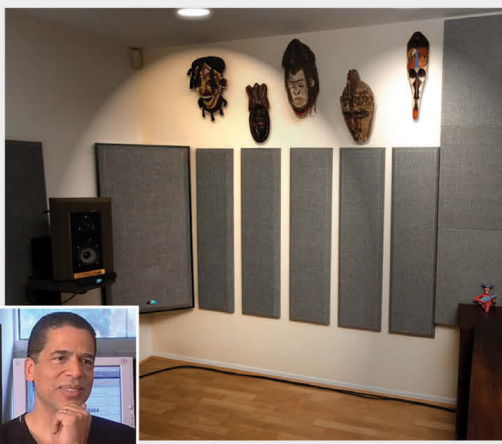
## Primacoustic... better design, better



"The ease of install really allowed us to experiment with placement and with the quality of the treatments, we achieved the sonic balance we were looking for!"

~ **Tommy Lee**

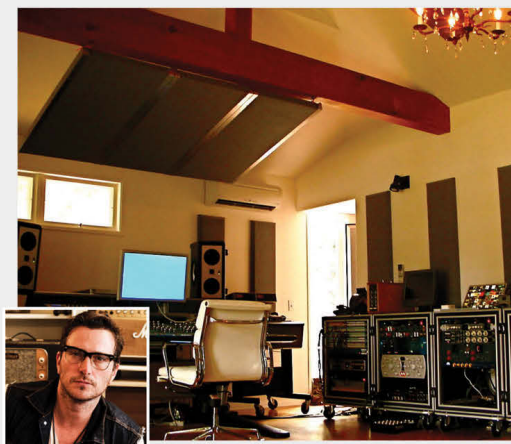
Founding member - Mötley Crüe.



"Being able to fine-tune a room on site makes all the difference. The Impaler mounting system make the panels easy to install and let you make adjustments without trashing the surface. It works!"

~ **David Rideau**

Engineer/producer - Janet Jackson, Sting, TLC, George Duke and Jennifer Lopez.



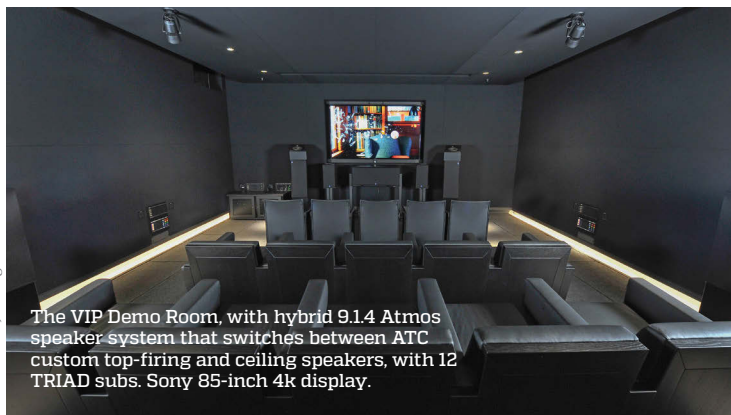
"The Primacoustic is up and kicking butt at my new studio in Santa Monica. I love the way the control and tracking rooms sound now... and so does everyone that records here!"

~ **Butch Walker**

Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas.

*"I love the way the control and tracking rooms sound now... and so does everyone that records here!" ~ Butch Walker*





The VIP Demo Room, with hybrid 9.1.4 Atmos speaker system that switches between ATC custom top-firing and ceiling speakers, with 12 TRIAD subs. Sony 85-inch 4k display.

get as much gear out of the labs as possible. For listening rooms built to an NC10 spec, you can't have a computer in there. So we remoted everything. There is a large KVM system by IHSE that connects all the computers in the machine rooms."

Direct Out Technologies handles all MADI routing, with Andiamo AES-MADI conversion. DSP and EQ are handled through MediaMatrix Nion network routing systems, local to each floor and feeding amplifiers in the critical spaces. Bug ID developed a custom hardware/touchscreen monitor controller to allow users to solo, mute, mixdown 32 channels of audio and grab a volume knob for mixes beyond 7.1. There are dozens and dozens of Lynx Aurora 8-channel converters across all machine rooms; word clock and sync is by Brainstorm.

Still, Dolby is largely manufacturer-agnostic. Lavine says, pointing out

that while ATC was the primary speaker vendor, and developed a custom top-firing version for testing and development of Atmos for the home, there are also Dynaudio, Focal, Yamaha, Revel, Paradigm and many others throughout the building, including a Meyer Sound Constellation system for the Sensory Immersion Lab, and 53 Meyer MM4s and 32 subs for Atmos playback in the lobby ceiling, to support the 62-foot, 7 million LED, corner-wrapped video wall.

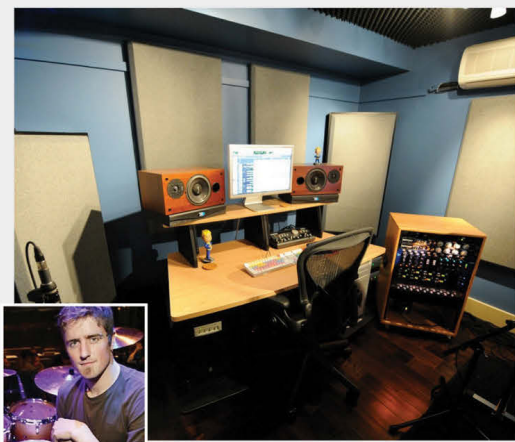
## THE MARKETS

While the architecture and infrastructure are designed to inspire creativity and collaboration, each of the main market segments has a primary floor and dedicated lab spaces. Evan Reiley of Shen Milsom & Wilke, LLC was the acoustician for the whole building, bringing a consistency to the listening experience from top to bottom.

The Advanced Technology Group is on floors 9 and 10, for example, working in R&D out of a number of sound labs, the most premium ones being a pair of NC10 listening labs, the Bio Physical Lab, and a first-floor Sensory Immersion Room, outfitted with a Meyer Constellation system to change the acoustic environment electro-acoustically, along with an interior cage to play back Atmos material from 40 Pelonis Sound custom monitors based on the signature Model 42s but with extended low end and greater overall output, in the same compact form. It's the tallest of all the labs. It was said to measure NC2.

Home, Mobile, Tablet Gaming, Virtual Reality and associated consum-

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"I put up Primacoustic Broadway Panels on the walls and MaxTraps in the corners. The difference was amazing... the room went from unruly to tight and controlled!"

~ **Daniel Adair** Drummer - Nickelback.

**"Not only does my room sound amazing, it's also really beautiful!!!"**

~ **John Rzeznek**

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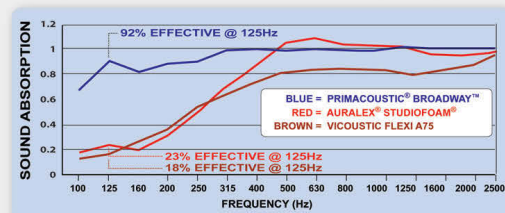
"We've got a mixture of bass traps, diffusion and clouds and the result was phenomenal. It ended up costing less than 25% of the custom solution and it turned out very cool."

~ **Keb' Mo'** - Grammy winner, roots-legend.

*Primacoustic Broadway™  
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panels perform well where the others  
fail, in the critical low frequencies.*



"Not only does my room sound amazing, it's also really beautiful!!!" ~ **John Rzeznek** - Goo Goo Dolls.



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Photo: Steve Jennings



From left, Bug ID AV System Engineer Ross Yeo, Bug ID CEO Matt Lavine and Bug ID Project Manager Quincy Kowalik in the building's art-centric lobby, in front of a corner-wrapped video wall made by Silicon Core: 1.9mm LED panels; 62 feet long by 4.5 feet tall; 9,920 pixels wide by 720 pixels high; and 2,000 NITS max brightness. The sound system consists of 52 Meyer MM4 XP speakers and 35 Meyer UMS-1XP subwoofers, all in the ceiling.

Photo Courtesy of Dolby Laboratories



One of two identical rooms in the Cinema Group for mixing/authoring. Each room has a Meyer Sound Acheron/HMS5-based Atmos system, with one front and one rear X400C sub. This room has an Avid S6 and 4K LED monitor.

er-centric markets are under the umbrella E-Media, on Floor 8, working out of living room-style labs, with top-firing speakers and headsets. Broadcast is on Floor 7, and with all of its worldwide formats and sync issues, proved one of the more challenging machine rooms.

Cinema is on Floor 5, with two Atmos mixing/authoring rooms, 10 bays for digital projection and two additional Content Creation Labs below ground level—full-blown dub stages with Avid System 5 consoles and Meyer Acheron 80 LCR monitoring, with HMS5s for surround.

And finally, the Marketing Group is on Floor 3, where 20-year Dolby veteran John Loose oversees the Recording Studio, VIP Demo Room, and production and post for Dolby-generated materials—from theatrical trailers to product launches to the Atmos mixes for rotating digital arts exhibits across 62 feet and around a corner in the lobby. He also brings string quartets from the SF Conservatory in to record.

The studio includes a generous tracking room, easily big enough for a five-piece rock band, with six mounted tilt-pan-zoom cameras that feed a Tricaster for live streaming. A huge iso booth, to NC6 spec, can handle drums or Foley or ensemble voices. A smaller vocal booth is also dead quiet.

The control room is very large, featuring an Avid S6 console with an API 1608 acting as a front end, a combination Loose fell for when

working with the Killers in Las Vegas on a surround project. Everything gets converted and goes into the Peavey Nion for EQ and levels, then the A-to-D conversion via Lynx Aurora and out to the amps feeding the ATC SCM50 7.1.4 monitor system with 12 Triad on-wall subs, behind the fabric, four per wall. Loose's right hand man, Kevin Perry, was instrumental in working with Lavine and team on the integration.

Loose also manages the VIP Demo Room, also fed by the Nion processor, allowing for playback of variable speaker configurations, including the ability to switch from a 9.1.4 top-firing ATC Atmos system on the floor to a 9.1.4 ceiling-mounted ATC system at the touch of an iPad, with Crestron back-end.

## THE FUTURE

Dolby is so many things today. But more than anything, it's a company that releases and promotes Immersive Sound, while researching Total Immersion. Science begets Technology begets Art. But it all starts with Science.

Poppy Crum is a most interesting neuroscientist. She attended McGill University to study music (she plays violin) and recording, and at age 17 traveled to San Francisco for her first AES Convention. She was already enamored of Dolby and the manner in which they approached research in human perception. "They were unique as a company, even back then, in thinking

The advertisement features a central image of the Goliath audio interface, which is a black, rectangular device with a digital display showing a waveform. To the left of the Goliath is the Orion 32 audio interface, and to the right is the Orion Studio audio interface. Both are also black and rectangular. The background is a dark blue and green gradient with stylized lightning bolts. The text "GOLIATH" is prominently displayed in the center, with the "THUNDERBOLT" logo below it. The "ORION 32" and "ORION Studio" logos are also visible on the left and right respectively. At the bottom, the text "THE BEST AUDIO INTERFACES - FIND YOURS!" is written in large, bold letters, with "FIND YOURS!" in red. The Antelope Audio logo, a red silhouette of a running antelope, is positioned to the left of the website address "AntelopeAudio.com".

# THE BEST AUDIO INTERFACES - FIND YOURS!

 [AntelopeAudio.com](https://AntelopeAudio.com)



about the human system and perceptual response to drive their algorithm development,” she says.

She later got a master’s degree in experimental psychology at McGill, followed by a Ph.D. from UC Berkeley in neuroscience and psychology. From there she joined the Research Faculty at Johns Hopkins School of Medicine in the Department of Biomedical Engineering. Five years ago she was recruited by Dolby. She has since assembled a team that includes Grant Mulliken, Ph.D. (background in chip design, brain-computer interfaces, and neural representations of visual attention); Dan Darcy, Ph.D. (neural correlates of vision, olfaction, and neurogenesis); Alex Brandmeyer, Ph.D. (auditory neuroscience, music, brain-computer-interfaces, auditory perception); and Evan Gitterman, BSc (cognitive science, neuroscience, and music); among many others in support.

“Whether it’s behavioral or physiological, you have to know how a human system interacts with the world and the content around them—the audio or video or multisensory,” she says. “That understanding is the experiential capture that we’re targeting, and it definitely informs our development process. You do want to know what people think, what people like. Those are important data points. But what you want to know is what they perceive, and what they experience; what their system experiences.

“I have huge respect for sound designers,” she adds. “They may not speak in the same vocabulary I speak in, but they have an expert understanding of human perception. The ability to take sounds from many different sources but recognize the experiential representation that someone listening to a film is going to have is at the core of human experience. And they understand that innately.”

For Lavine and the team at Bug ID, the job has finally wound down after nearly three years. One of Bug ID’s system designers for the project has made the move to Dolby full time to help maintain system continuity. It has been beneficial for both companies. It was a huge challenge for a relatively small integration firm, with attendant risks on both sides. But Lavine had some experience with the company, dating back seven years to a campus build-out in the Sunnyvale location, followed by a couple of suites in Burbank, so he had an idea of their approach. It has all come together beautifully, in form and function.

“I still get such a reward when I walk into a room and see people creating, using the technology,” Lavine says. “Our goal was to give them the tools to create, to give them an environment as flexible and user-friendly as possible. We knew it was going to be huge back when we started in 2013, and now that we have pulled it off, it feels good.” ■



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# DAVID VAN SLYKE

## THE SOUNDS OF 'CSI' AND BEYOND

By Robyn Flans

Sound designer David Van Slyke is a self-professed sound collector and hoarder, with a guesstimated 100,000-plus sounds in his private library of tools.

Some sounds he's simply recorded at the moment he's heard them, like the cool malfunctioning fan in the men's room at the local Burger King (with his Olympus LS-10)—just thinking he might have use for the offbeat sound of it one day. Or the time he recorded someone's washing machine that had “an amazing, pitching high frequency to it which I pull out every once in a while and use.”

On a trip to England, his cousins happened to have a beehive. He insisted upon getting fairly up close and personal with the bees with his DAT machine before animal control came by to eradicate them. He

thought the sound of their swarming and flying over the hive was very cool and might come in handy one day.

It did. On the two-hour series finale of *CSI*, entitled “Immortality”—nominated earlier this year for an MPSE Golden Reel Award for Best Sound Editing in Television Long Form: Sound Effects & Foley—there was a bee scene, and his moment with the bees sure sounded better than any canned sound he could have found.

“I always travel with a recorder,” Van Slyke says. “It used to be a DAT recorder. Now it's a digital handheld recorder. I even record things on the iPhone.”

But it's not all happy accidents; Van Slyke also goes hunting for the perfect sound required for a frame like he did in the opener of the pilot



for *Gotham*. As Bruce Wayne's parents are murdered in front of him, his mother's pearls break and hit the pavement in slow motion. The sound of the pearls cracking is brutal.

Van Slyke's first experiment with breaking a strand of beads over his cement floor was not to his liking. He went searching through his house and came up with a porcelain pastry dish and dropped the beads into it. Voilà! Much more pronounced.

In the small studio in back of his house where he can obsess about his work any time, day or night, just blocks from his other studio at Sony Pictures, Van Slyke spoke about his journey from earning a degree at Berklee College of Music in traditional composition, to providing sound design and sound effects for 335 episodes and the finale of the smash-hit show *CSI*.

Once he got the recording bug, he transitioned from wanting to write music to wanting to produce and record, and spent six years in Boston doing post-production. He taught mixing at Berklee, heard about the Synclavier, and paid to go to White River Junction for a weekend to study it. Then he convinced Berklee to get a Synclavier. In 1990, he moved to Los Angeles.

"I was getting to do some good work in Boston, but big fish, small pond," he says. "I was 30 at the time and thought I should take a chance."

He paid some dues working all types of jobs in post-production, but it wasn't long before he got his first "real" job on *Baywatch*, at Sony Pictures Studios.

"That was really at the dawn of digital," he says. "Sony had just bought these [WaveFrame] AudioFrames, which is now a defunct DAW, but they were so cool. Back in that day, most anything you pitched had artifacts, but they somehow figured out how to do a four-octave range without artifacting, so we could make these really cool sounds."

During his six years at Sony, Van Slyke worked on a range of projects, including sound effects editing on Francis Ford Coppola's *Bram Stoker's Dracula*, which won an Oscar for Best Sound Editing; *Young Riders*; and *Dr. Quinn, Medicine Woman*. On *X-Files*, Van Slyke was nominated for his first Emmy for an episode called "Duane Barry," but his big recollection is for an episode called "The Host," where he had to come up with sounds for the "flukeman."

"There was this thing that came out of a guy's mouth and it was just disgusting," he recalls. "We went and got some raw chicken and abused the chicken. I was viscerally sick for a week because of the sounds we were making. The next week it went away and we were on to another episode."

Today he works in front of his dual 23-inch monitors and 5.1 JBL surround system, designing and editing in Pro Tools 10 and 11. His library exceeds 3 terabytes, and he uses SoundMiner Version 4 to organize and search. The process for *CSI* was typical, he says, starting with receiving picture and a set of tracks over the Internet.

"They give you a set of production dialog, temp effects and music," he explains. "The music is temped in. John Keane is a fabulous composer; he was on *CSI* as long as I was. Then you watch it once, twice, three times. I try to intuit from the picture what it wants. Sometimes I watch it in slow motion because we do a lot of things that are very fast.

"We have a certain approach to a scene—to really paint them and color them," he continues. "It's really like a composition. We have to use rhythm, timbre and feel. Even with a bird: It might be a happy bird, it may be a crow. Then exactly where it places has a beat to it. You have to look at the scene as a song and then you find places to crescendo things. Sometimes you crescendo at the end, sometimes in the middle.

"Post-production is like a quintet," Van Slyke says. "The dialog is the



The core 'CSI' sound crew, from left: Frank Waldeck, line producer/director; Phil Conserva, post-production supervisor/director; Louis Shaw Milito, director of the two-hour special and longtime 'CSI' producer on the show; David F. Van Slyke, sound designer; and Anthony E. Zuiker, creator of the 'CSI' franchise and executive producer.

lead instrument. The music is the second lead instrument. The sound design bridges the gap between sound effects and music and it has more of a musical quality than it does a sound effect quality. You hear it and think, 'What is that? I don't know.' When I put it against picture, emotionally it pulls you in and tells you something about the story."

One of the unique sound sets at *CSI* was the flash-ins and flashbacks, serving as transitions, which Van Slyke always had to create. Representing those, the picture might have glowed and the sound had to do the same thing. Or it might have sounded like wind or a gavel, something breathy or a little more like thunder.

Those moments often swirled into set rooms, which in turn were designed with characteristic sounds like technical beeps and blips, electronic and computer-based. "You could drop in and know you were in the morgue or in the interrogation room by the sound," he says.

The job is arduous. A frame is one-24th of a second and Van Slyke admits it can take a day to create seven seconds of sound. But "the thing about television is you don't always have a day," he says. Typically he has five or six days for the 42 minutes of an episode.

His hard work and what he calls "the sound of cool sounding visual effects and gruesome violence, interspersed with a lot of talking about science and cop stuff" has been recognized, though. In his 15 years on *CSI*, he was nominated for eight Emmys, winning one for the 2003 episode called "Fight Night." He also won two Golden Reel awards and two Hollywood Post Alliance awards.

No surprise that he experienced some postpartum feelings when the show ended.

"I went through a big grieving process," he admits. "It was such a blessing and lasted so long. It ended kind of abruptly. We weren't sure it was going to end or not. But we inspired so many crime shows."

Among his many recent projects, Van Slyke has been working on a Sundance Film called *Holy Hell* about a cult. It requires a lot of archival footage, so he's finding himself working with iZotope RX-5 and Waves WNS to remove hiss. He also designed the sound for the recently aired pilot for *Lucifer*.

His hope is to find another dramatic series that will turn into a long-term opportunity. He enjoys the consistency and relationships established while working on a series.

"I get to grow it and we come back to it and add to it," Van Slyke concludes. "That's what we did with *CSI*. Over the growth, we came up with new things. I like the work and the challenge of the time commitment. I love what I do." ■



Photo: Patrick Harbron/HBO.



Ato Essandoh as Lester Grimes,  
Bobby Cannavale as Richie Finestra,  
Max Casella as Julie Silver, Juno  
Temple as Jamie Vine.

# THE MUSIC OF VINYL

HBO SERIES RE-CREATES NEW YORK SCENE, 1973

By Lily Moayeri

**T**he year 1973 is a rich and diverse one for music. That's the time period that two of the collaborators on *Boardwalk Empire*, namely, Martin Scorsese and Terence Winter, and their music supervisors, Randall Poster and Meghan Currier, plus producer/engineer/mixer Stewart Lerman tapped into for HBO's newest smash, *Vinyl*.

*Vinyl* is the story of the music business set in 1970s New York, at the cusp of punk, hip-hop, and disco, at a time when the industry is filled with powerful old guys and drug-doling young girls. In addition to the powerhouse production and music team, *Vinyl* has a bonus stamp of credibility with Mick Jagger in place as its co-creator, executive producer and executive music producer—and his son, James Jagger, as one of the show's

stars, playing, naturally, a musician.

"The great golden age of rock 'n' roll is '67 to '71," says Poster, who is no stranger to music-based films, having worked on, among others, Todd Haynes' glam-rock homoerotic love story, *Velvet Goldmine*. "You have a lot of music people are still listening to from the '60s, and the specter of that decade is bleeding into 1973."

Poster is a veteran music supervisor with more than two decades of creating a musical experience to accompany visuals. Currier has worked with Poster since *Boardwalk Empire*, forming a strong, balanced team with a clear vision. This comes in handy as there are anywhere from 20 to 30 songs included in each episode, hitting 60 in the two-hour pilot.

Atlantic/Warner Bros. is releasing two full soundtracks to bookend the



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Dustin Payseur as Duck (guitarist), Jack Doyle Smith as Otto (bassist), James Jagger as Kip Stevens, Thomas Gardner as Nolan (drummer).

Photo: Macall B. Polay/HBO.



first season, as well as a five-song digital-only weekly release every Friday in between as a preview to the upcoming episode on Sunday. These releases are a cross-section of vintage songs from the original artists, vintage songs re-recorded by contemporary artists, and original songs written for the show. There is no genre limitation, with material from Otis Redding to Mott The Hoople, Jerry Lee Lewis to Foghat and covers from Aimee Mann to Julian Casablancas, Neko Case to Andrew WK. Greg Calbi has mastered both the classic and the new recordings for a smooth, even listening experience.

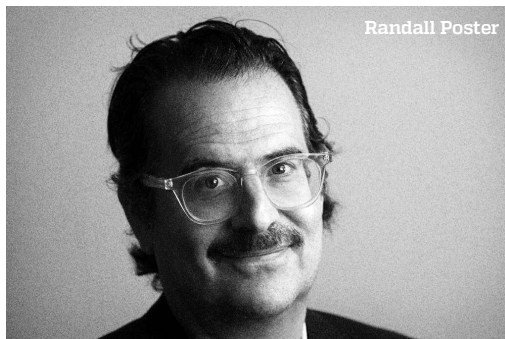
"I became the expert on the music of the 1920s era during *Boardwalk Empire* because people are not familiar with the repertoire," says Poster, who won a Grammy in 2012 for Best Compilation Soundtrack Album for *Boardwalk Empire* and another one in 2014 for the *Grand Budapest Hotel* soundtrack. "1973, everybody is an expert. There were interesting and unique challenges to that. Songs that are one person's guilty pleasure are another's sacred song. It was an interesting calculus to land on the right thing and find repertoire that would still be surprising to a 2016 audience, and how to fit in some familiar pieces to give people their period grounding."

Everyone in the inner *Vinyl* crew had piped in with their musical ideas as Poster looked at period publications and trolled YouTube, whose right-hand suggestion bar would lead him down the rabbit hole with sometimes interesting results. And while *Vinyl* is not billing itself as a documentary in any way, the team is strict in terms of locking into the period of the show, in part to allow the emerging music scenes of the time to appear organically as the story progresses. And in part because Jagger was keeping them in check as far as the backstories of the characters, in order to insinuate and implicate the inspiration of the building blocks for the music's evolution.

Photo: Ian Gittler



Stewart Lerman at Electric Lady Studio A.



Randall Poster

Part of the authenticity of the show is in the casting of the on-camera musicians, as well as those who are involved with re-recording the period classics and original songs. Poster and Currier are involved with both sides of this process, starting with rehearsals of the musicians in order to appear as genuine as possible to the viewer. Along with Lerman, Sonic Youth's Lee Ranaldo and producer Don Fleming shaped the recordings for *Vinyl*'s prototype punk band, Nasty Bitz, using the blueprint and music of pre-punk anti-heroes, Jack Ruby. Lerman worked with Dap Kings' Gabe Roth, who is responsible for making Hannibal, the show's Sly Stone/Curtis Mayfield music come to life, while Charlie Wilson lent his singing voice to the character.

"The people we worked with on the recordings specialize in that style of music," says Lerman, who recorded the music for *Vinyl* at Electric Lady and Avatar, taking full advantage of those studios' Neve 80 series analog consoles while recording to Pro Tools. Lerman's usual collection of front-end equipment—for example, Neumann U 47, U 48, M 49 tube and ribbon microphones and Teletronix LA-2A and UREI 1176 compressors—tends to be from that era.

Says Lerman, "Part of the reason for using some grittier tube gear is because we're recording digitally and not on tape. It's nice to be able to push some harmonic distortion out of the gear and have it sound good, like tape did. The mic pre's on the desk and the compressors, if you drive them really hard, it gets the sound pretty period. Nice and crunchy and grungy and not modern, which is cleaner and more transparent."

Like everyone, Lerman is a fan of that musical era and also grew up during that time. As such, he has a good understanding of the vibe that needs to come across and conveys that to the musicians with whom he is recording. He'll meet with them, read the scene and put it in the context of the script, listen to old records, have discussions, make adjustments, and determine what the music ultimately has to reflect before beginning recording.

"If you're trying to capture something someone's not playing period correct with period-correct equipment, then it's not going to sound period correct," says Lerman who records the musicians playing together as a band—even if they're not a band in real life. "It really starts with the players understanding or coming from that era of making records. Understanding how to tune the drums, what guitars to use, what amps to use, what effects to use, that's such a huge part of it. Once you get people who really understand how to make records from that era in that style, capturing it is so much easier when someone is giving you the right stuff to source." ■



Continued from p. 24

bundle I could perfectly easily work with just the eMo plug-ins” that come with the LVi system. “As soon as we load the software it loads every channel with the D5 [Dynamics] and Q4 [Paragraphic EQ]. They are so good; zero latency. It uses no processing power, but every single knob, dial and switch on the dynamics does exactly what it says it does, and it does it really well.”

Among Wood’s go-to plug-ins in the Mercury bundle is the SSL G-Master Buss Compressor. “It glues your mix together and does it really well. The C6 Multiband Compressor is also a fantastic device. I can’t say that I have a particular plug-in that I can’t live without. If I did it would probably be the D5. It does everything, and supremely well.”

The LVi system supports up to 128 inputs at sample rates from 44.1 kHz through 96 kHz, with eight plug-ins per channel and bus. “One of the songs that we’re playing off Dweezil’s new album, a track called ‘Rat Race,’ has a very affected vocal. I probably have five or six plug-ins to generate the sound that he developed in the studio, but it does it effortlessly,” says Wood, who is using 42 inputs at 48 kHz on the Via Zammata tour and typically handles just over 50 with ZPZ. To enable Zappa to hear the “Rat Race” vocal effect in his in-ear mix, “We just loaded it onto a key, popped it into the monitor desk and—bang—there it was.”

Other than the onboard Waves processing, says Wood, “I do use a TC Reverb 4000. I have the remote control software on my laptop so I don’t even have to look at the front panel. The only reason I’m using it is because over the 10 years I’ve been working with ZPZ I’ve created a bunch of reverbs for specific songs from Frank’s catalog. I will be able to reproduce those within the Waves plug-ins but it will take time to do that.”

At monitor world, Jones enjoys a similarly quick and easy setup. “If you can’t patch 16 XLR cables and plug in four things in 10 minutes then you’re not worth your weight,” he laughs. “If you can get hooked up really fast, then you have tons of time to work on the mix. That, combined with being able to do anything you want within this computer, is amazing.”

Jones generates eight in-ear mixes, one for each of the six musicians plus a guest mix, and one for himself, monitoring on headphones. The band is split 50/50 between Ultimate Ears and Jerry Harvey in-ear buds, he reports, using AKG wireless systems.

“Probably the greatest thing about the LVi system is how fast it is,” he continues. “I’m able to take multiple orders from people onstage and then shoot it all in there. I’m mostly working on one screen; I have the other one for channel and rack stuff.”

As production manager, Jones is concerned about getting the most bang for the buck. The LVi is not only an economical alternative to a traditional digital console, it also sounds good, he says. “This is the first system we’ve used where we aren’t giving up sound quality so that we can have an easy package to haul

around the United States. Weight means money, so I’m saving on everything down to the gas for the tour bus.”

Plus, Jones notes, the equivalent outboard gear would require more crew. “When you have all those Waves plug-ins, it replaces racks and racks of gear. If we had racks of gear instead of all the plug-ins we’d have to have at least one audio assistant. The two touchscreens replace a console that would take us, with a Midas Heritage, a team of guys to tip. It would also take an equipment truck that costs a lot more than a little trailer that’s towed behind a tour bus.

“As the production manager, each one of those things is saving us money,” he adds. “Or, in essence, making the artist more money and maintaining the ability for us to have jobs, because he has to make money for us to have jobs. It’s a symbiotic relationship.” ■

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Photo: Comedy Central



Ilana Glazer (left) and Abbi Jacobson, stars of 'Broad City'

# THE SOUND OF NEW YORK CITY

## MUSIC AS A CHARACTER IN 'BROAD CITY'

By Jennifer Walden

If you've ever lived in or around New York City, you know that Comedy Central's series *Broad City* is legit—the Treeman, the dumpling spot, the guy with that cat on his head, the trapeze school on the Hudson River, pop-up designer clothing sales, using “bridge and tunnel” as a derogatory adjective, taking no notice of public urination because finding a bathroom is an epic quest...need I go on? Comedians Ilana Glazer and Abbi Jacobson, the series creators and stars, deliver all of New York City's quirks in their veracious tale of two Millennials trying to make it in New York City.

To bring felicity on the music front, they picked a member of their own ranks to handle music supervision. As a lifelong New Yorker, 24-year-old Matt FX Feldman is more than a mere representative of

NYC's musical subculture; he's a shaper of it. He's spent years DJing, throwing sporadic dance parties with fellow DJs in the Tribes NY crew, and producing his own music.

“Even before I started working on *Broad City*, I've been embedded in a lot of what is going on with Brooklyn dance music. I'm able to get a degree or two away from [mainstream] just through friends and people telling me to check different artists out,” says Feldman, who cut his music supervision teeth at the age of 19 on MTV's controversial series *Skins* (2011). Through that show, he gave young TV audiences their first introduction to off-the-map indie artists like Phantogram and Blood Orange, and dub-step artists Rusko and Aquadrop—groups too sidestream for MTV's main flow of musical offerings.



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Matt FX Feldman



Photo: Jelena Aleksich

Despite strong viewer numbers initially, MTV pulled the plug on *Skins* after one season due to a loss of advertising support. But the show wasn't a loss for Feldman. Even though his first experience as music supervisor was a brief one, it was ultimately his stepping-stone to *Broad City*.

"The assistant editor on *Skins* calls me out of the blue one day and says they're working on a show that goes to air in a few weeks. Since their music guy wasn't working out, could I come in and find some music for them? That show was *Broad City*," says Feldman.

After meeting with Glazer and Jacobson, Feldman learned that there were many parallels between their worlds, including their tastes in music. "I came in on a Tuesday and by the end of the day they told me to stay the rest of the week. That Friday I had a DJ gig, and Ilana [Glazer] and her friends came to check it out. I think that might have been the final test because the next morning I woke up to an offer from their boss."

*Broad City*'s view of New York is a far cry from the vanilla-frosted "I'll Be There for You" *Friends* portrayal, and it avoids being the spiky sitcom that *Seinfeld* was (captured perfectly by composer Jonathan Wolff's synth sample slap-bass theme song). *Broad City*'s theme song, "Latino & Proud" by Chilean music producer DJ Raff, sets the tone for the show with its bouncy hip-hop dance music vibe.

"We all love hip-hop. We all love dance music. We like a lot of music that skirts the line of genre, especially with soul-style vocals on it," says Feldman, whose track selections harmonize with the show's street-level comedic direction, flitting around the fringes of society where small-scale drug use and promiscuity are acceptable norms. "There is a very unique sound that you get from the transitions between scenes, those interstitials with shots of New York. Tonally, that's going to be what people know and love, that almost silly Missy Elliott vibe; that off-the-wall, club-fun type sound."

Because *Broad City* is all about New York culture, Feldman likes to maintain the flavor by culling cues from local artists. Some of Feldman's favorite NY-made tracks for Season 3 are Bruce Smear's "Junktion" that plays during the basketball match in Episode 2: "Co-op"; Jarina De Marco's "Tigre" that punctuates the dramatic entrance of Vanessa Williams in Episode 3: "Game Over"; and Zebra Katz & Kashaka's "Marijuana," and AceMo's "On the Low," which plays while Ilana and Hannibal put a gift

basket back together in Episode 4: "Rat Pack." Feldman reveals, "There is probably no less than 60 percent of New York-based artists at any given time, if not more. When the artists aren't from New York, I actually try to look internationally, although I'll use any artist with a great track."

Now that *Broad City* is on Season 3, Feldman says opportunities for music on the show are opening up, with more "headlining" artists willing to license their songs, and more indie artists reaching out to him directly to offer up their work. "I'll open an email and I will check out any song, but I can't guarantee I'll use it," he says. "The artists that we go for are ones that could really use it, or are working with someone who is smart enough to say, 'Take the low fee because the exposure is worth it.'"

The music is opening up from a genre standpoint, too. *Broad City*'s sound has always leaned heavily on electronic beat-based songs, but Season 3 incorporates more guitar-driven tracks, like "Buttercup" by Toronto band Weaves, and "A New Wave" by Sleater-Kinney of Washington State. "That is something that people wouldn't have expected in Season 1, but it's something that we are happy to do as we grow," says Feldman. "With guitar music, we have all agreed upon the sort of stuff that really revs up to 11. There is a lot more of that this season especially."

In seeking out music for *Broad City*, Feldman believes in serendipity, and so far opportunity has not failed to present itself. For example, during production on Season 3 last summer, Glazer and Jacobson emailed Feldman to request some "baller hip-hop" tracks to use for scenes they were shooting at New York's 40/40 Club, an upscale sports bar owned by Jay Z.

Feldman notes: "In the licensing world, hip-hop is generally one of the most difficult things to license, if not for the crazy use of samples,

then for the fact that all the big rappers are locked into big labels and big publishers. More so than electronic music, I think that rap is something that really does benefit from a big budget in terms of just the quality of sound. Obviously low-fi rap is great but when you're talking about the 40/40 Club, it needs to sound expensive. It needs to sound big."

Feldman says he had no idea where he was going to find "baller hip-hop" songs he could afford on the show's budget, but that night, as he joined some friends, albeit reluctantly, at a popular club called Up & Down, fate gave him a reward. "It's not really my scene but I was convinced to go," he says. "As soon as we got downstairs I saw this vision in a cowboy hat and assless leather chaps and a bikini top, and she's rapping. She has this Nicki Minaj/Lil' Kim/Christina Aguilera-type vibe, and she is just crushing it. When she was done performing, I ran over to her and said, 'I've been looking for you all night!'" The artist was K Rizz, and her song "YES Bitch" worked so well for the shoot that the director contacted Feldman to say that people on-set were asking whether or not that song was written for the show. "It was such a serendipitous moment."

Feldman's biggest challenge as music supervisor on *Broad City* is working within the budget, but it's a hurdle that hasn't slowed him down. "It's something that I've been able to overcome," he says. "I wish the paradigm shift would happen with cable TV where I could start paying artists more money, but I don't know if that's going to happen anytime soon."

As for the big name tracks written into the show, like Lady Gaga's "The

**"It's a dream job. It's something that I am so grateful to be doing. I'm so grateful that the girls trust me. It so falls in line with what I'm already so passionate about..."**





Post-production for *Broad City* is provided by New York's Running Man. Feldman typically pulls 20 to 50 potential tracks for each episode, and depending on the edit, anywhere from 2 to 25 tracks make it in. While Feldman doesn't edit the music himself, he does work with the picture editor to ensure the tracks sync perfectly to the cut. "If a track doesn't make it into a certain episode and I know that it is perfect for the show, I will find somewhere else for it eventually, hopefully," he says.

Creatively, Feldman feels that he has quite a lot of freedom on the show. While Glazer and Jacobson are very involved with the music, and provide

Edge of Glory" playing under Abbi's naked dance of celebration for having the apartment all to herself in Season 2/Episode 2: "Mochalatta Chills," or this season's lip-sync rendition of *Sister Act 2*'s "Joyful, Joyful We Adore Thee" performed by the Deals, Deals, Deals office workers after Ilana's exit in Episode 3: "Game Over," Feldman says the funding for those come from a separate budget.

Feldman with a short list of artists and songs they'd like on the show, Feldman decides where to fit them in. "That is very much up to me," he explains. "It's a dream job. It's something that I am so grateful to be doing. I'm so grateful that the girls trust me. It falls so in line with what I'm already passionate about, so even if I had never heard of *Broad City* I'd still be looking and searching for all of this music!" ■



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# THE EERIE SOUNDS OF MAC QUAYLE

COMPOSER SETS MOOD ON 'AMERICAN HORROR STORY: HOTEL'

By Lily Moayeri

**T**he road to Mac Quayle's home studio feels like it leads right to the sky. Twist after twist up the Santa Monica Mountains, at times there is a very real sense of falling off the edge of the Earth. Here, ensconced in his remote hideaway with his family, the composer of *American Horror Story: Hotel* and *Freak Show*—for which he was nominated for an Emmy for original dramatic score in 2015—creates the sounds that both heighten and complement those series' terrifying stories.

Quayle has a long history in music, mainly as a dance remixer/producer for pop artists such as Beyonce, Jennifer Lopez, Christina Aguilera, Britney Spears, Madonna and many others, for which he has a tidy collection of gold and platinum discs. His shift into scoring came 10 years ago

working as "additional composer." It was only a year and a half ago that Quayle moved into the sole composer position.

It was Ryan Murphy's team—the creator, producer, writer, and director behind such television hits as *Glee*, *Nip/Tuck*, and the *American Horror Story* franchise—that gave Quayle this opportunity. Quayle had provided music alongside Cliff Martinez on Murphy's film, *The Normal Heart*. He was approached to write a demo piece of music for a scene from *Freak Show*. Very soon after, Quayle got a call saying, "Can I speak to the new composer of *American Horror Story*?" Since then, Quayle has become a Ryan Murphy regular, scoring *Scream Queens* and *American Crime Story*.

Quayle is given direction as to what overall sound each *American Horror Story* season is going for, and he is given a script ahead of time. Unlike the



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Sarah Paulson as Sally McKenna and Wes Bentley as Detective John Lowe on 'American Horror Story: Hotel.'

conventional method of having a locked picture, a spotting session, cues determined, and then writing music—which is what he has with another show he works on, *Mr. Robot*—scenes are delivered to him as they are shot.

“For the first month of working with [Murphy], I didn’t have my bearings because I didn’t realize what they were doing,” Quayle says. “I’ll write music and send in not just the stereo mix, but also the stems. As the cut evolves, the editors are cutting the music. They’ll come back to me and say, ‘All of this is working except maybe this one thing. Can you write something else?’ There’s a lot of back and forth. Everything is evolving right up to the last minute. At first I didn’t know what to make of it, but I’ve come to like it. It deepens the operation.”

Quayle’s scores for *Freak Show* and *Hotel* are deliberately very distinct from each other with none of the sounds from the former being used for the latter. *Freak Show* is set in the ’50s and has an organic sound, while *Hotel* takes place in the present—although most of the licensed music is electro-synth-pop from the ’80s, making the score synthetic in feel. It wasn’t Quayle’s intention to create a signature sound for *Freak Show*, but the sound he gave them based on the direction of “’50s sci-fi film strings” resurfaced again and again in various guises throughout the season, creating a narrative. In contrast, on *Hotel*, Quayle purposely attempted to come up with an identifiable sound that would work as a through-thread for the season.

Additionally, there are certain sounds that go with certain characters, at least in Quayle’s mind, but they may not remain that way. “In *Freak Show*, Twisty The Clown had this warped, broken music box-type of circus sound that we used for a lot of his scenes,” says Quayle. “Once Twisty gets taken away, Dandy Mott, the rich psycho takes over, so now the theme starts to apply to him. The editors are noticing when something I’ve written for a particular character works really well for them, and it will keep getting used over and over for that character. But that doesn’t mean they won’t use it somewhere else. I’ve definitely thought, ‘Whoa, that’s an interesting way to use that theme; I wouldn’t have thought to use it for this character, but it works great.’”

Both scores are created in the box with Logic Pro X 10.2.2 as Quayle’s main workhorse. Pro Tools runs on a second machine, where he runs his video and syncs it with Logic. *Freak Show*’s sounds are primarily drawn from string sample libraries. An accomplished pianist, Quayle also used Imperfect Samples’ piano library and recorded live cello and harmonium for sound sources.

“So many pianos are perfect, clean, every note is exactly right, they sound beautiful and great,” says Quayle. “[Imperfect Samples] is not that. The samples are of a Steinway & Sons, but have little noises, creaking that you would hear if you were recording a real piano. I found that to be pretty useful. This ’50s sci-fi strings sound was a library that sounds like a current-day string section, but with the processing, I like to think I took it back to the ’50s. I came up with this string line, ran it through a guitar amp, plug-ins, then doubled it with a sample of a synth that sounds like a theremin.”

Some of Quayle’s go-to plug-ins are for reverb: Eventide Blackhole Native for its big sound and

shimmer and Lexicon PCM Native Random Hall for less shimmer; delays and filters from Soundtoys; and distortion and filtering from Ohm Force Ohmicide, which mangles sounds into something really interesting. Says Quayle, “On *Hotel*, what might sound like a heartbeat is a low kick drum sound that rather than pulling up a sample, I did with a synth with reverb and delay.”

One way Quayle stops himself from repeating sounds from season to season is by buying new instruments. For *Hotel* he went with U-He’s Zebra and Diva—which ended up in every cue—plus Rob Papen Predator and Blue II virtual synths. Native Instruments Kontakt synth libraries came in handy, as did Output Signal, which runs in Kontakt.

“My process on all shows is I start with nothing,” says Quayle, who keeps track of his workflow using Google Drive’s Sheets. “The template starts to build as I’m finding my sounds. I come up with a few sounds, start writing, find a few more, write, and I’ve written a cue. Say I’ve got nine sounds, that’s the beginning of the template, which I put into categories like pads and strings, synths, effects, Arps. When I write the next cue, I save a copy. I’ve got those nine sounds, and maybe a couple of them are going to work for this cue, which I can pick from the categories. Now I need some more sounds, and by the end of that cue I’ve got 15 sounds. I’ll open a cue from before if I want that exact collection of sounds and start from there. But cue number three could have sounds that cue number four doesn’t have. At the end of each episode, I organize everything into an official template that has all the sounds I used up until that point in the season. By the end of the season with *Hotel*, I had 60 or 70 sounds. Having all those sounds sitting there makes it quick.”

With the steep learning curve Quayle has had with deadlines and pressure, quick is of the essence. The aforementioned Google Sheets keep him in check—although they’ve been known to also be a source of procrastination as Quayle adds start and stop times, lengths and moves cues from “under construction” to “delivered” to “under revision” to the last stage of “mixed.” And then does it all over again. ■





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# BROADCAST WIRELESS SYSTEMS

BY STROTHER BULLINS

Wireless components specifically for gathering live event broadcast audio include a broad range of options in transmitters and receivers, communication (comm) and interruptible foldback (IFB) systems, the transducers themselves, and many accessories and tools. Mix called on James Stoffo of Radio Active Designs (RAD) to shine a bit of light on this increasingly complex subject, complete with its frequency- and logistical-based challenges.

"I've seen the whole RF industry go from VHF to UHF and now back to VHF—the auctions in all these large events, the RF congestion in the UHF bands," he says. "We created RAD because if we didn't, there would be a good chance I'd be in a different business altogether, as I only do wireless. We've lost 35 percent of the UHF spectrum already and we're about to lose another 35 percent or more. Somebody had to do something, so that's where RAD came from."

Because of the recent loss of 700MHz RF spectrum through auction and a potential loss of at least 128 MHz in the 600MHz band, other frequencies such as 900 MHz and 2.4 GHz have become popular, just to avoid the UHF congestion.

"We have no choice," Stoffo says. "We have to vacate the UHF spectrum. No question about it. For example, with 900 MHz and frequencies over a gig, a lot of manufacturers are looking there for wireless microphone [product development] because it's appropriate. For comms, we did the opposite—we went down in frequency. That's because, for comm, VHF is appropriate."

In the future, this migration from the traditional UHF spectrum—470 to 698 MHz—will continue in wireless and comm systems, Stoffo says. "With wireless microphones, comms and IFB—but not in-ears, yet—I would expect to see more products introduced in 900 MHz, down in VHF. We did it at Radio Active Designs, and Lectrosonics and Shure have followed, and are now selling equipment in VHF spectrum. Shure ULX-D Series was introduced at NAMM and Lectrosonics makes an IFB down there. Clearly it legitimizes

the moves outside of the traditional audio spectrum. I expect you'll also see a lot of gear coming from manufacturers above the spectrum—900 MHz, 902 to 928 MHz, 944 to 952, and above one gig, 1.9 GHz and 2.4 GHz, and possibly 1.4 GHz. It just has to be coordinated with aeronautical organizations. It depends on how fast the auctions take place, but certainly within the next one to three years, you'll see a migration out of UHF and into other spectrums, and you'll see UHF ears."

And now, *Mix* presents some available systems from nine key wireless manufacturers for use in broadcast.



## AKG

AKG's DMS800 reference digital wireless microphone system features two digital audio outputs for DANTE and AES/EBU, along with the DHT800 handheld transmitter, interchangeable microphone heads, DSR800 stationary receiver and the DPT800 wireless body pack transmitter. The system offers two balanced XLR and two unbalanced jack connectors, as well as digital wireless audio transmission with low-cut filter, 3-band equalizer, dbx compressor and dbx limiter. The DMS800 allows users to choose from a variety of premium dynamic and condenser vocal microphones, including the D5 WL1, D7 WL1 and C5 WL1. Up to 40 channels are available with the DMS800, which can be used simultaneously. The DMS800 offers an up to 150MHz-ultra-wide frequency range. Also, 512-bit encryption ensures state-of-the-art protection for sensitive audio information.



## AUDIO-TECHNICA

Audio-Technica offers a broad range of wireless microphone systems in UHF, VHF, 2.4 GHz and Ultra Wideband

(UWB); UHF wireless in-ear monitoring systems; dozens of high-quality subminiature condensers, plus head-worn, shotgun and boundary microphones for wireless use; and various UHF and RF antenna and booster accessories.

Audio-Technica's System 10 2.4 GHz wireless range has become popular of late. I recently reviewed a System 10 PRO product, the 24-bit/48kHz ATW-1312 dual-channel bodypack/handheld package comprising a half-rack chassis with two receiver unit slots. Via Ethernet, each rig's receivers can also be mounted remotely, up to 300 feet away from the chassis—a considerable savings in applications where normally an antenna distributor would be employed. Five System 10 PRO chassis can be linked via RJ12 cabling for a total of 10 channels per system.



## CLEAR-COM

Clear-Com, reportedly the first manufacturer to market portable wired and wireless intercom systems for live performances, has been in business since 1968. Its latest, the DX410, is a 2-channel 2.4 GHz digital wireless intercom system featuring 7kHz wideband audio for next-level audio clarity. It also features lightweight belt-packs and all-in-one wireless headsets. Each BS410 base station can support up to 15 registered BP410 wireless belt-packs and/or WH410 All-in-One wireless headsets. In a single-chan-



nel operation, any four beltpack users can engage in simultaneous, full-duplex (talk-listen) communication, while three users may be in full-duplex mode in a dual-channel operation.



## LECTROSONICS

Wireless and IFB products are at the core of Lectrosonics' business in broadcast wire-

less audio systems. Transmitters include hearty handhelds (like the HH) to tiny micro beltpacks (like the SSM), which offers a total of 3,072 available frequencies across three standard frequency blocks. Digital Hybrid Wireless Compact and Venue UHF receiver packages are available, too. A range of VHF and IFB products, a Digital Wireless transmitter and receiver, as well as a variety of pre-packaged systems and accessories round out Lectrosonics' wireless range.



## PLIANT TECHNOLOGIES

Pliant's digital wireless systems—the Tempest2400 and Tempest900—operate in a license-free 2,400 to 2,480MHz frequency band, while the Tempest900 is in the 902 to 928MHz frequency band; they are each available in either 2-channel or 4-channel versions. Tempest 2400 systems have the ability to operate up to 11 BaseStations and 55 full-duplex BeltStations in the same RF space, at the same time, with no license requirements and no frequency coordination. The Tempest900 system can have a maximum of five BaseStations and 25 full-duplex users.



## SENNHEISER

Sennheiser provides many professional wireless products, a good amount of which are specifical-

ly built for broadcast audio use. These include lavalier, headset and camera-mount microphones; 2000, 3000 and 5000 Series UHF Transmitter/Receiver products; Digital 9000 for broadcast studio apps; specialized shotgun, various broadcast-friendly and MKH Series RF condenser microphones; and much more.

Sennheiser isn't ignoring the "over a Gig" frequency landscape, either. I recently reviewed Sennheiser's relatively new AVX Handheld Mic Set, an affordable 1.9 GHz-band handheld digital wireless kit for indoor or outdoor HD video sound. I found the AVX-835 package to be a very useful tool in a far wider range of applications—anywhere a great-sounding wireless handheld transducer and accompanying tiny receiver hardware is desirable (and a latency of 19 milliseconds won't really matter). This entire road-ready kit fits inside its compact padded Sennheiser wireless mic zipper pouch. Best of all, both the transmitter (AVX SKM) and receiver (AVX EKP) hold lithium-ion batteries, rechargeable via mini USB (B-type) connection, making this a truly modern on-the-go handheld wireless system for a variety of purposes.



## SHURE

Providing a broad range of subminiature condensers plus head-worn, shotgun and boundary microphones for wireless use, Shure is a rich source of

both wireless personal monitoring systems and microphone transmitter and receiver packages available from BLX, GLX-D, PGX-D, FB, SLX, ULX-S, QLX-D, ULX-D, UHF-R, as well as flagship Axient UHF Series categories.

In particular, Shure's long-running QLX-D Digital Wireless System (with lithium-ion rechargeable power options to provide up to 10 hours of continuous use) provides 24-bit digital audio, networked control and compatibility with the company's intelligent rechargeable battery technology. The system features automatic channel scan and IR sync, and is intended for live sound events and/or installations at corporate and government facilities, academic institutions, houses of worship, hotels, music venues, and other venues.

## SONY

Sony offers high-quality shotgun microphones and a range of lavalier/worn models, plus its dig-



ital UHF DWX, 2.4 GHz digital DWZ, and UHF UWP Wireless Series of transmitters, receivers and various accessories. TV composer Rich Tozzoli (*NBC Olympics*, *Duck Dynasty*) has experienced the benefits of the DWZ Series via its digital guitar wireless system, the DWZ-G30GB.

Tozzoli explains: "Overall, the Sony DWZ-B30GB is a tight, affordable little package. More importantly, it sounds great, is solid and compact, has respectable battery life and can be used effectively both onstage and in the studio. Its narrow mode, which does not hop across the 2.4 GHz band, is intended for need-specific frequency coordination, taking into account other wireless applications in that particular spectrum. The audio signal coming out of the receiver is 24-bit linear PCM with no compression, so it's crystal clear."



## WISYCOM

Designer and builder of sophisticated RF solutions for broadcast, film and live production, Wisycom, based in Italy, offers MPR30ENG, a compact true diversity receiver designed for professional ENG, broadcast, and field

production applications. MPR30ENG features two whip antennas along with wide-band tuning in the 470/ 952MHz range up to 230 MHz. All audio processing is managed by DSP to allow multi-companding, audio enhancement and digital control data. It has an OLED display, dedicated function buttons, automatic transmitter programming through infrared and USB, and mic and line balanced inputs.



## ZAXCOM

Zaxcom offers robust digital transmitters and transceivers via its UHF TRX Series,

UHF receivers via QRX or RX Series, and even unique offerings such as its ZFR miniature field recorders. ■

*Strother Bullins is Technology Editor for NewBay Media's AV/Pro Audio Group.*

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# MIX REGIONAL: SOUTHWEST

## Evil Triplet, Nina Diaz, Beach House at Sonic Ranch in Tornillo, Texas



Godfrey with Evil Triplet

Things have been busy as usual over at Sonic Ranch. Engineer Charles Godfrey has been working with the band Evil Triplet from Austin. Rob Halverson is producing the project, with Godfrey engineering. Evil Triplet has been with Super Secret Records for just over a year now. Frontman Steve Marsh imagined doing their new record at Sonic Ranch in the Adobe Studio, utilizing its Neve 8088 and Studer A827 to make a record ideal for vinyl. "I looked at their website and was able to reserve my bucket list of vintage amps and instruments," he says. "Some of my favorites to use were the Gibson 61 Les Paul SG, the Ministry Marshall Super Lead, '59 Fender Deluxe, Komet 60, as well as an amazing '50s Watkins Dominator, which runs at 220 volts. We've also been able to accomplish some great overdubs using the synths on hand like the Dave Smith Prophet 12, Elka Synthex, and a Roland RE-301 Space Echo."

Producer Halverson says, "My buddy Thor Harris [Swans, Sheerwater] recommended we contact Charles [Godfrey] to engineer. Our pre-production notes enabled us to use the studio to its full extent with him at the helm. The performances captured through this rare Neve 8088 are sounding simply amazing. Plus, we were able to use the separate Echo House as a chamber. It is. Awesome." They plan to release the record summer 2016.

Engineer Manuel "Many" Calderon has been working on a variety of projects, including new material from dream-pop, Baltimore-based band Beach House. Calderon (Comanche Sound) was the engineer, and the band self-pro-



Nina Diaz with Manuel  
"Many" Calderon

duced in Studio A. While the project was tracked at a studio in Louisiana, it was mixed at Sonic Ranch. "We mixed 'in the box' for easy recall and used stereo compressors [Shadow Hills Limiter] to print the mixes," Calderon says. "They brought a combination of printed reverbs like Spring, Plates, and some UAD plug-in reverbs, as well. Tony [Rancich, owner of Sonic Ranch] purchased the PMC twotwo.8 monitors for this session and they sounded great, and we kept them for the Mix Room."

Calderon also worked with singer/guitarist Nina Diaz of Girl in a Coma on her solo project, scheduled for release this year. Calderon engineered and co-produced the project (with Diaz and David Garza).

The record was tracked at Adobe Studio using a Studer A827. "I used the Studer as master and Pro Tools as slave; that way, we could dump tracks into Pro Tools and keep using Pro Tools as playback but still record into the tape machine," Calderon says. "We used numerous mics on drums, but mainly Coles 4038; and we used the Dave Smith Tempest Drum Machine and Roland TR-909 for most drum loops."

They also used Roland Juno 106, Moog Voyager, and the New Mellotron for most keyboards; Royer R-121 mic for guitars, usually two amps at the same time, one with lots of effects, and the other cleaner; the RCA 77 for piano; a Neumann U 47, Shure SM7 and the RCA 77 for vocals, with AMS RMX16, Lexicon 480L, and Furman Rev1 for vocal effects. "It was mixed at the Mix Room, fully spread," Calderon says. "I did some parallel processing with [Thermionic] Culture Culture and [Standard-Audio] Level Ors. I used Shadow Hills for stereo bus, Chandler Zener Limiter 12413 for drums, Manley Variable Mu stereo compressor for vocals, [Inward Connections TSL-4] Vac Rac for keys, and Neve 2264 for guitars."

Calderon also engineered new material for Kid Parade, with producer Jean Baptiste Ayoub in the Mix Room; engineered for Jumbo in the Mix Room, with producer Camilo Froideval; produced and engineered for The Chamanas (Calderon's own band) in Adobe Studio; and engineered for Enjambre, with producer Phil Vinall (recording was done by another Sonic Ranch engineer, Jerry Ordoñez). ■



# SESSIONS: SOUTHWEST



Photo: Denise Trucello

French artist Zaho, Celine Dion and producer Humberto Gatica.

## STUDIO AT THE PALMS, LAS VEGAS

Celine Dion was in Studio X with producer Humberto Gatica and engineer Martin Nessi...Cindy Blackman was in Studio X with engineer Mark Everton Gray (Blackman also produced)...Nelly was in Studio Y with engineer Jason Patterson (Nelly also produced).

## BLUE ROCK STUDIOS, WIMBERLEY, TEXAS

Renowned West Coast surfer and artist Donavon Frankenreiter, along with bandmates Matt Grundy and Michael Duffy, recorded the new album *The Heart* with engineer Charlie Kramsky. They tracked and mixed 11 songs in 10 days. They also did a live 10-day session broadcast (continuous reality show of tracking and mixing the new record), with sponsors Sanuk Shoes, CF Martin and GoPro. Thousands of fans tuned in online. They also chatted live with Frankenreiter,



Rodney Bursiel Photography

Donavon Frankenreiter at Blue Rock Studios

entered the cover art contest, and some won prizes such as GoPro cameras and Martin guitars... Public Radio International, Marco Werman, Sarah Jarosz and Billy Crockett worked with engineer Patrick Conway on a live studio event (Crockett also produced). The event featured Werman, host of "The World"; Ira Flatow, host of "Science Friday"; Dr. John Fitzpatrick of Cornell University; and Mose Buchele of KUT radio in Austin. Guest artist Jarosz and artist/host Crockett performed. The event was tracked in front of a live studio audience.

## THE KITCHEN STUDIOS, DALLAS, TEXAS

The Kitchen Studios recently upgraded Studio A's control room, with the best of both analog and digital: Pro Tools HD and lots of vintage outboard equipment, including an LA-2A, Pultec EQ, and Thermionic Culture Phoenix tube compressor, as well as gear from Neve and API...The Broadsideers worked on their

## CRAS Graduates Win Grammys



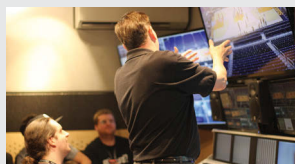
Justin Merrill at the Grammys.

The Conservatory of Recording Arts & Sciences (CRAS), based in Tempe, Ariz., recently announced that two of its graduates won Grammys for the 58th Grammy Awards: Sam Holland for his work as recording engineer on Album of the Year for Taylor Swift's *1989*, and Justin Merrill for his engineering work on Best Engineered Album, Classical, for the album *Ask Your Mama* by George Manahan & San Francisco Ballet Orchestra.

Thirteen graduates received credit for their work on 17 Grammy Award-winning categories. Overall, 38 CRAS graduates worked on numerous 2016 Grammy Award-nominated albums and songs across 36 categories.



Luca Pretesoli at CRAS



FOX Sports Audio Engineer Fred Aldous teaching students about mixing audio for basketball.

Additionally, on Feb. 19, CRAS' AES Student Chapter hosted Luca Pretesoli, Grammy Award-nominated engineer/producer, who spoke to students about his engineering and workflow. The entire event was streamed live; you can watch it on the CRAS YouTube channel.

CRAS students also recently learned about live broadcast audio for an NBA game with the Phoenix Suns. The school's Mobile Broadcast Unit received a live feed from FOX Sports AZ, in which students were able to mix the audio during the game.



Control Room A at The Kitchen Studios

self-titled album, which was produced and engineered by JP in Studio A...Cello recordings for the European release by Giancarlo were engineered by JP in Studio A...Up-and-coming teen star Oscar Delaughter's debut CD was produced and engineered by JP in Studio A...Underground hip-hop star Sam Lao and Blue, the Misfit have been recording their new releases in Studio B with OZ engineering...Muks Entertainment have been recording their new artist Oscar G in Studio B, with OZ producing and engineering the project.



George Nardo at Luna Recording

which will be sent to Capitol Mastering in Hollywood; tracking R&B singer Q for a CD release in May; producing—along with local musicians—a 24-song tribute CD of Brenda Lee's songs from the 1960s sung by Jon Nickell; producing a live 10-song CD/DVD with Bob Russell, the guitarist known for his work with Michael Bruce and Alice Cooper, which will be released in the latter part of 2016; producing, in conjunction with the *Arizona Daily Star's* videographer Nick Murray, live recordings and video of local artists, which are posted to the newspaper's Facebook page; recording singer/songwriter Erik Hanson's latest CD for release this summer; and producing Rapper PJ's first five-song EP, to be released this month.



J Slugg at The Saltmine

#### THE SALTMINES STUDIOS PHOENIX, ARIZ.

Charlie Puth stopped by The Saltmine's Studio A in March to work on a new single with engineer Kyle Colley...John Gray recorded Saints and the Hellions EP *Brave Words and Bloody Knuckles*...Vee Tha Rula recorded in Studio A with John Blaze, J Slugg, Judge Da Boss, Sincerely Collins and Nano...Studio owner/engineer Don Salter, Charles Beatty and Mary Brown recorded in Studios A, B and D...J Slugg recorded and mixed his new

LP for Master P's No Limit Records...Simply Three recorded with Gray in Studio A...Mr. B was with Gray mixing in Studio B...The Saltmine's Andre Nelson, Xzibit and Salter were in Studio B...Dr. Dre's talented Curtis Young was in Studio D...Jane N the Jungle recorded with Bryan Kuban and Andre Nelson in Studio A.



Gary Clark, Jr. at Arlyn Studios

*Jimmie* (Sony Legacy Recordings), with producer Buddy Cannon and engineers Steve Chadie, Jim De Blanc, Ace Otten and John Guess...Shawn Colvin worked on *Uncovered* (Concord Music Group), with producers Steuart Smith and Stewart Lerman (Lerman also engineered), engineers Steve Mazur and Sean Kelly, and assistant engineers Sciba and Holguin...Nick Valensi (The Strokes) was with co-producer/engineer Gus Oberg and assistant engineer Holguin...Reckless Kelly was with engineer Rob Matson and assistant engineers Sciba and Holguin (Reckless Kelly produced).



Surrounding Darryl "DMC" McDaniel are Juan Lopez (engineer), Caleb Contreras (engineer), Alphonso Lovelace (drummer), Erik Blam (tour manager), Kenny Olson (lead guitar), Matt Noveskey (bass) and Robert Sewell (head engineer).

played lead guitar for Kid Rock, to assist with guitar parts...Mike Love of The Beach Boys was with producer Michael Lloyd and engineer Sewell. They cut vocals and ran them through a Neumann U 67 mic with the Neve 1073 and no compression...Pentatonix worked with producers Thaddis, Kuk Harrell, Martin Johnson, Ed Boyer, Drew Pearson, and Ben Bram, as well as engineer Sewell. They used a Sony C-800 mic for the vocals...Blue October worked with producer Tim Palmer and engineers Sewell and Eric Holtz. The Orb was used specifically for drum sounds. The entire rhythm section was tracked live...Kaleo was in the studio with engineers Sewell and Contreras (Kaleo self-produced). The project was tracked through a Studer A827 2-inch. Besides a few overdubs and vocal takes, the entire project was tracked live. One of the band's songs was used on the HBO show *Vinyl*...Progger was with producer Ryan Donohoe and co-producer Matt Meli (Meli also engineered), and assistant engineer Charles Moon. They used every input on the SSL and almost every mic. Meli had to do on-the-fly automation by hand on the faders because the songs were so dynamic. To get a great snare tone, the transformer was taken out of a Shure SM57 mic and put on the snare.

#### ARLYN STUDIOS, AUSTIN

The studio recently built Studio B and combined its Neve and API consoles and updated Studio A...Gary Clark, Jr. worked on *The Story of Sonny Boy Slim* (Warner Bros.), with Bharath "Cheex" Ramanat and Jacob Sciba co-producing and co-engineering (Clark also co-produced). Joseph Holguin assisted...Willie Nelson and Merle Haggard worked on *Django and*

#### THE ORB RECORDING STUDIOS, AUSTIN

Darryl "DMC" McDaniel was with producer Matt Noveskey and engineer Robert Sewell, with Caleb Contreras assisting. All co-writing was done and tracked at Orb. Sewell was also the mixing engineer. On vocals they used a Neumann U 67 through a vintage Neve 1073 preamp, compressed with a UAD 1176 compressor. Noveskey reached out to old friend Kenny Olsen, who once



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# NEW HOME FOR KITCHEN SINK IN SANTA FE

BY LORI KENNEDY



Jono Manson at the new  
Audient ASP8024 console

The Kitchen Sink Recording Studio opened about 10 years ago, “in a rambling old adobe house north of the city of Santa Fe,” according to Jono Manson, studio owner/engineer. The studio had always been a work in progress, and while Manson outfitted it with all of the necessary equipment to make great recordings, at the end of 2015 he and his business partner, fellow engineer Tim Schmoyer, saw that a property—a former studio in downtown Santa Fe—had become available.

“Tim and I could not resist the opportunity,” Manson says. So they took over the property in October 2015, and by early November, the Kitchen Sink was in full swing.

With the exception of a few “dark” periods, the space had been a functioning studio for the better part of 30 years. “It was constructed the right way, from the ground up around 1989,” Manson says. “All of the rooms were built to exacting specifications. I had worked on quite a number of projects in this facility, both as a producer and session musician, in its former incarnation back in the mid-1990s.”

The new studio has a 650-square-foot live room with 21-foot ceilings and skylights. The two iso rooms—90 and 75 square feet, respectively—both have line of sight to the control room, the live room and to one another. “The real kicker is the control room, which is almost 400 square feet with 16-foot-high ceilings—and more skylights,” Manson says.

At the center of the studio is a new 36-channel Audient ASP8024 mixing console with Dual Layer Control. All of Manson’s outboard gear, including a nice complement of new and vintage preamps and dynamics, as well as his entire mic closet collected over the course of 20 years, made the move. A lot of great vintage amps and keyboards came “down the hill” with Manson, but the Kitchen Sink also acquired some gear from the former owner.

“We inherited a nice array of mics, including a fleet of Gefells and tasty old 414s, a great vintage U 47, and many other cool pieces, including a Hammond B3 and an Otari MX 80 and MTR 10, all of which are up and running and sounding great,” Manson says.

Apart from cosmetic work—replacing carpeting and painting, for example—most of the new construction was for the control room, where Manson and Schmoyer restored and/or replaced many of the acoustic treatments and paneling. “We have additional construction plans for the near future, including an expanded and remodeled front lounge area, but thankfully for us the studio space was largely ready to go,” Manson says. “We were able to focus the bulk of our resources and energy on gear and rewiring the entire joint.”

Manson and Schmoyer are thrilled with the Kitchen Sink’s new home, and in particular, the new studio’s workflow. “I was always able to make really good-sounding recordings and mixes in my old place, but the distance between point A and point B is much shorter in the new joint,” Manson says. “Because of the fact that the tracking room sounds so fantastic, and the rig is so well-designed and streamlined, I have to do a whole lot less wrangling to get things sounding great right out of the gate.

“My old studio was beautiful in that it was the down-home situation; a rambling old country house that was converted into a studio,” Manson continues. “And the live room really sounded quite good. The new facility, however, is the only studio for miles around that was built from the ground-up as such. The original owner spared no expense in ensuring that everything was built the right way, and this becomes evident every time I hit Playback.”

Manson landed his first job as an assistant engineer in a large commercial studio in his native New York City in 1979, when he was 19. He set up his first studio—all analog—in the mid-’80s. This studio was, much to the chagrin of his downstairs neighbors, in an apartment he was renting in Brooklyn. Manson eventually made his way to New Mexico to set up shop.

Schmoyer is an accomplished audio engineer in his own right, with a strong background in live sound and location recording. For many years, Schmoyer has been working out of his own home-grown studio in Boston and doing location work, but he has not had a real tracking room of his own until now. Schmoyer and his family are making the move to New Mexico this month.

Manson says that while having a great rig and a great-sounding tracking room, along with a nice selection of vintage microphones, amps and keyboards, is ideal, the most important aspect of the studio is the human element.

“Being a great producer or engineer goes way beyond any technical knowledge or mastery of a given skill set,” Manson says. “The key is to create an environment in which the artist feels comfortable, and in which their best performances can be elicited, because performance and feel are everything, and without them, you have nothing. The most pristine sound or killer tones in the world can’t change that. People skills, or console-side manner, if you will, are of the utmost importance. We have gone to great lengths to maintain an environment that—although the studio is quite impressive—remains down home and inviting. A place where people can relax and create.” ■





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# Tech // new products



## GROVE HILL AUDIO LIVERPOOL COMPRESSOR

### Reinvented Beatles-Era Processor

The all-tube, feedback, variable mu compressor from Grove Hill Audio (\$1,495) was made famous by its use on Beatles albums at Abbey Road Studios. Inspired by the original Altec 436 compressor altered by EMI engineers, the Liverpool offers an improved circuit with added features. At the heart of the device is a dual-triode 6BC8 remote cutoff, gain-reduction tube. Other features include custom-wound input and output transformers and a solid-state power supply offering low noise and stability even at 30dB of gain reduction.



## JOEY STURGIS TONES FINALITY LIMITER

### Plug-in Based Mix Control

Finality is a plug-in limiter that comes in a full-featured Advanced (\$89) or a Lite version (\$59). Controls include hard and soft modes describing the character of the transients, Aggro, which alters the release envelope to be more favorable to drums, a Color button for adding saturation, and a Mix control for parallel processing. Other features include variable look-ahead, switchable sidechain HPF, and Auto Gain for setting makeup volume.



## FOCUSRITE RED 4PRE

### Multichannel I/O with 'Air' and DigiLink

The Red 4Pre is a 26x32 interface with four preamps, Thunderbolt 2 connectivity and dual DigiLink connectors for use with Pro Tools | HD and HDX systems. The Red 4Pre also features 24-bit/192kHz, with more than 118dB dynamic range A/D and 121dB D/A, as well as a dual-port Dante card pre-installed for networking over Ethernet. The preamps can be digitally controlled via Focusrite Control software and also includes an "Air" function modeling the transformer-based mic preamps of the ISA range. When "Air" is enabled, the microphone impedance is set to 2.1kΩ, and the frequency response curve is given a subtle mid-high boost, all in the analog domain.



## MOJAVE MA-50 MICROPHONE

### Affordable Transformerless Transducer

The MA-50 from designer David Royer (\$445) uses the same capsule as Mojave's MA-200 and MA-201f. It promises a fast transient response and handling capability up to 140 dB. Features include a large 3-micron capsule, fixed-cardioid polar pattern, and low self-noise. The mic ships in a sturdy, foam-lined carrying case with a pro-quality shock-mount.

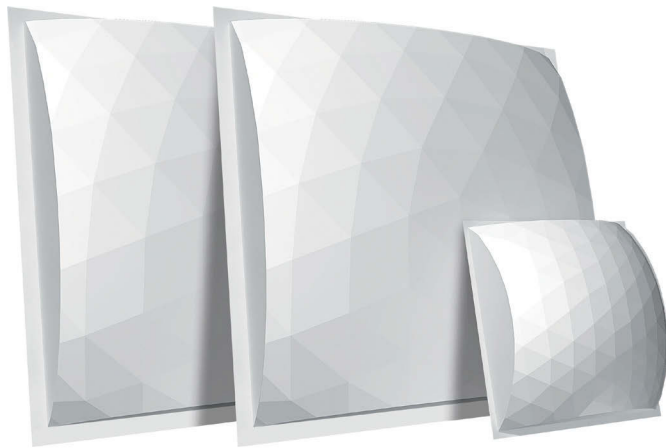




## FOSTEX TR SERIES HEADPHONES

### Three New Head-Worn Monitors

Three new headphones from Fostex (\$199) were designed from the ground-up featuring a new 40mm driver, specially tuned housings and stated frequency response from 5 Hz to 35 kHz. The TR-70 has an open design; the TR-80 has a fully closed-back, and the TR-90 has a semi-open design. Each model is available in an 80-ohm version for studio and production use, and a 250-ohm version for studio and critical listening. Each TR Series headphone comes standard with two detachable cables (coiled and straight), a 1/4-inch to 3.5mm adapter and both regular and extra-thick ear pads.



## AURALEX GEOFUSOR ACOUSTIC TREATMENT

### Diffusion Without Energy Loss

The GeoFusor from Auralex is a versatile sound diffuser that addresses standing waves and flutter echo without removing acoustic energy. The GeoFusor's shape offers smooth, even diffusion and allows back filling with absorptive material for enhanced low-end control. Units can be mounted on walls or ceilings and are offered in two sizes (1x1 foot and 2x2 feet). The 2x2 GeoFusor is sized to fit in ceiling grids and is offered in fire-rated and non-fire-rated variations. The GeoFusor's contemporary aesthetic complements residential or commercial environments, and its complementary design permits arraying for acoustical and design purposes.



## HARRISON MIXBUS VERSION 3.1

### Upgrade Brings Improved GUI and More

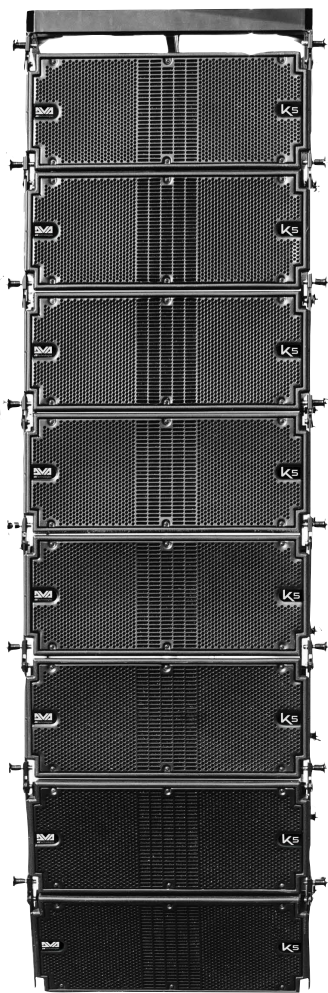
Mixbus Version 3.1 from Harrison (\$79) now allows more user control over the interface with the ability to scale the channel strips to match your monitor size. Other features include support for three types of external hardware control surfaces. Generic MIDI devices can use "MIDI Learn" to assign MIDI controls to onscreen knobs, Mackie control protocol is provided for motorized fader controllers, and the Mixbus channel strip EQ, compressor, and eight Mixbus sends. Lastly, OSC (Open Source Control) protocol supports Ethernet-based wireless tablet controllers such as TouchOSC and Lemur for iOS and Android.

## SPL DES DUAL-BAND DE-ESSER

### Ported From Original Model 9629



SPL has announced that its original Model 9629 Auto Dynamic de-Esser is now available as a single-slot, dual control 500 Series module for \$529. De-S features include sibilance reduction by phase cancellation, 2-band processing (Hi-S and Lo-S), De-S intensity LED display, male/female voice selection, on/bypass switch, and signal present LED.



## DB TECHNOLOGIES DVA K5

### Three-Way Active Line Array

The new K5 active line array from DB Technologies (priced per configuration) features a Class-D 500-watt RMS Digipro G3 digital amplifier. The DVA K5 is capable of reaching up to 129 dB SPL and offers technological upgrades partially derived from the most recent model of the series, the DVA T8. The line array module features 2.25-inch drivers, a 6-inch neodymium midrange and an 8-inch neodymium woofer. An advanced DSP user interface allows precise system tuning—a double rotary encoder provides a separate tuning for LF correction (coupling) and MF/HF correction (high-angle midrange loss and air absorption compensation due to throw distance). The module's electronics and components are housed in a sturdy polypropylene box, reinforced with an internal anti-vibration metal structure that drastically reduces any resonance.

# New Sound Reinforcement Products



## ALLEN & HEATH ZEDI-10 AND ZEDI-10FX

### Compact Analog Interface/Mixers

The new ZEDi models from Allen & Heath combine a compact mixer, a 24-bit/96kHz 4x4 USB interface, and onboard effects (10FX). The units offer flexible source routing options and are bundled with Steinberg

Cubase LE music production software and the Cubasis LE mobile music production app. The ZEDi-10 (\$279) and ZEDi-10FX (\$349) feature four mono channels with separate XLR and TRS jack sockets, one stereo channel and a second stereo input for reverb returns or playback. The mono channels include DI inputs, 3-band EQ, 60mm smooth travel master mix faders, FX/aux/monitor and headphone outputs, channel monitoring and 48-volt phantom power.



## AUDIX PERFORMANCE SERIES WIRELESS SYSTEMS

### Two Choices Offer a Variety of Features

The Audix Performance Series is available in two performance levels: the 40 Series and 60 Series (priced per configuration). The 40 Series is a diversity system with 32 MHz of spectrum. It features 33 percent more frequencies than typical 24MHz systems in the same price/performance range. There are 106 pre-coordinated frequencies available that will take into account the region and number of other systems in use. A total of eight systems (conservatively) can be used simultaneously. The 60 Series is a dual-channel system with true diversity receivers and 64 MHz of extended spectrum. There are 207 pre-coordinated frequencies available for auto scan and sync purposes. Also, there are 2,560 individual frequencies available for manual tuning. A total of 16 systems (conservatively) can be used simultaneously. Like the 40 Series, dual-channel models are available for the 60 Series.



## NEXO AMPS AND CONTROLLER

### Install and Touring Power Players

The NEXO DTDAMP4x0.7 (\$TBA) and DTDAMP4x1.3 (\$TBA) power amps will partner with the new DTD Controller (\$1,100 to \$1,349) to create compact, lightweight and low-cost powering solutions for the installation

and touring SR markets. The new NEXO DTDAMP4x0.7 and DTDAMP4x1.3 4-channel, single-rackspace amps are available in 700 and 1,300-watt models (4x4 ohms), each weighing in at 16.5 pounds. Both models offer a high-efficiency switch mode power supply. Channels can be independently bridged two by two. Four inputs are available via XLR with four outputs on NL4. The DTD Controller features two versions, one for touring and one for installation, each available with the option to add a Dante input. Both touring and install versions are housed in the same low-depth rackmount case with a universal power supply.





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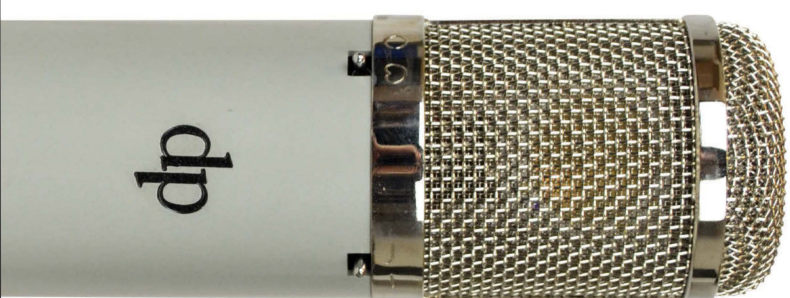
## AEA N8

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the highest quality



## TELEFUNKEN U47

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been the mic every great  
singer deserves



# Tech // reviews

## 4 HEADPHONES, 4 APPROACHES

Blue Mo-Fi, Audeze EL-8 & ATH-M70x Headphones, UE Capitol Remastered IEMs

**P**ersonal and professional head-worn listening devices are the hottest product category in audio. Scores of companies, from Behringer to Bose to Beats, compete on the consumer side while dozens of other manufacturers more familiar to audio pros vie for the attention of the musicians and engineers. The four units tested here fall into the latter category. They are the Blue Mo-Fi, Audeze EL-8, and Audio-Technica ATH-M70x headphones, and the UE Capitol Remastered in-ear-monitors just released at Winter NAMM. Each brings its unique spin to your ears, and because of design differences, this review is not a one-to-one comparison. Each product is evaluated for comfort, fit, sound transference when the cable, headband, and ear cups are touched, weight, overall sound quality and, most important, how they can be trusted for critical listening.

My listening sources were raw WAV files cut in sessions at Blackbird Studio and professionally produced and mastered tracks. The playback systems were both personal and professional. On the personal side, I played finished tracks from my Apple 15-inch MacBook Pro. For the best possible quality, I listened only to Apple Lossless-encoded tracks through Audirvana Plus software, which can be configured to stop the Apple OS X background services potentially interfering with sound quality, and operates using 64-bit precision to eliminate information loss due to rounding errors. Audirvana Plus, without a doubt, beats iTunes playback quality. I also turned off the computer's WiFi and Bluetooth to avoid any latency and other oddities. The last stop out of the software was an Emotiva Big Ego USB digital-to-analog converter. The Big Ego is an impressive DAC that is capable of playing back files up to 384 kHz, through the line, headphone and Toslink digital outputs. There are three filter options on the Big Ego; I set the unit to F1, which is a setting commonly used by other DACs.

On the pro side, I auditioned session tracks in Blackbird's Studio 1 using Focal Trio 6Be monitors fed from Pro Tools, Avid HD I/O converters, and the headphone output of a Dan-

gerous Monitor ST. After listening to the tracks from the Focals, I'd A/B them with the headphones to see how they stacked up against a full-range studio monitor as a reference.

### BLUE MO-FI

Blue has been defining pro audio style for more than 20 years, and the Mo-Fi elegantly carries the tradition to headphones. Others have tried to bridge the gap between consumer and pro in the same product but none as successfully as Mo-Fi. It comes with two cables: a longer one with a ¼-inch plug for studio use, and a shorter version with a Play/Pause and Volume control near the headphone end. Both cables offer a sturdy and long plug that fits firmly into the bottom of the left ear cup. Also included is a hearty travel bag with a compartment for cables and a magnetic clasp that seals the top flap.

What sets Mo-Fi apart is a unique headband design that keeps the ear cups parallel and perfectly situated to the wearer/listener. The overall experience when wearing the Mo-Fi is that you are here to listen. They are very comfortable with generous padding on the ear cups that provide a significant amount of isolation from outside noise.

The weight is average at 16.4 ounces, and there is an acceptable amount of sound transference when the cable, headband and ear cups are touched. Extra features include a three-way rotary switch for passive, active and active-plus-bass operation,



Blue Mo-Fi headphones

### PRODUCT SUMMARY

**COMPANY:** Blue  
**PRODUCT:** Mo-Fi  
**WEBSITE:** blue-headphones.com  
**PRICE:** \$349.99  
**PROS:** Sonically stellar performance. Comfortable, well built. Great carrying bag.  
**CONS:** Switching from Passive to Active mode may cause dangerous exposure to SPL.



and confidence LEDs under the logos that show that the active modes are engaged and the battery is charged. The electronics are only active when the device is worn to save battery life. The Mo-Fi can be fully charged in about three hours and used for 12 hours before needing a visit to your local USB outlet.

I started the listening tests in passive mode, and the range of these headphones is impressive. While not completely flat, there is a musical and subtle bump in the lower midrange frequencies that make drums and bass sound punchy. This is not a “hyped” sound but an acceptable amount of forwardness in this range. The high- and low-end frequencies are as extended as you’d expect in a headphone and evenly balanced. Like all transducers, there is a learning period where your ears decide what can be trusted, but after spending some quality time with the product, I can say that listening to the Mo-Fi would be an excellent way to check a mix before printing.

Jumping to the Active mode provides quite a boost in level, and the user should be wary. The first level Active mode is excellent, taking the same quality up in volume without changing the balance. This would be an excellent way to listen from a portable source where you could bring down the volume of your smartphone, saving the battery and relying on the Mo-Fi to do the heavy lifting. The Active Plus was way overhyped in the low end and more in line with popular consumer headphones.

The Mo-Fis are easy to like; they are musical, give a full-range listening experience, and offer quality and extras unheard of in this price range. Their isolation and quality would make them an able studio headphone in the control room and for tracking and overdubs, while they also excel as a portable listening device for personal use. It’s hard to find a headphone that wears this many hats in such comfort and style, and all so very well. As with many of their mics, preamps and other products over the years, Blue has made a statement with the Mo-Fi that should wake up the category.

#### AUDIO-TECHNICA ATH-M70X

The ATH-M70x is incredibly light (weighing 9.9 ounces) and comfortable. The soft ear cups fit nicely over the ear, and the top of the inside of the headband is wide and well padded. The cable locks into the bottom of the left transducer with a twist—a nice touch. The product ships with three cables: coiled and straight that stretch to 9.8 feet, and a third for portable listening where you only need to stretch between the headphones and a pocket or backpack (3 feet, 9 inches). Also included is a sturdy and portable zipper case that houses the headphones, cables and included screw-on ¼-inch adapter.

The listening experience when wearing



Audio-Technica ATH-M70x headphones

these headphones takes a bit of getting used to. The frequency balance of the ATH-M70x leans more toward a headphone that would be used for overdubs and tracking with a full band, and nothing like a full-range experience that some other headphones offer. The upper-midrange frequencies are very much forward, overshadowing the midrange and low frequencies. While not unpleasant, it’s a shock to jump between speakers and these headphones.

Some of my listening sessions were tracks recorded at 96 kHz with artist John Stoddart and a full band comprising drums, bass, keyboards, guitar, horns, and lead and background vocals. Wanting to get an idea of how the M70x stacked up against a full-range system, I A/B’d them against Focal Trio 6Be monitors, which can jump between a full-range three-way to a two-way system with more limited bandwidth. The M70x provided a starkly different image than the speakers in both two-way and three-way mode, with the upper midrange and highs coming in much hotter. While this may be a way to expose what’s going on above 2 kHz, it is not something I would trust for mixing.

That’s not to say the ATH-M70x doesn’t have its niche. These would excel as a studio headphone for tracking and overdubs where pocket-defining elements like a click track, hi-hat and snare drum would stand out even with a full band playing in the same room. If you’re looking for a personal headphone for studio use, the ATH-M70x may just be the one.

#### PRODUCT SUMMARY

**COMPANY:** Audio Technica  
**PRODUCT:** ATH-M70x  
**WEBSITE:** www.audio-technica.com  
**PRICE:** \$299 (street)  
**PROS:** Forward upper-midrange positions these as an excellent studio-tracking headphone.  
**CONS:** Over-accentuated top end would be hard to trust for critical listening.



Audeze EL-8 headphones

#### AUDEZE EL-8

The open-back EL-8 headphones from Audeze bring a lot of specialized technology to the category. The 100mm Planar Magnetic Transducers are based around the company’s Fluxor tech-

#### PRODUCT SUMMARY

**COMPANY:** Audeze  
**PRODUCT:** EL-8  
**WEBSITE:** www.audeze.com  
**PRICE:** \$699  
**PROS:** Flat frequency response. Speaker-like listening experience.  
**CONS:** No portable carrying case.

nology, which doubles the flux density of the highest-grade neodymium magnetic circuits. This both reduces weight (16.2 ounces) and increases efficiency for use with portable devices.

The Uniforce diaphragm uses variable trace widths in the voice-coil that capture variations in the magnetic field within the magnetic gaps by equalizing the forces of the individual traces, creating a uniform driving force across the diaphragm surface. Also in play are Fazor, an acoustical element positioned on either side of the magnetic structure that extends frequency response, and improves high-end extension, phase and imaging, while reducing distortion. All this tech-talk is not just lip service; the EL-8s are stunning both sonically and ergonomically.

You have to wear the EL-8 to appreciate how they feel. Oversized ear cups fit well, giving you the experience of having your ear fully exposed while the transducer hovers just outside. If you've never experienced an open-back headphone, it brings a more speaker-like listening experience. A standard 3.5mm cable and ¼-inch TS adapter come in the box, but other options may be ordered including a balanced cable for Astell & Kern and other high-end players, or a balanced cable for PONO and Sony PHA-3. No matter the cable, the other end terminates to a left and right adapter that fits into the bottom of each ear cup. It all comes in a sturdy box with a magnetic clasp lid. Also included is a basic travel bag that closes with two locking drawstrings.

I first listened to Dori Caymmi's "Amazon River" from Brazilian Serenata mixed by Mick Guzauski. I was the assistant on this project and know the work intimately from the ground up. Mick's work here is some of his best. The band comprises vocals, strings, electric bass, and Dori's nylon string guitar, so the range of instruments covers top to bottom very well. The Audeze EL-8 brilliantly rendered the full spectrum of the mix, especially at the extreme high end. Having the open backs makes for a more relaxed experience than closed headphones, which can suffer from SPL buildup inside the enclosure at higher levels. The EL-8s were well balanced across the spectrum, with stunning low end and the midrange tucked in at the perfect level. These are high-end 'phones and are the most like a speaker that I've experienced, with nothing out of place—very flat with no hype.

Next I listened to tracks from the Pro Tools rig and A/B compared them to the Focal Trio 6Be monitors. The Focals had more extension at the low and high ends with the front port and beryllium tweeters providing high-resolution out to the edges, but the mix translated well when I flipped over to the EL-8s, which carried a similar balance but just not the lower and higher octaves.

The EL-8s are eminently trustworthy headphones, and I would not hesitate to use them to make final mix decisions: Their flat response, weight, comfort, open-back design and size of the ear cups make wearing them over long periods effortless and never tiring. If you're looking for an excellent set of headphones for pro or personal use and can afford it, these are the ones.



## PRODUCT SUMMARY

**COMPANY:** Ultimate Ears  
**PRODUCT:** Pro Reference Remastered  
**WEBSITE:** pro.ultimateears.com  
**PRICE:** \$999  
**PROS:** Accurate, full-range listening experience.  
**CONS:** Price may be out of reach for some.

## ULTIMATE EARS PRO REFERENCE REMASTERED IEM

In-ear monitors have come a long way in a short period. Many new companies have popped up in recent years offering

a range of custom or one-size-fits-all transducers for both personal and professional use.

Ultimate Ears, owned by Logitech, has a range of IEMs with the company's Reference Series at the top. It was created in collaboration with the engineers at Capitol Studios in Hollywood, which provided feedback on the designs during the development phase. The first in the series debuted in 2014, and they were an excellent product.

The latest version just released at Winter NAMM is the Pro Reference Remastered (UEPRR). They come in a satin lined box that holds a hockey puck-sized metal container with the transducers, integral cable, a cleaning tool and a 3.5mm-to-¼-inch adapter. Each unit has a unique number that is imprinted inside the lid of the container with instructions on how to return them to the owner if found, and collect a reward (no kidding).

After hearing both the original and UEPRR, the latter is a sizable leap in quality, and according to UE's Vincent Liu, it's all about the tech. Recent developments in specialized tooling allowed UE to be able to control the diameter of the sound channel down to .1 mm. The UEPRR also employs a balanced armature driver that pushes the upper range of the monitors above 18 kHz.

I'm a cyclist, and wearing IEMs is much like wearing cleats on a road bike. There's a period when being locked into close proximity with the machine causes a bit of a panic. But once you get used to the intimacy afforded by IEMs (or cleats), you'll never go back or doubt them again. On first listen, I was stunned at how accurate the UEPRRs were at both the bottom and top end of the frequency range. Where I had to EQ the original UE reference monitors to get them where I liked them, I needed none of that with PRRs. Everything is in place, with a slight and musical bump at the bottom end, which is surprising since balanced armatures don't reproduce low-end as well as a dynamic transducer that moves more air.

I listened to familiar material using both systems mentioned in the opening paragraph and was impressed every time. The realism and even frequency response were stunning. But what shines is what IEMs do best: They give you the best perspective on panning and stereo image of any head-worn transducer. It's all about the isolation (-26 dB), lack of room interaction, and the fact that the drivers are in your ear, not outside the pinna.

There's no doubt that the UE Pro Reference Remastered monitors are expensive, more than some speakers. But if you're looking for the best there is in an IEM that brings you an unparalleled and trustworthy listening experience, you should consider the UEPRR at the top of your list. ■





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## SONICSMITHS THE FOUNDRY

Virtual Instrument Takes Fresh Approach to Sound Design

**S**onicsmiths thinks presets are so yesterday. The company's new virtual instrument, The Foundry, uses parameter-value randomization instead of fixed presets to create an almost infinite number of unique four-voice patches (four discrete multi-samples mixed together). Specify the type of sound you want—for instance, a mysterious pad or pulsing horror patch—and The Foundry will dish out something different every time. Extremely extensive editing capabilities let you alter the sound much further.

The Foundry is a Kontakt Instrument, compatible with Native Instruments Kontakt 5.3.1 or higher and the free Kontakt Player 5. It comes with more than 19 GB of sample content (15,000-plus samples). I reviewed Version 1.0 of the VI in Digital Performer 9.01 (DP), running OS X 10.9.5 on an 8-core Mac Pro.

### DESCRIBE IT TO CREATE IT

The Foundry's GUI provides access to different sets of controls in discrete windows. The window for the AARE, or Adjective Assignable Randomizing Engine, is where you create new patches from scratch (see Fig. 1). It includes 25 buttons for selecting voice types (Pitched, Non-Pitched, Bed/Pad, Rhythmic, FX/Hit, Texture, Simple and Complex) and adjectives (Dark, Bright, Breathly, Metallic, Clean, Distorted, Pulsing and so on) that determine the qualities of the sound The Foundry will generate. Every time you click on the Randomize button in the AARE window, parameter values are changed—constrained by your selections—generating a new four-voice patch. Roughly 20 levels of Undo and Redo let you discard and reinstate the random changes made to the sound in the AARE window. (They won't undo any tweaks made elsewhere in the GUI.) Keep clicking on the Randomize button until the sound that's created is perfect, or close enough to what you want that editing will get you there.

The Foundry provides numerous effects you can apply independently to each of its four voices: filters, "bodies" (convolution reverb), distortion, compression, rotor (Leslie speaker simulation),



Figure 1: Randomization is The Foundry's main tool for creating unique sounds. In the AARE window shown here, you select the kind of sound you want by clicking on descriptors.

tempo-synched delay, chorus, phaser, flanger, panner, granular synthesis and a 16-step sequencer. The sequencer's three modes generate notes from your base note or notes, arpeggiate inputted chords, and create rhythmic patterns useful for non-pitched percussion samples. Set the sequencer's direction (forward, backward, bi-directional or random), number of steps, step duration (for example, 16th note) and shuffle amount. Then adjust each step's note value, octave range, mute status, velocity, pan, glide status (portamento on or off), and gate (note duration). You can also make one or more notes stutter. A global control adjusts the glide time for all voices at once. Excellent sequencer templates do the heavy lifting for you, creating

factory-programmed patterns in a heartbeat.

Six modulators (three LFOs and three envelopes) can be patched to filters, pitch, amplitude and panning. You can bypass all effects and/or all modulators at once using menu selections in the Templates window. The Templates window also provides shortcuts for batch-processing all voices at once in other ways.

In the Performance window, you can toggle individual voices and their assigned effects—for which parameters can also be randomized—on and off, use an XY pad to morph the sound, and lock an individual voice so its parameters can't be randomized. The XY pad comprises four quadrants, each of which is dedicated to playback of one of the four voices that comprise your composite patch. Drag a node around the pad (using your mouse or MIDI continuous controllers) to create a different mix balance of the four voices. Controls for the XY pad let you record and play back your mouse movements; you can trigger playback with a MIDI Note On event,

### TRY THIS

If you're not getting the results you want by randomizing voices, try loading patches the conventional way: In the Performance window for each voice, use the Manual Sound Selection pop-up menus to first select the type of sound you want (for example, pitched texture) and then one of the scores of specific patches in that category (for example, Glistening Glass Beam).



and playback can be synched to your host's tempo so that it cycles every bar.

The Performance window provides access to a window for each voice in which you can edit its on/off status, volume, and AHDSR and MIDI parameter values. You can also set whether randomization will affect only the voice and not its FX, LFO or sequencer settings.

### CASTING SOUNDS

The Foundry is best used for cinematic sound design and has relatively few uses for music production, as its library all but omits conventional multi-samples of instruments like guitar and piano. Non-Pitched, Rhythmic voice types include metallic hits, pillowy bombs, computer-like bleeps and burpy synth noises. Clicking through various templates for the outstanding step sequencer with these sounds randomly loaded, I very quickly produced an alien dance groove that would be perfect for an intergalactic barroom scene in a Star Wars sequel. What would've normally taken me a couple hours to produce took only two minutes.

The Foundry also excelled at creating distorted and pulsing textures and hits for horror and sci-fi flicks. Using the step sequencer, I could create driving rhythmic patterns of disturbing sounds perfect for cinematic action sequences.

Once I got a patch I liked, I could morph between its four voices in real time by dragging my mouse around the XY pad. After recording my mouse movements, I synchronized the pad to DP's tempo so that the movements would play back from start to finish over the course of one bar and repeat for every successive bar. This worked especially well on polyphonic pitched patches, constantly shifting the timbre of the composite sound. I only wished I could sync the pad's action so that one cycle would elapse over the course of several bars.

AARE randomization produced poor—often thin- and harsh-sound-

## PRODUCT SUMMARY

**COMPANY:** Sonicsmiths

**PRODUCT:** The Foundry

**WEBSITE:** bigfishaudio.com

**PRICE:** \$299 MSRP

**PROS:** Extensive sample library excels particularly at non-pitched sound design for thriller, horror and sci-fi flicks. Includes excellent step sequencer and XY morph pad. Discrete signal processing for each voice.

**CONS:** Randomization of pitched beds and pads often produces thin- and harsh-sounding results. Inadequate documentation. GUI navigation is very unintuitive. Slightly buggy.

ing—results for pitched beds and pads; I frequently found myself weeding out voices I didn't like. Fortunately, you don't have to use The Foundry's randomizing engine if you don't want to (see the "Try This" sidebar).

The Foundry is somewhat buggy. The sequencer would often be arbitrarily activated even though I had bypassed it for all voices and locked it out of the randomization process. Parts of the sequencer's control set would also sometimes be arbitrarily superimposed on other windows.

I found navigation among windows in the GUI to be very unintuitive, with access to some windows granted only by clicking through two other windows. The 15-page operation manual is extremely short on details and inaccurate in places; it directs users to Sonicsmith's YouTube channel

for in-depth video tutorials of The Foundry's operation. The videos are generally very informative and subdivided into chapters to hasten access to specific information, but they are nevertheless no substitute for comprehensive, indexed written documentation when you are under the gun and offline. The GUI could also use pop-up help for its various controls.

The Foundry excels particularly at designing non-pitched sounds and special effects and at quickly creating intricate rhythmic sequences for them. The unintuitive and cumbersome GUI and inconvenient documentation require that you fully learn and then keep using this instrument—walk away from it for a month, and you'll likely be scratching your head when you return. But for the film sound designer looking for something delightfully twisted to add to the toolbox, the benefits are well worth the tradeoffs. ■

Mix contributing editor Michael Cooper is a recording, mix, mastering and post-production engineer and the owner of Michael Cooper Recording in Sisters, Ore.

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## PRESONUS R65 MONITORS

Ribbon Tweeter, Kevlar Woofer and Class-D Amps

**P**reSonus recently entered the studio monitor game, debuting with an impressive coaxial two-way called the Sceptre. A newer addition to its monitor line is the R Series, which includes the R80 and R65. Both are two-way monitors featuring AMT ribbon tweeters and Kevlar woofers. Both the R80 and R65 use the Air Motion Transformer patented by Dr. Oskar Heil in 1972. Other companies use this respected ribbon design, including ADAM and EmotivaPro.

The AMT tweeter is paired with a 6.5-inch Kevlar woofer in the case of the R65, and an 8-inch for the R80. The bi-amped design features a Class-D power amp for each driver. The R65 crosses over at 2.7 kHz, and the R80 crosses over at 2.6 kHz. A flat, trapezoidal bass port appears on the front of each model's cabinet. The cabinet size is on par with other offerings having similarly-sized components.

### AMENITIES

The back panel features a healthy complement of connections and controls. Each model offers balanced XLR and ¼-inch TRS connectivity, with an unbalanced RCA option as well. There is no stereo linking connection, and given the fact that the volume control is on the back panel, the clear intention is to match the level of each speaker and use a monitor controller for overall master volume.

The Acoustic Tuning controls were surprisingly effective at tailoring the sound of the R65s to a room. I spent some time with the monitors in a well-treated studio where they sat on stands in free space. In this case, rolling with a flat setting performed satisfactorily. However, I also spent a lot of time with them in my "Studio B," which has limited acoustic treatment. Here, the monitors sat on recoil stabilizers, on a desk, inches from a wall. In this case, the tuning controls were certainly welcome.

Each of the three EQ controls—Acoustic Space, HF Driver, and HP Filter—has a single toggle button for switching between four different modes. An LED indicates the mode selected within each of the control choices. The highpass filter is available in



The R65 offers EQ including a HPF switchable to 60 Hz, 80 Hz or 100 Hz.

a flat setting, or 60 Hz, 80 Hz or 100 Hz. Another is a level control for the tweeter, offering no boost or cut, +1 dB boost, -1 dB cut, or -4 dB cut. And the "acoustic space" control is a low-frequency EQ control. It seems to be a shelf positioned at 250 Hz, which can be bypassed or provide a -1.5dB, -3dB or 6dB cut. This control is specifically designed to counteract the bass buildup that results from placing the monitors too close to a wall.

### IN USE

From the time I first fired up the R65s, they had a very pleasant sound. Straight out of the box, the bottom end was massive. The midrange was very clear, and the stereo image was broad, deep and very detailed. True to the expectations set by other ribbon tweeters, the top end was crisp and defined while having a very natural, realistic smoothness. When listening to

acoustically recorded instruments, there was a real sense that the players were right in front of you.

I started out just trying to get to know the R65s and spent quite a lot of time just listening to music. Given the wide horizontal dispersion of the tweeter elements, I was able to walk around and move far beyond the sweet spot while still experiencing a generous amount of detail in the top end, all while maintaining robust bottom end. I ran them with all of the equalization settings flat for a long time waiting to hear a change as they broke it, but it never happened. They never sounded tight or lacking in bottom end in the first place, so this was by no means a disappointment.

### ROOM CORRECTION

When I eventually started tweaking the equalization controls, I

### TRY THIS

When mixing, it is a good idea to listen at an average volume of 78- to 85dB SPL, depending on the size of the space and the proximity of the monitors to your listening position. That said, listening at much lower volumes could reveal issues with the balance of fundamental mix elements. Likewise, blasting the mix may change your perception of the midrange, and reveal the need to make changes. Monitors like the R65s stay very clear with negligible distortion even at high volumes. Make sure to test that when shopping for monitors.



found that the Acoustic Space control made a significant, positive difference. Dropping the bottom end by -1.5 dB helped in balancing out the overall frequency response—the low end was not lost; it was just aligned with the other frequencies. Many other monitors offering equalization for room correction have come up short in this regard. Either they are ineffective in treating the low-end effects of difficult placement, or they compromise the bottom end in doing so. I was pleased with the R65's ability to flatten itself out.

Listening at a lower level, the -1.5dB drop seemed very effective. At higher volumes, dropping the bass to -3.0 dB seemed to be more appropriate. That said, the fact that those controls were on the back of the cabinets proved to be a bit of a nuisance. I had to tip them forward to access these controls, creating a break in continuity when A/B'ing settings.

Any music seemed to take well to these speakers. When listening to electronically driven tracks, the bass was punchy and solid, and the complexities of the synth-based sound field were fully exposed. Listening to chaotic jazz arrangements, everything stayed clear, without muddying up, and the positioning of players in the room came across perfectly. Classic rock sounded great as the low-midrange warmth of vintage circuits and the enhanced harmonic structure in their top end shone through. I could listen to any music for hours without feeling strained.

## PRODUCT SUMMARY

**COMPANY:** PreSonus

**PRODUCT:** R65 Monitor

**WEBSITE:** [www.presonus.com](http://www.presonus.com)

**PRICE:** \$399.95 (street)

**PROS:** Great midrange clarity. Full bottom end. Effective room correction.

**CONS:** Slightly less airy than higher-end ribbon tweeter models.

## MIXING

I used the R65s to mix an alt-country song featuring a lot of layers of different acoustic and textured electric guitars, as well as electric bass, other stringed instruments, and drums and vocals. The monitors laid out a fantastic stereo canvas upon which all of these elements could find a place. EQ adjustments from familiar plug-ins translated well to the monitors to the point that I was confident in the feedback that they provided.

Kick and electric bass were the foundations of the bottom end, and when they appeared to be sitting correctly, I double-checked the mix on a tried-and-true pair of headphones. The headphones seemed to confirm that the bottom end according to the R65s was appropriate.

Taking the mix to a high-end pair of monitors for mastering, I was very impressed with the result. There were no significant bumps or holes in the overall frequency spectrum. The center was solid while there was an exciting stereo field playing on the sides. The same mix also sounded great in the worst-case scenario, like phone and laptop speakers. Kick, snare, and vocal all cut perfectly with every lyric intelligible. A nice, balanced amount of guitars and percussion were present, and even a taste of the bass could be heard.

## THE RESULTS

For the sake of comparison, I shot them out against a pair of KRK Rokits 6

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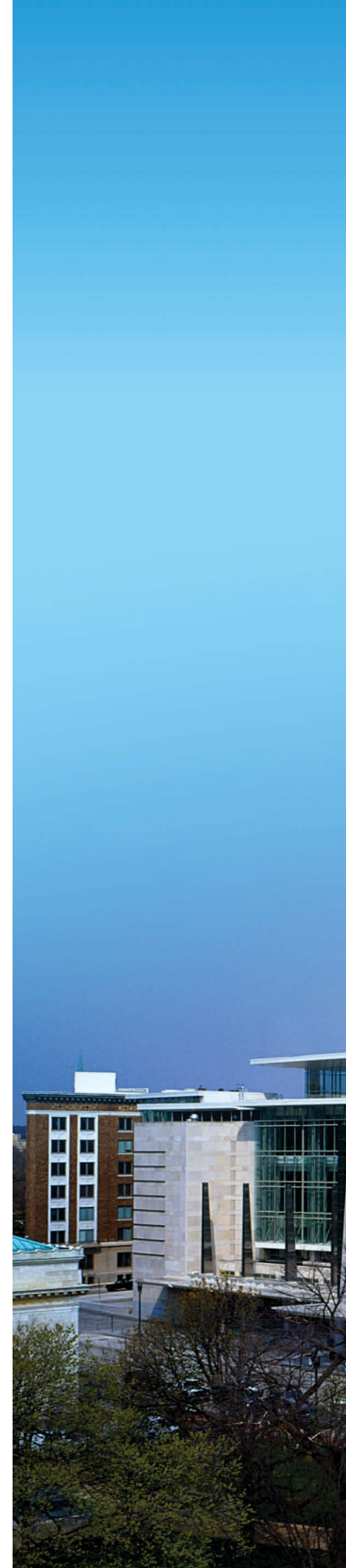
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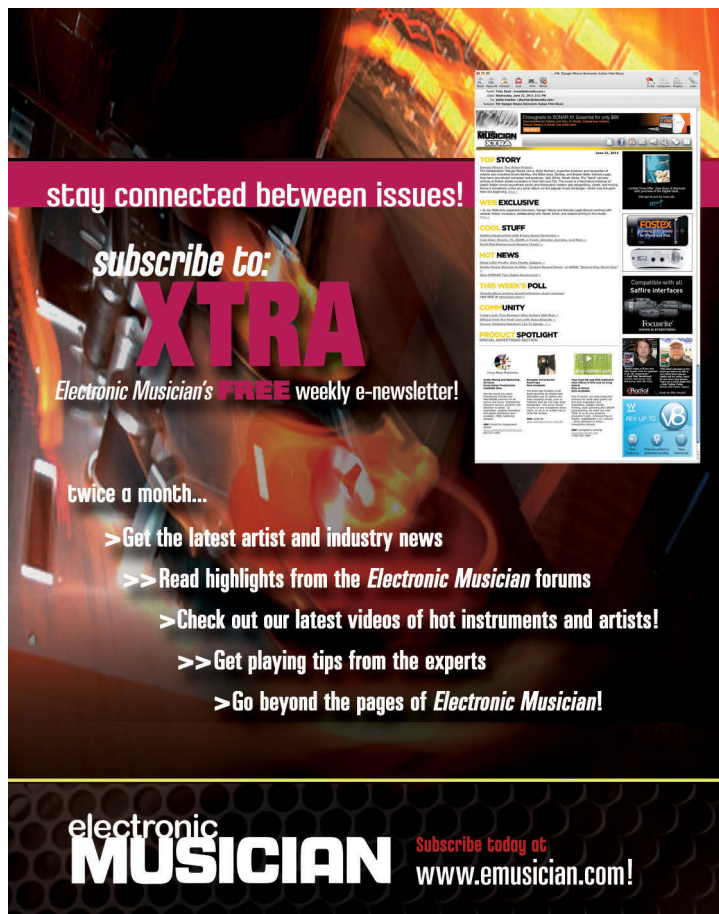
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monitors, another mid-level monitor with a 6-inch Kevlar woofer, and then against a pair of ADAM A5s, another ribbon-tweeter monitor.

The R65s had the acoustic space setting at -3 dB and were otherwise flat. The KRKs had the tweeter slightly boosted, and the bass attenuated -2 dB. When listening to EDM, the bass from the R65 was tight. Both the Rokit 6 and the R65 seemed to produce the same level and frequency width of low end, but the Rokit 6 seemed to resonate a little longer. The R65 was a little tighter. In the lower midrange, a drum machine tom that was very prominent on the Rokit 6 seemed to get lost on the R65. Meanwhile, the misty electronic snare seemed fuller-bodied and richer on the R65 and a bit thinner on the Rokit 6.

Listening to hard rock and metal, the Rokit 6s sounded more doctored in the lower midrange. Some muddy frequencies seemed scooped, producing a clearer overall sound. On its own, it sounded quite good. When switching over to the R65, however, this hole became more apparent, making the Rokit sound thinner than the R65.

Comparing the R65 to ADAM A5s I tweaked the EQ on both repeatedly, trying to create as close a comparison as possible, but this ultimately led back to the same -3dB acoustic space setting on the R65, and the A5 running with flat EQ settings. Listening to dense, hard rock, the R65 was a little smoother and more open in the upper midrange. Cymbals and snare on the A5 seemed slightly edgy when compared to the R65. Aside from that, the bottom end was no contest. Granted, the A5 had a smaller woofer, so the R65 bringing more bass was not a surprise, but the cabinet and porting seemed to come into play as well, because

the R65's bass was significantly fuller by comparison.

When switching over to an acoustic folk ballad, the A5 presented a much deeper three-dimensional space than the R65. The buzz of the guitar strings was also more prominent on the A5 while the R65 displayed a much fuller depiction of the body of the instrument. The overall detail and stereo image from both monitor pairs was very pleasant. The R65, once again, seemed very smooth at the top, even during the most biting vocal passages.

The next round was a slow rock song with big room-miked sounds from a jazzy drum kit. There seemed to be a bit of air that was audible on the A5 that didn't come across as well on the R65. I tried boosting the R65's tweeter to compensate, but this just led to harshness rather than fixing the problem. Aside from that, the overall sound of the R65 was just bigger and fuller. The stereo image was fantastic, and every component of the mix shone clearly through.

## SOLID PERFORMER

Once again, PreSonus has delivered a solid and competitive product. The R65 and R80 are both fighting in a crowded space in the marketplace. There are a lot of heavy-hitters living in the \$300 to \$500 price range with Focal, Genelec, KRK, and even the dual-woofer PreSonus Eris-series battling it out. That said, I was impressed with the R65s from the moment that I flipped them on and that never changed. If I were shopping in this price range, the R65 would be on my short list, especially if placing them in a more challenging acoustical environment. ■



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## Let's Collaborate!



By Kevin Becka

**T**here are “aha” moments in life when you realize that a change doesn’t simply affect you, but rather is a tide that raises all boats. I recently had this happen during our Mix Webcast on Pro Tools Cloud Collaboration where

Tim Carroll, Avid VP of Audio Products, Tony Cariddi, Audio Marketing Director and myself walked viewers through the latest upgrade in Pro Tools software. When I had a glimpse of Version 12.5 in January at Winter NAMM, I thought this had already been done. How much faster and better could it be than collaborating as we’ve always done through a service like DigiDelivery, Google Drive, Dropbox, you name it. I was wrong. This is huge and will change how we all work.

My true palm-to-the-forehead moment actually came as we were waiting for the Webcast’s downbeat and Tony took me through a mock session, live in Nashville, with someone at Avid in California. Once you’re in a Project, the Pro Tools GUI in 12.5 has a different look. Being a Project is an option from the beginning of a session’s life, or you can Save a Copy... and make it a Project just as you would change the sample rate or other parameters.

In the interface there are up and down arrows for sharing and accepting changes to each individual track. You can choose to view these buttons or not, just as you can choose to view Comments, Delay Compensation and more. Once a collaborator sends you a file, acceptance of the changes can be automatic, or your down-button turns orange and you can opt in, as you’d like. You can also call up a chat window where you can communicate with your collaborator(s) just as you’d text or message in other popular platforms (no video, yet, but surely it’s coming; our demo used Skype).

Everyone’s experience with Cloud Collaboration in Pro Tools will be different based on workflow but let me share how this rocks my Casbah. I split sessions across rooms all the time. Although we track with mic splits to two or three studios at Blackbird, this becomes a challenge on overdub days. Today, for instance, we’re doing lead vocal overdubs in Studio C and acoustic and electric guitar ODs in Studio B. Because the band leaves with their master files, getting both rooms updated with the latest version is something to which we pay extra special attention.

We’ve come up with a system that’s fairly bulletproof. After each overdub is done, on a common server, the students make a new master folder for each song, and in each song folder, a new Audio Files folder. With the session closed, we’ll drag the master session file (.ptx) to the song folder and then just the audio files cut for that overdub to the

Audio Files folder. We’ll then color all song folders for common overdubs the same and make a dummy folder with instructions in the name (→Voc OD, EGT OD, or whatever). This organizes everything visually and keeps the package small so we’re not overloading the server with a copy of everything. The students can also easily see how this type of organization would work across the Net with collaborators. Because the OD packet is small, you could easily use Apple’s Mail Drop and swap files/session updates in an email. Pro Tools 12.5 blows this all away. We can update across rooms without leaving the software as the session happens—no local server except for backups, no duplication of files, no email, no stop in the workflow.

Let’s go again: You’re a producer in L.A. wanting to cut tracks in Nashville and keep an eye on the workflow as it happens. While this isn’t cutting live tracks over the Internet (which, frankly, has never worked well), you can have the session open and freely download tracks as they happen.

Or, you’re an educator wanting to monitor student’s progress as you’re teaching them how to comp vocals remotely. You could duplicate the lead vocal track with all its playlists and send them to each student. With the chat function you can speak to the group, or individuals, commenting on their results. Once again, it’s not live, but you could interact and monitor a sizable group while you and all of them are in the same session. Elegant and organized.

I brought up a question during the Webcast about built-in commerce, meaning could someone charge for their work. While this is not an option, you could easily manage that outside the session via PayPal or other service. And who knows about the future? This wouldn’t be tough to integrate into the Artist Community where all collaborative users reside. The point is that this is Pro Tools 12.5 but it’s Cloud Collaboration 1.0. Avid is already talking about advanced options for those who need more storage and sessions within the interface.

By the way, you can still watch the Webcast, which goes way deeper into this process than I can here. There’s a 30-minute video demo that Avid put together just for the event, info on subscription models, and much more. You can find the link on *Mix’s* Website.

Avid has been the company everyone loves to hate. Why did they lock me out of this hardware/change this software? How come they keep having layoffs? Why, why, why? But when they get something as right as this, you have to realize they are tuned into the future and there’s a reason the platform is ubiquitous. Great job Avid—keep it up. ■





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