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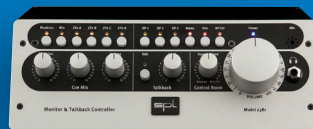
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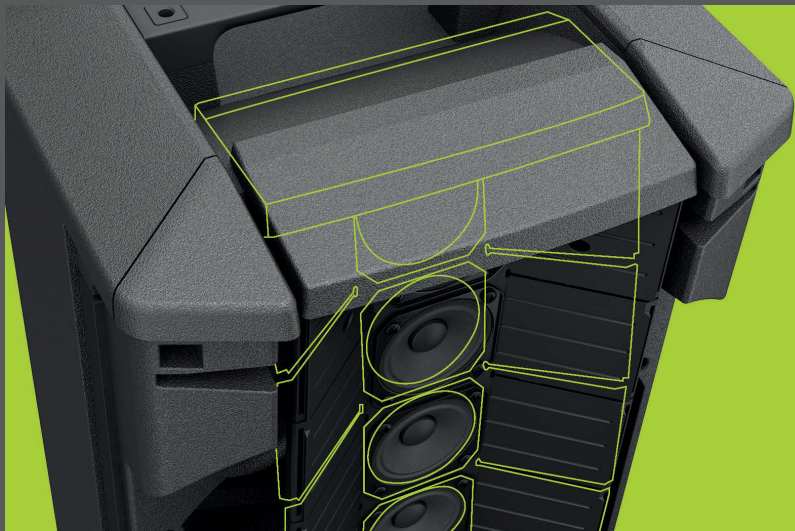
**On the Cover:** Marcella Araica and Danja, in Studio Y at Dream Asylum, designed by Walters-Storyk Design Group **Photo:** Cheryl Fleming.

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## From the Editor

### MONITORING REALITY

So many speakers. And they're everywhere. In your living room, kitchen and bedroom. In your car, on the plane, on the bus, on the train. They're even on motorcycles as they split lanes during the morning commute on the Bay Bridge. They're in the store, at the movies, coming out of kiosks, and coming out of digital signage. They're at theme parks while you wait in line and then in the vehicle as you take the ride. They're in the waiting room at the doctor's office, at the restaurant, when you get off the moving walkway. They're at school, in church, at the office and on the street, waiting for you to cross.

They're hidden in the living room and they're front and center in the media room. Sometimes they're in the ceiling and sometimes they're on the floor behind the couch pointing up. They're in sound bars with a low, sleek profile, and they're disguised as rocks to feed the pagoda in the backyard. They're mounted and they're freestanding. They are wired and wireless, USB and Bluetooth. They can be good, bad and ugly.

For professionals, they come with 3, 4, 6, 8, 10, 12 and 18-inch woofers. Three-way and two-way, bi-amped and tri-amped, powered and with separate electronics. Active and passive. For desktop, near-field, mid-field or mains. In a soffit or out in the room. Full-range surrounds, or not full-range. Crossover points. With a subwoofer or without. DSP. EQ. Room tuning built-in. Distributed power. High and low shelving. Steerable coverage or wide dispersion.

And we haven't even talked about the surge in headphones and earbuds.

There is so much audio out there in the world, and there are so many options in how to play it back. This makes complete sense, as there is nothing in the audio chain that is more subject to subjectivity, to a personal preference in color and taste and frequency response. There's a reason that Yamaha NS-10s remain a pseudo-standard some 30-plus years after their introduction.

But with all the options and all the flavors, all speakers have

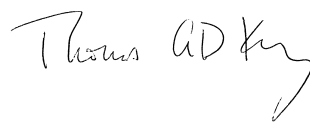
one goal: to reproduce some semblance of reality. For decades, that reality came out of one speaker and hit two ears. Then there was a second speaker added, and stereo became dominant. Then came 5.1, 7.1, 11.2 and 22.1, at home and out in the world. And now there's a push for Dolby, Auro and DTS immersive playback, with speakers in the ceiling and many more on the walls, creating a spherical, all-encompassing environment, all designed to give a greater sense of how we hear in the real world.

And now here comes virtual reality, bringing a host of new challenges and responses.

Audio for VR is headphone-based at this point, so there are key issues of spatialization and head position to deal with. A transducer that supports the action in a virtual world must let the listener know where he or she is in relation to any 3D space, whether out in an open field fighting bad guys or in a quiet room having a conversation, with dialog bouncing off the walls and couches. If the VR player turns his back, the audio has to follow appropriately; if he runs into a new room and the mob is chasing him, that must follow, too. Audio pros would be wise to re-familiarize themselves with Head Related Transfer Function.

It's quite literally a whole new world in playback, one that is determined by the user and not by the location of a sweet spot for optimum listening. Plug-ins will be forthcoming, new tools will be developed for positioning and spatialization, and best practices will be circulated among creators.

For now, the virtual world is rising out of the gaming world. In the not-too-distant future, we will all be hearing played back audio in an all-new way. It's time to get ready.



Tom Kenny,  
Editor

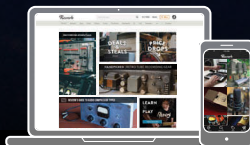


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## 31st Annual NAMM TEC Awards Winners

Photo: Jesse Grant/Getty Images for NAMM



Don Was was honored with the Les Paul Award

The 31st Annual NAMM TEC Awards were held on January 23 in Anaheim, Calif. The annual event celebrates the best in professional audio and sound production and is held during the NAMM Show. Comedian Sinbad hosted the awards show.

Winners in 31 technical and creative achievement categories were selected from among 180 nominees selected by voters from pro audio publications including *Mix*, *Pro Sound News*,

*Pro Audio Review*, *Sound & Video Contractor*, and *Electronic Musician* magazines, as well as members of the Producers & Engineers Wing of the Recording Academy, Game Audio Network Guild and select NAMM members.

Recording artist and record label executive Don Was received the evening's highest honor, the Les Paul Award, which recognizes individuals and institutions that have set the highest standards of excellence in the creative application of audio and music technology. Jeff "Skunk" Baxter, along with Record Plant's Chris Stone and the late Gary Kellgren, became the newest inductees to the NAMM TEC Awards Hall of Fame.

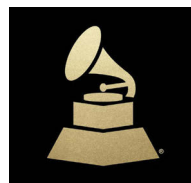
Here is the complete list of Technical Achievement winners:

**Amplification Hardware—Studio & Sound Reinforcement:** Antelope Audio Satori Monitoring Controller; **Ancillary Equipment:** Rupert Neve Designs RNDI: Active Transformer Direct Interface; **Audio Apps for Smartphones & Tablets:** PreSonus Notion 2 for iOS; **Computer Audio Hardware:** Universal Audio Apollo 8p Thunderbolt 2 Audio Interface; **Hardware/Peripherals for Smartphones & Tablets:** Shure MOTIV MV88 iOS Digital Stereo Condenser Mic; **Headphone/Earpiece Technology:** Audio-Technica ATH-R70x Pro; **Large Format Console Technology:** Solid State Logic XL-Desk; **Microphone Preamplifiers:** Manley Labs Manley FORCE; **Microphones—Recording:** Neumann U47 FET; **Microphones—Sound Reinforcement:** Shure 5575LE Unidyne 75th anniversary Vocal Microphone; **Musical Instrument Amplification & Effects:** Eventide H9 MAX; **Musical Instrument Hardware:** Moog Music Modular Recreation; **Musical Instrument Software:** iZotope Iris 2; **Recording Devices:** Zoom F8 MultiTrack Field Recorder; **Signal Processing Hardware:** Tube-Tech HLT 2A Equalizer; **Signal Processing Hardware (500 Series Modules):** Solid State Logic 500-Format LMC+; **Signal Processing Software (Dynamics/EQ/Utilities):** iZotope RX 4 Complete Audio Repair & Enhancement; **Signal Processing Software (Effects):** AMS Neve AMS RMX16 Digital Reverb Plug-In For UAD-2 Platform; **Small Format Console Technology:** Avid Pro Tools S3; **Sound Reinforcement Loudspeakers:** Meyer Sound LEOPARD; **Studio Monitors:** Genelec 8351A SAM; **Wireless Technology:** Sennheiser Evolution Wireless D1; **Workstation Technology:** Avid Pro Tools 12.

Here is the complete list of Creative Achievement winners:

**Film Sound Production:** *Birdman*; **Interactive Entertainment Sound Production:** *Batman: Arkham Knight*; **Record Production/Album:** *Before This World*, James Taylor; **Record Production/Single or Track:** "Dreams," Beck; **Remote Production/Recording or Broadcast:** *Foo Fighters Sonic Highways*; **Studio Design Project:** Paul Epworth's The Church Studios, London, UK; **Television Sound Production:** *Game of Thrones*; **Tour/Event Sound Production:** Sonic Highways World Tour, Foo Fighters.

## 58th Annual Grammy Awards Winners



The 58th Annual Grammy Awards were presented on February 15, 2016, in a ceremony at the Staples Center in Los Angeles hosted by LL Cool J, honoring recordings released during the Eligibility Year October 1, 2014 through September 30, 2015.

*Mix* magazine congratulates all of the audio production professionals whose projects won the following categories:

**Record Of The Year—"Uptown Funk"** (Mark Ronson featuring Bruno Mars); Jeff Bhasker, Philip Lawrence, Bruno Mars and Mark Ronson, producers; Josh Blair, Riccardo Damian, Serban Ghenea, Wayne Gordon, John Hanes, In-aam Haq, Boo Mitchell, Charles Moniz and Mark Ronson, engineers/mixers; Tom Coyne, mastering engineer.

**Album Of The Year—1989** (Taylor Swift); Jack Antonoff, Nathan Chapman, Imogen Heap, Max Martin, Mattman & Robin, Ali Payami, Shellback, Taylor Swift, Ryan Tedder and Noel Zancanella, producers; Jack Antonoff, Mattias Bylund, Smith Carlson, Nathan Chapman, Serban Ghenea, John Hanes, Imogen Heap, Sam Holland, Michael Ilbert, Brendan Morawski, Laura Sisk and Ryan Tedder, engineers/mixers; Tom Coyne, mastering engineer.

**Best Engineered Album, Non-Classical—Sound & Color** (Alabama Shakes); Shawn Everett, engineer; Bob Ludwig, mastering engineer. **Best Engineered Album, Classical—Ask Your Mama** (George Manahan & San Francisco Ballet Orchestra); Leslie Ann Jones, John Kilgore, Nora Kroll-Rosenbaum and Justin Merrill, engineers; Patricia Sullivan, mastering engineer.

**Producer Of The Year, Non-Classical—Jeff Bhasker.**

**Producer Of The Year, Classical—Judith Sherman.**

**Best Surround Sound Album—Amused To Death** (Roger Waters); James Guthrie, surround mix engineer; James Guthrie & Joel Plante, surround mastering engineers; James Guthrie, surround producer.

## Sony Pictures Entertainment Promotes Lake



Sony Pictures Entertainment in Culver City, Calif., recently appointed Randy Lake as President, Studio Operations and Imageworks. Lake oversees all operations, strategy and planning for Sony Pictures Imageworks, Post-Production Services, Production Services, Global Mastering and Servicing, and Asset Management.

Lake will continue to report jointly to Steve Mosko, Chairman, Sony Pictures Television, and Tom Rothman, Chairman, Sony Pictures Motion Picture Group. Lake joined Sony Pictures in 2006 was previously Executive Vice President, Studio Operations and General Manager, Imageworks.



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# On the Cover

By Tom Kenny // Photos by Cheryl Fleming Photography

## DREAM ASYLUM STUDIOS

The Style and Substance of Marcella Araica and Danja



The Dream Asylum live room, feeding Araica in Studio Y and Danja in Studio X.

**S**he's the extrovert, while he's more cerebral. She's talkative and forward-facing, and he's more quiet and contemplative. She likes to promote and network, and he prefers to mostly stay in. She mixes. He writes and produces. Their identical SSL 9000J control rooms face each other across a common live room in the middle. It's good that they get along famously, even better that they represent each other's music and sound complement.

She is engineer/composer Marcella Araica, and he is producer/writer Nate "Danja" Hills. They have been working on and off together for nearly a decade since meeting in Timbaland's camp back in the early 2000s. In 2008, they formed N.A.R.S. Records. In June 2014 they opened the stunning, world-class Dream Asylum studios north of Miami, in Hallandale, Fla., pictured on this

month's cover. Equal partners all the way.

"We are two completely different people," Araica says with a laugh. "He is very calm and quiet, with lots going on inside his head. And he's super-smart. I'm very outgoing, more talkative, and I like going out. But then my control room is like a vision of serenity, a very calm and quiet vibe. Then you go in his room and it's like you're entering a club in Ibiza! There's lasers going everywhere, and smoke machines going off. I told him that he needs a sign on the door that says this room can cause seizures! So he came up with the word Asylum; he's a nice quiet guy, but in his head it's crazy! I'm the one who loves the Dream, and this was a dream of ours."

The dream does indeed go back nearly a decade. Araica's backstory has been chronicled in *Mix* before. The short version is that she graduated top of her class at Full Sail in 2002, landed

a premium internship at Hit Factory Criteria in her hometown Miami and quickly moved to assistant under the tutelage of Trevor Fletcher. She was later mentored by Jimmy Douglass and Demacio "Demo" Castellon, two big influences in her life. Soon she got a break working with Timbaland and Missy Elliot. Living the dream.

Danja, meanwhile, under the Timbaland banner, had a string of hits beginning in the mid 2000s producing the likes of the Game, Justin Timberlake, Keri Hilson, Britney Spears, and Nelly Furtado, among many others. He and Araica crossed paths frequently, working together on a variety of projects and finding that rare *simpatico*. They started to talk about the changing industry, how they liked to work, the realities of the label model. Before long they were in business together, 50-50.

"We started the label in 2008 and started signing artists," Araica explains. "We found out

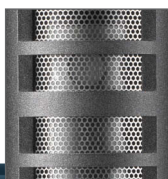


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Araica's Studio Y mix room includes a 72-channel SSL 9000J, custom Augspurger main monitoring, Barefoot MicroMain 27s and Yamaha NS-10s.



Danja's Studio X includes a 40-in SSL 9000J, Augspurger main monitoring and ADAM SX3-H nearfields.



The production room, Studio Z, with SSL Matrix and Augspurger monitoring.

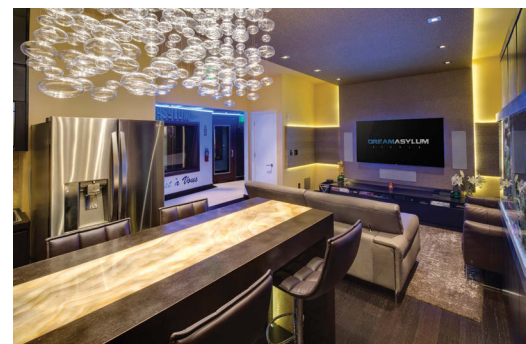
right away how quickly our budget was being spent at other studios. I learned how record labels would work with producers and artists and engineers. Everything was on the clock. They would ask, 'Well, how long do you need to mix?' Well, sometimes that's a really hard question to answer. I can't say four hours and then I'm eight hours in. That pisses them off!

"So about a year after Danja and I started working together we started talking about how cool it would be to have our own place and not be under the pressure of time," she continues. "A place where we could create freely and mix freely. He wanted his production room, I wanted my mix room, and we wanted a third room for a client or writer or artist to be off on their own. It was really that simple."

It still took a few years to implement. They knew what they wanted, and they came to prioritize what they needed. They bought the 72-in and 40-in SSL 9000Js, brokered by Warren Rhoads out of Nashville, long before they had the building. Priority one? Establish the analog chain. Next, they talked to John Storyk of Walters-Storyk Design Group. Then they began scouting out locations, preferably something close to the I-95 freeway. They found an ideal 4,000-plus square-foot building in north Miami and bought it.

The facility houses Araica's Studio Y (think chromosomes) and Danja's Studio X, along with a smaller production room, all tied together. While going back and forth with Storyk, they decided to forego isolated spaces and create a common live room. "I don't really use the live room as part of my day," Araica says, "but I want to be part of that energy and the process. I'm not with them, but I'm still part of something. And then Danja uses the board a lot, and the amount of instruments he uses on his productions? I have a 72-channel board and sometimes 60 of the inputs are going to him!"

Even by Miami standards, the common areas are unique, reflecting



A sense of the style throughout Dream Asylum Studios, including the hallway view into the live room; the aquarium in the reception area and the comfortably chic lounge area.

a completely individual sense of style. Two creative minds, with one sense of place. There are swirling murals on the walls, two large aquariums, with one in reception ("the predator tank") and one in the lounge, a kitchen, a back patio and an overall sense of color and vibe—old-school vibe in a thoroughly modern space.

"The work environment doesn't feel typical, and we have such a great staff here. That's what creates the special vibe," Araica concludes, shouting out studio manager Chris Graham; in-house engineer Chad Jolley; general assistants Owen Archer and Quentin Hills; and the most recent hire, Araica's assistant engineer in training, Bianca Pernice. "I'm very proud of what we've done." ■





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# Music

MAYER HAWTHORNE

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## MAYER HAWTHORNE

Producer/Songwriter Is the ‘Man About Town’ By Lily Moayeri

**A** quiet cul-de-sac in Culver City is the last place you’d expect to find Mayer Hawthorne. But he’s hidden away in the back unit of a modern apartment building, in a narrow L-shaped room on the ground floor with black-out shades hiding sound-deadening panels. This room serves as his studio and his man cave, where vinyl fills the shelves and cassette tapes line the tops, their covers on display. Backlit by his computer monitor, wearing a sweater with a giant stylishly frayed-edged monochrome “M” stitched on it, Hawthorne is

wedged in a corner, as much a part of the space as his many synthesizers and guitars.

In this studio, on his own, is where Hawthorne recorded the majority of his fourth album, *Man About Town*. No stranger to being in the driver’s seat, Hawthorne wrote, produced and mixed his first two albums, *A Strange Arrangement* (2009) and *How Do You Do* (2011), and co-produced his last album, *Where Does This Door Go* (2013). He takes the reins again on *Man About Town*, realizing his vision all the better after working with Pharrell, Jack Splash, Warren “Oak” Felder, and Greg Wells as co-

producers and Manny Marroquin and Michael Brauer as mixers on *Where Does This Door Go*.

Hawthorne’s referential style to classic musical eras is his signature. For *Man About Town*, he returns to the ’70s. One of the main components to capture this time is the Yamaha CP70 electric piano at Los Angeles’ The Village with a Boss CE-1 Chorus Ensemble plug-in. But more importantly, he uses the vintage drum machines Maestro Rhythm King MRK-2 and Acetone Rhythm Ace FR-6—one or the other of which features on every song and has shaped the sound of the album—as his vehicles.



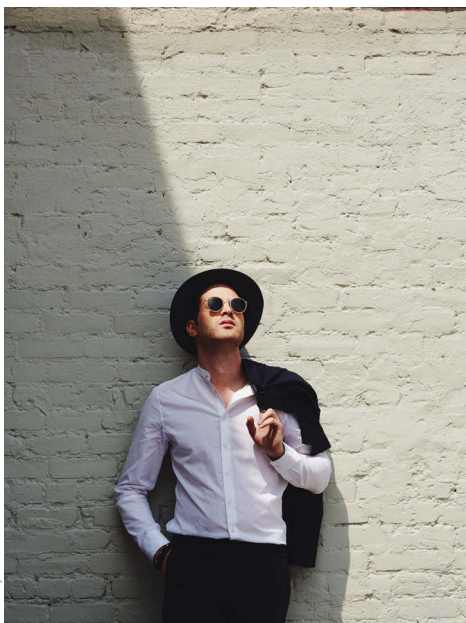


Photo: Jake Michaels

"The older and shittier the drum machine sounds, the better," says Hawthorne, as he lovingly fondles the Rhythm King. "It doesn't sound like real drums. Once it starts sounding like real drums, then I don't like it anymore."

Sly and the Family Stone's *Fresh and There's A Riot Going On* are the reference points for much of *Man About Town*. The Rhythm King, used on "If You Want Me To Stay" and "It's A Family Affair," is what Sly called "the funk box." It was during the recording of the album *The Big Knock*, for one of Hawthorne's other projects, Jaded Incorporated, that vintage drum machines were introduced to his repertoire.

"You can do all the EQ'ing and compressing in the world, but these drum machines are never going to bang like real drums," says Hawthorne, who also sampled a physical Roland TR-808 through a Fairchild 670 for additional drum sounds. "I use them as character. If the built-in pattern isn't exactly how I want it, then I go into Pro Tools and chop it up, digitally manipulating and EQ'ing to make it sound new. I play real drums, individually. I play a loop, then loop that or do the hi-hat by itself, all the way through. It gives me more options when I mix. I don't like any music that has wimpy drums. That comes from growing up in hip-hop, in Detroit, in the '90s, playing J Dilla, DJ Premier, Pete Rock, Diamond D, D.I.T.C., and Barry White smashing it on the drums."

Hawthorne records the drums in his small studio with carpet on the floor and panels on every window, to cut down on any room

reverb. The sound he's going for is dead and ring-free but with clarity. He captures this with a beyerdynamic M88 directional microphone, tight and close, something he's drawn to from vintage soul records like those of the Delfonics. If he has to, he will go even drier by taking the bottom skin off the toms and draping a T-shirt on the snare, tricks he learned from watching clips from the '70s.

The other microphone that makes an appearance is Groove Tube, which in his early broke days Hawthorne used as a vocal microphone, and still uses for its crisp character and frequency response. Nowadays, he uses a Sony C800G for vocals—he bought Dr. Dre's microphone from his NWA time without realizing it.

"It's a newer, crispier-sounding microphone," says Hawthorne. "But, I don't want it too pop-y, too modern, and too crispy so I run it through a Heritage Audio DMA73, which is my favorite Neve 1073 clone, and it's dual so I get two channels out of it. If you go into any major recording studio today, a lot of them are using this microphone, but running it through an Avalon Vt-737 and it will be even brighter. It's a combination of old and new techniques that moves it forward for me."

"I use the same simple signal chain for everything," he continues. "I have an HDX card in my Pro Tools rig. And I use the UAD plugins a lot on *Man About Town*. I love the EMT 140 reverb on the vocal, and toward the end I started messing around with the EMT 250."

Hawthorne keeps things as analog as possible until it becomes inconvenient. It's in the mixing stage that he makes the necessary adjustments so his music sonically competes with contemporary sounds. Hawthorne mixes as he tracks so he can listen back to the songs during a certain stage of completion to know if they're right.

"Vintage albums are mostly a bell in the middle," he says. "There is a lot more width in modern music. The high end, the very top of the frequencies you can hear—the 5k and above and the low end, the 100 Hz and below, are real important. Modern records have a lot more of both of those. The struggle with me is always, 'How do I make this new?' I don't ever just want to make a retro album. I don't ever just want to redo something that was already done. Somebody already did it and they probably did it better than I can. The goal is always to make something that sounds new, but that uses all the best of the old." ■

## THE PINES, 'ABOVE THE PRAIRIE'



**A**bove the Prairie is the perfect name for The Pines' album, which couches acoustic sounds in an airy atmosphere of ethereal synths. "That's the thing that makes The Pines unique," says engineer Adam Krinsky. "It all starts with a band in a room playing only acoustic instruments, and then we build this world around it."

Basic tracks for *Above the Prairie* were recorded by John Svec at Earth Tone Studios (Iowa City), and then Krinsky and the band overdubbed keyboards, as well as some guitar parts and vocals, before mixing the songs in Krinsky's studio, Bellows, in the band's hometown of St. Paul, Minn.

"When we record Alex Ramsey, the keyboardist, he might layer as many as four or five pads, all sitting in different areas in the frequency spectrum," Krinsky says. "Some are more thick, and some are more thin and textured. Then Benson Ramsey was also adding keys; he had an old Juno that he used—mainly for bass sounds. We try to get things really wide, so the acoustic instruments can sit inside of it, but quickly we'd find that we had too much, so we'd sift through those and then use a tremendous amount of automation, to create movement: Not by saying, 'This synth will be in the verse and this will be in the chorus'; they move between each other all the time and constantly shape the world behind them."

Krinsky mixed in Pro Tools, making use of electronic effects and reverbs that enriched the roots-meets-air approach. "On the pads, we used a lot of harmonizers," Krinsky says. "The Waves Doubler, the Space Echo off of Soundtoys Echoboy—sometimes we'd use those just to help things melt into each other as opposed to creating echos, almost more like another reverb." —Barbara Schultz



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## JAMES HUNTER AT DAPTONE WEST

British soul James Hunter's latest Daptone release, *Hold On!*, has a retro R&B vibe blended with a bit of '60s lounge. The album was produced and recorded to an 8-track, 1-inch Ampex tape machine by Gabe Roth in his Riverside, Calif., studio, with additional studio space borrowed from his neighbor.

"I have a mixing studio in a big old brick building that used to be a YMCA," Roth says. "I have a corner spot upstairs with a balcony. For the most part, I record in New York and mix out here. But I've done three records where I've recorded in California. What I do is: My landlord has an apartment down the hall that's huge with high ceilings; I think originally it was a racquetball court. It smells terrible but it sounds wonderful.

"So this is the third time I've done this: I give my landlord some money to go on vacation for a week or two, and we go into his space, move some furniture out, hang moving blankets on the walls, put up some office dividers, and run a snake down the hall."



Photo: Mark Shaw

Roth says that while Hunter's previous album, *Minute by Minute*, required a lot of overdubs, this release was captured almost all live, including Hunter's vocals and the horn section.

"For horns I think we used old Reslo ribbon mics, though we might have used RCAs for a couple of tracks," Roth recalls. "For the vocal chain, I used a Bock 241. It's a great mic, but it's the same as anything: He's a great singer with a beautiful vocal tone, and that makes him very easy to record." —Barbara Schultz

## COOL SPIN: UNLOVED, 'GUILTY OF LOVE'

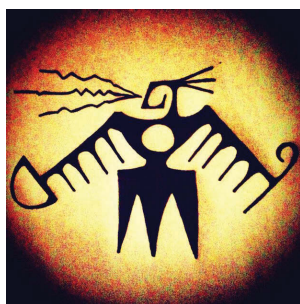


David Holmes' honed musical knowledge, Keefus Ciancia's extensive musician experience, and Jade Vincent's classic torch singing style meet in *Unloved*. From samples that reference '60s girl groups and film noir soundtracks, Holmes provides the inspiration for *Unloved*'s debut album, *Guilty Of Love*, which was preceded by the trio's EP of the same name in 2015.

Enlisting an A-list of musicians to contribute, the Unloved recorded the EP and LP at Vox Recording Studios in L.A. Here they captured the essence of the French sounds of Françoise Hardy and Brigitte Fontaine, the spirit of the Shangri-Las and the Ronettes, and the insight of Phil Spector and Shadow Morton.

*Guilty Of Love* is deceptively lo-fi with its underlying hiss and crackle. At the same time it is cinematic and widescreen. Vincent's husky and seductive growl fits as easily into one as it does to the other, connecting the two worlds. "This Is The Time" tumbles along an organ pattern goaded by ferocious drums and layered vocals that sync perfectly. The mono sound of a jangly guitar stabs through "When A Woman Is Around," a song that channels the girl-group thing with signature sing/talk interludes just right. The album opens and closes the strongest with the swagger of the title track and the eerie movements of "Forever Unloved." —Lily Moayeri

## SKILLED MECHANICS BLEND ORGANIC INSTRUMENTS WITH STUDIO WIZARDRY



It's hard to pin which city Tricky is currently calling home as the Bristol, UK-bred artist flits his way from continent to continent every few years. For his latest endeavor, a fluid project called Skilled Mechanics, he enlists his drummer, Luke Harris, and his The Wild Bunch cohort, DJ Milo, and brings them to his current residence in Berlin, Germany. Here, Tricky has a home studio setup, and his engineer of seven years, Francois Kerjan, at the ready.

The self-titled album has a balanced combination of organic instruments and studio wizardry. It similarly uses both modern and classic outboard studio gear, mainly coming from DJ Milo, such as Akai S3000 and S950 samplers, Korg Triton, Yamaha Motif, and an old version of Cubase. Milo sketches his ideas, which form the textures for the songs. For all the input it has, *Skilled Mechanics* remains spare and select in its sounds with plenty of space between its elements.

Stemming from a dub/reggae setting inherent to Bristol, the bottom end of all Tricky's output is strong. For *Skilled Mechanics*, this aspect is brought even more to the forefront. Kerjan attributes this partly to his approach toward compression, which is calculated to leave air in the vocals, bass kicks, and snares.

"There's nothing I dislike more than over-compressed pop vocals where all the emotion is taken away by a huge 20 dB gain reduction," says Kerjan. "That wouldn't match Tricky's songs, which need to stay intimate. I used two Don Classics U76, which I love for kicks and snare, with slow attack and fast release to create a bit of light distortion and a gentler Urei Blackface 1176LN Rev F for vocals. JLM Audio LA500 for bass and SSL G series stereo comp for the master, mainly set to slow attack of 10ms and middle to slow release, 0.6s/1.2s/auto, and 2:1 ratio, with never more than three or four dB of compression."

For the bottom end the slow attack/fast release is swapped for slow attack/slow release on the master bus compressor as well as the Tube-Tech PE1C set after the compressor. Says Kerjan, "[Tube-Tech's] boost curve is way smoother than traditional EQ shelves. I almost always set it to 30 Hz and it affects the mix way above this frequency. The fact that it has been modeled with Fletcher Munson Curve makes it particular to and efficient for that task." —Lily Moayeri

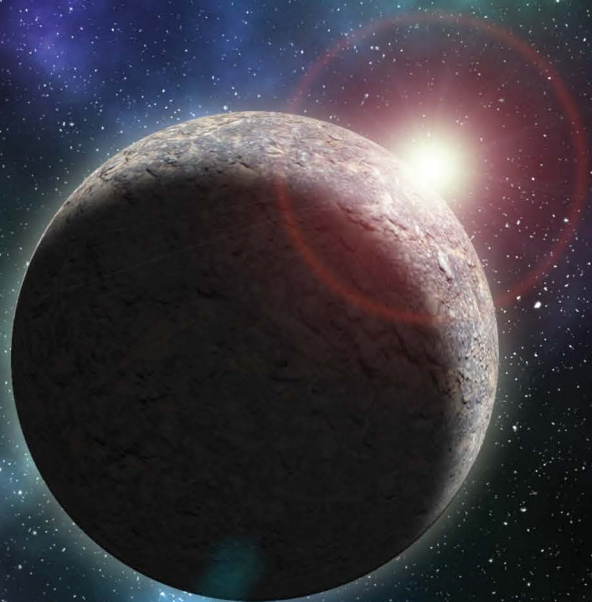


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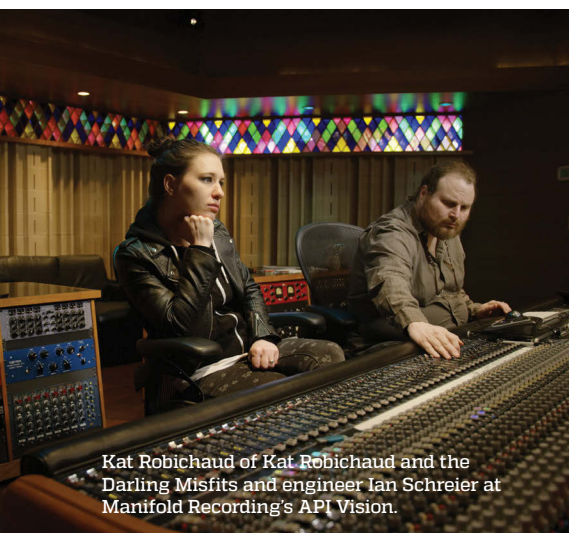


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# PRODUCER/ENGINEER IAN SCHREIER

By Tom Kenny



Kat Robichaud of Kat Robichaud and the Darling Misfits and engineer Ian Schreier at Manifold Recording's API Vision.

There was a moment a few years back, and again a few years before that, where Ian Schreier faced the career dilemma a lot of talented mid-market audio engineers go through: “Should I pack up and try Nashville? L.A.? New York? I’ve engineered a Grammy-nominated record. I think I’m good enough. But how would I make it happen? Would it work out? What would I be giving up?”

At the time Schreier had 10 years of studio work behind him, along with experience at everything from production at 5,000-seat festival venues to radio program editing to cataloging bird calls for a local professor—engineers outside the recording centers tend to get a well-rounded education on the job, doing bits of all things audio. Schreier certainly did, though the emphasis was always on bands, and had been since his drumming days before, during and after college, on the road and in the studio.

As is typical in engineer genesis stories, the last, best band imploded in the mid-1990s, and Schreier found himself drawn to the studio—to recording and sound. But he had just turned 30, older than most starting out, and he had no real experience beyond one semester of recording at Western Michigan while pursuing a music major, years ago. He had been working for 10 years in auto repair, financing his band life by moving his way up in a regional company. When the op-

portunity came for a promotion and a transfer, he declined. But he didn’t know what he wanted to do. His wife said to him, “You’ve always liked recording, why don’t you open a recording studio?” “The light bulb went off,” Schreier says. “I knew I could do this.”

He read everything he could on acoustics and recording philosophies and in 1997 opened Grooveworks Studio in Raleigh, N.C., in a space at the back of his house, with a Behringer console and ADATs. He gave away free time so he could learn, he started networking and taking on all jobs. He also worked part time at a production house doing live sound, something he credits with helping him to learn how to establish priorities in a tracking session or at a mix.

He also freelanced at studios around town, one of which, Osceola Recording, was going through an ownership change. The new owner asked him to come aboard full time—not as an employee, mind you, but as house engineer. He brought as many clients as he could, and he found himself behind a Sony 3036 console with Studer A800 2-inch. He stayed for 10 years.

While at Osceola, Schreier tracked and mixed bluegrass, rock, heavy rock, hip-hop, country, jazz and everything in between. Mostly local and regional acts. The room was just big enough to hold a four- or five-piece group. Sometimes he would pack in seven or eight. He developed a taste for recording bands live. One of those bands helped to affirm his career choice and got him thinking bigger.

“We were making the That’s Right record with Roomful of Blues, which was nominated for Best Traditional Blues Recording that year,” he recalls. “They are an up-tempo jump blues band. Horns. Like a cross between blues, rock and big band. A fun band live. I didn’t have any assistants on that session, so I get everything going, I hit Play and Record, and it immediately sounded like a record coming out of the monitors. I thought, ‘This is why I do this! This is what drives me!’ And the first song on the album is the very first take of the first song we recorded. Hitting it out of the park the first time. It was magic.”

But it also led to the career dilemma. Sch-

reier was now in his late 30s, and he thought, “What if...?” And then he met Michael Tiemann.

Tiemann is a most interesting character, entering the music and recording business in a big way after a highly successful career in tech (one of the founders of Open Source computing). In 2008, he was roaming the area around Raleigh with drawings of his plans to build a world-class recording space 15 miles south of town. Tiemann and Schreier met at an industry event, and over the ensuing years, without either ever really expressing it formally, Schreier became the chief engineer at the Wes Lachot-designed Manifold Recording, starting around the time the gymnasium-size slab was laid. (You can read more about Manifold Recording at [mixonline.com](http://mixonline.com))

“One of the reasons that I work here as opposed to any other facility is that this environment was created to do two things: inspire great performances, and then capture them when they happen. The kind of recording I want to do, I finally figured out, is performance-based. So when Michael described his idea for the place, I got excited.”

Recently, Schreier hooked up with local singer-songwriter Sarah Shook, offering to waive his producing fee so that she and her band, the Disarmers, could record in a new way, live at Manifold.

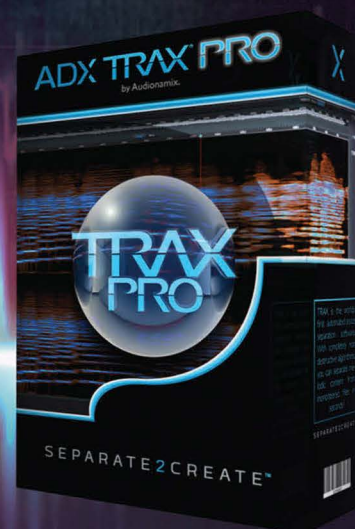
“Sarah is an example of finding an artist who I thought had something special,” Schreier says. “We tracked the entire record in four days, totally live with the exception of the lead vocals. All the doors were open, the guitars were in the main room, so were the amps. Drums are in a booth with the doors open. Sarah is in a gobo booth in the middle of all this, playing guitar. It’s a musical conversation. They’re balancing themselves.

“And then there’s this great phenomenon when you start pulling up individual tacks and saying, ‘Man, it all sounds so good,’” he continues. “And then I pull up the room mics and everybody just hits the floor. It goes from a great recording to a record. It still blows me away. That’s a great room. That’s the sound of great records to me.” ■



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# Live



**TOUR PROFILE:**  
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Photo: Todd Berkowitz

Nathaniel Rateliff and the Night Sweats at the Neptune Theater in Seattle in late January 2016.

## NATHANIEL RATELIFF AND THE NIGHT SWEATS

Soul Music Never Gets Old By Barbara Schultz

**N**athaniel Rateliff wasn't an overnight success, but it might seem that way. The Missouri-born artist spent years in the folk clubs of his adopted home of Denver, Colo., and made four singer/songwriter-style albums before developing the high-test, Band-influenced soul sound of the smash eponymous debut album by Nathaniel Rateliff and the Night Sweats (Stax/Concord, June 2015).

Now Rateliff and his six- or seven-piece

band (two or three horns, depending on the gig) are playing to blissed out, sold-out houses all around the country. The atmosphere when they launch into their encore—the desperate but raucous hit single “S.O.B.”—is Springsteen-esque. Rateliff can walk away from the mic for a chorus, and the audience will carry on without him: “Son of a bitch! Give me a drink! If I can't get clean, I'm gonna drink my life away...” It's got to be a huge kick for an artist who has paid his dues to find that fans all over the country

know every word.

The Nathaniel Rateliff and the Night Sweats tour reached *Mix*'s backyard in the San Francisco Bay Area at the end of January; we attended one of two sold-out shows at the historic Fillmore, where veteran front-of-house and studio engineer Jamie Mefford mixed on the venue's Midas H3000 board.

Mefford has known Rateliff since the artist's folkier days. “I started doing live sound more than 10 years ago, but I still worked in studios





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

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

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ALAN MEYERSON // JULY 21-27



Front-of-house engineer  
Jamie Mefford.



Photo: Todd Berkowitz

a lot, too, and that's how I met Nathaniel," says Mefford, who also mixes live for singer/songwriter Gregory Alan Isakov. "During his more folk phase, I produced and recorded two of his records [*Falling Faster Than You Can Run* and a limited-edition *Night Sweats EP*]. I've been working with him live on and off for a couple of years. Sometimes when Nathaniel was in Denver and had a bigger show or we crossed paths on tour, I'd go out and mix him live, but it didn't become a regular thing till about three months ago."

Mefford is carrying a minimal supply of mics and backline on this tour; the items he brings along are mainly to handle gaps that might not be filled by club arsenals.

"We've been doing so many fly dates in the past few months, it hasn't allowed us to carry a lot of gear, so it's been an adventure in that way—showing up and making it work with whatever they have, and filling in with backline," Mefford says. "We bring a couple of clip-on Shure Beta 98s for the horns, to keep that consistent for them. I'm also carrying a couple of Shinybox ribbon mics that I use on guitars."

One of the reasons Mefford feels comfortable with such a small road package is that he finds that the main attraction—Rateliff's sweet but powerful voice—works best with a mic that's commonly found in venues'

inventories. "We've had the best luck with a standard Shure SM58," the engineer says. "Nathaniel is a very dynamic singer, and he has a brighter voice when he really pushes hard. The 58 handles it really well without getting too peak-y sounding. In those upper mids, where some other mics might get painfully peak-y, the 58 is smooth enough but also cuts through enough."

Getting individual elements to cut through is definitely one of Mefford's main jobs. The sheer volume of this band onstage—guitars, bass, drums, horns, and keyboards, with every group member also singing—puts up a huge wall of sound.

"The job is to make them as dynamic as possible—to find moments when I can pull them back or really push them hard. That's my biggest challenge every night—making sure the show is dynamic in a way that has an emotional quality," Mefford says.

"The other thing is to make it sound old," he continues. "We're trying to make it sound like a James Brown show in 1960. And a lot of these theaters, including The Fillmore [with a Meyer Sound MICA line array P.A.] are actually too good for what we want, weirdly, because I want the mix to sound like it's coming off a tape machine from 50 years ago.

"So it's a matter of smoothing everything out, rounding things off, and avoiding having anything that's overly bright or too big on the low end. I'm carving out everything on the low end so it sounds a little more like that era.

"Often this is more about tuning the room to get it to sound that way before show time, with house EQs, and then throwing up as many ribbons as I can get my hands on to warm things up," Mefford continues. "I'm also using a fair amount of slapback echo and shorter, warmer plate-style reverbs to keep the sound period-correct. And I carry a little Strymon tape echo—kind of a guitar pedal—that I use for vocals."

Vocals are also the main focus of the monitor mix. Mefford has been taking care of the band's house-provided wedges most nights in addition to his FOH duties. Friend of the band and monitor engineer James Barone joined the tour for the Fillmore shows and several others, but he also tours with Father John Misty and plays drums in Beach House, so he had to move on.

"Nathaniel likes to have a lot of volume in his vocals," Mefford says. "In fact, since they all sing, most of them just take their vocals and not much

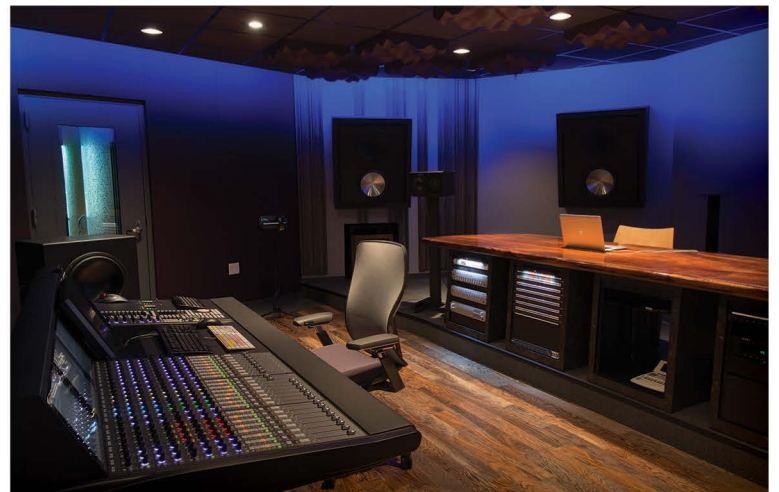
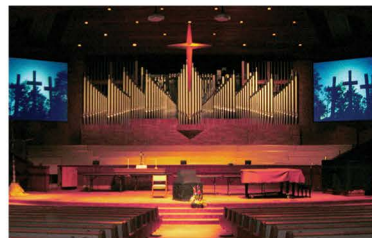
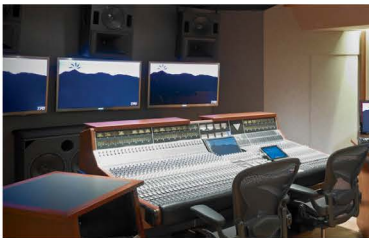
else. With all those amps onstage, their stage volume is really a good mix for them, and then they just take vocals in their monitors. It's the only way to make sure they can hear each other sing." ■



Nathaniel Rateliff at the  
Neptune Theater in Seattle  
in late January 2015

Photo: Todd Berkowitz





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# VANESSA CARLTON

## 'Liberman' Live with Violinist Skye Steele

By Matt Gallagher



Vanessa Carlton and violinist Skye Steele (not pictured) performed at Seattle's Tractor Tavern in January 2016.

Photo: Todd Berkowitz

**S**inger/songwriter Vanessa Carlton began 2016 with an extension of her tour in support of her October 2015 album release, *Liberman*. Her latest studio work, produced by Steve Osborne and Adam Landry, is a contemplative collection of 10 songs—described by Carlton as “a calm record”—driven by her voice, storytelling lyrics, and lush, ethereal washes of synths, strings, effects, percussion and piano. Carlton notes that *Liberman* was largely inspired by her grandfather's 1963 oil painting in pastel colors of three women, and also named the album after him. “The swirly colors of that painting reminded me of the music, and the music reminds me of those colors,” Carlton says.

To bring *Liberman*'s music to the stage, Carlton teamed up with violinist Skye Steele, who played on the album and created its string arrangements. The duo visited a variety of indoor venues along the West Coast and in the Southwest during the second leg of their tour, including The Independent in San Francisco, Roxy Theatre in Los Angeles, Coach House in San Juan Capistrano, and Livewire in Scottsdale, Ariz. Carlton and Steele traveled with a two-person crew comprising tour manager and front-of-house engineer Colin Quisenberry, and merch manager/primary driver Britt Bowman.

Quisenberry, who was on his first tour with Carlton, explains that in addition to playing violin, Steele is also operating a Mac laptop running Ableton Live to play backing tracks from *Liberman* and create live loops of his violin.

“These beautifully complex, layered sounds are essential to re-creating *Liberman* in the live setting,” Quisenberry says. “The laptop is the backbone of the *Liberman* portion of the set. We have split the signal from the laptop into four separate channels: kick drum, bass, violin loop, and everything else—percussion, key synth, harmonies. Most of the time the kick drum feels more like a heartbeat than a driving force in the song. I try to mix the

tracks in a way that they are coloring the vibe of the songs rather than driving them. The harmonies are barely audible and mostly add depth; Vanessa doesn't need much help, as she can carry these tunes on her own.”

Steele's violin takes a David Gage Realist pickup. “I found we were getting cleaner low end and less ambient sound out of the pickup, which was essential for such a dynamic mix of sounds and loops,” Quisenberry says. “From the pickup we go into a Klark Teknik DN200 DI, which then goes to the Focusrite Scarlett 6i6 interface for Ableton. All of the real-time loops are then created in Ableton and sent out to our Radial Pro D2 DI, where I also receive a post-pedal board, pre-Ableton channel as a clean signal. A dbx 160A is used for the clean violin channel.”

Carlton's tour relies on house-provided consoles, P.A. systems and monitor wedges, and travels with Sennheiser e 935 dynamic vocal microphones for Carlton, two Radial ProD2 stereo direct boxes, and two Radial J48 direct boxes for Carlton's Yamaha CP300 Stage Piano. Quisenberry also travels with a rack of outboard gear that is essential for mixing Carlton's vocals.

“I wash the vocal in a healthy amount of reverb and compression to keep it right in the pocket of the mix without popping out too heavily, so that I get this really steady and audibly pleasing mix that's warm on the ears and easy to listen to,” Quisenberry says. “I usually EQ wide dips at 125 Hz and 500 Hz, with tighter notches at 1 kHz and 3.5 kHz. An FMR Audio RNC compressor is inserted on her vocal chain. I tend to compress Vanessa's vocals pretty heavily since she's such a dynamic vocalist, but with this unit it's not blatantly obvious, even when I'm hitting 8 dB of compression and the vocals stay in this nice little pocket that's perfect for the type of set she is doing.

“I'm actually running a good amount of reverb the whole night,” Quisenberry acknowledges. “I'm a real sucker for the Lexicon LXP-1. It's got that classic Lexicon fullness without coming across as digital-sounding, especially when I'm pumping a heavy dose through the P.A. I'm using the Roland SDE-1000 as my slapback vocal delay for two songs in the set, ‘Willows’ and ‘Operator,’ with a 120ms delay time. Before this tour I mostly used the Roland for my long vocal delays but have since found a new favorite: the Boss RE-20 Space Echo. When I heard Vanessa's new album, I visualized the Space Echo as the sound I wanted to best represent *Liberman* in the live setting. Vanessa likes the huge sounds that we are able to produce on this tour and I very much concur. She has given me creative control on the different delays throughout the show, which I think has paid off.”

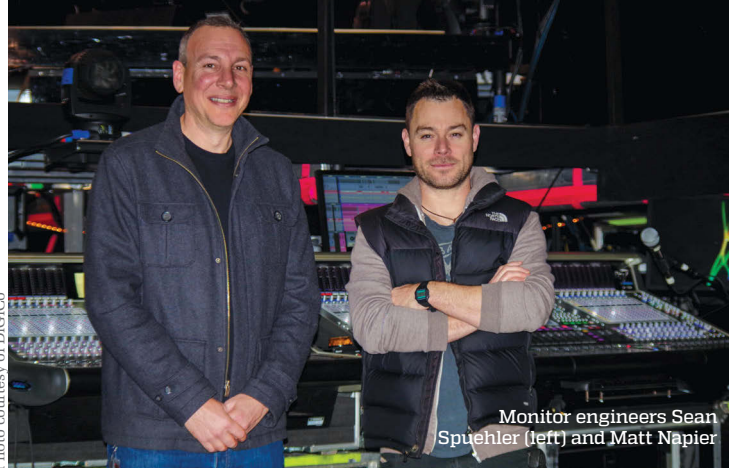
Carlton's 2015-16 set list offers a quieter, introspective show, in which musical subtleties, textures and layers must be clearly conveyed. “I start the mix with the rhythm section of the track, usually cutting out most of the high end of the kick and bass so that it lays a nice, smooth foundation that won't step on the tones of the piano,” Quisenberry says. “The piano takes most of those warm frequencies in the low to midrange section, and the violin rounds out the high-mid to high section. Skye also plays a lot of the rhythms, looping them live in Ableton, which I mix just a step below the clean violin but still very much on the top of the mix. I rely on the violin and loops to really tie the whole mix together; this is the driving force for most of the set.” ■

## MONITORING MADONNA

Madonna began the third leg of her highly successful globetrotting Rebel Heart Tour in Mexico City on January 6 with a scheduled conclusion on March 20 in Sydney, Australia. Alongside Madonna, stage personnel comprise four musicians, two backing vocalists and 20 dancers. The Rebel Heart Tour has been traveling with a pair of DiGiCo SD7 consoles operated by front-of-house engineer Andy Meyer and monitor engineers Matt Napier and Sean Spuehler. Meyer and Napier are both using SD7s with Napier's console featuring an EX007 fader expansion.

"Madonna likes her live sound to be as close as possible to the album," says Napier. "To accomplish this, Sean focuses on mixing her vocal effects and delays, which are then bused to the FOH console so—in theory, at least—the audience hears exactly the same vocal sound that she does. She spends a large proportion of the show 110 feet in front of the P.A. As she gets further into the P.A., the sound of the spill through her vocal mic means what she needs to hear in terms of pitch and timing constantly changes. It's the first time I've run a show using timecode, which I've done partly to mitigate this. Having multiple snapshots per song, all fired automatically via timecode, has freed me to concentrate on the aspects of the mix that I need to adjust in compensating for the effect of her moving along the catwalk. The timecode has also been really useful when we have the occasional—inevitable—problem, because it allows me to focus on that and not worry so much about missing a cue."

All of the musicians are on in-ear monitors, with additional monitoring



Monitor engineers Sean Spuehler (left) and Matt Napier

for musical director/keyboardist Kevin Antunes, a thumper for drummer Brian Frasier-Moore and sidefills for the dancers. Spuehler's vocal group is bused into Napier's side of the SD7, where he adds it to the music mix in her monitors, as well as looking after the other musicians. In all, the SD7 monitor console is set up with 118 input channels, 19 mono auxiliaries, 22 stereo auxiliaries, six stereo groups, four mono groups, 10 matrix outputs and 12 control groups.

"We have kept the console running at 48 kHz, mainly because we interface via MADI with the playback computers and all the show sessions are at that sample rate," says Antunes. "In addition to the playback, we also send record lines back to playback world. This means that in rehearsals the musicians can add any overdubs, or additional parts, quickly and easily. A second MADI interface system connects via RME MADI Bridges to two Mac Pros running Apple Logic. This allows us to interface third-party plug-ins directly with the console." ■

# Neve



...No Question





The center scoreboard and A/V hang at the Brick Breeden Fieldhouse.

## MONTANA STATE UNIVERSITY SELECTS BOSE

The Brick Breeden Fieldhouse on the campus of Montana State University in Bozeman, Montana, seats 7,250 people and is home to MSU Bobcats basketball games and other sports, including track events, the annual statewide high school volleyball tournament, and the occasional rodeo.

A/V systems integrator Black Box Design in Big Timber, Montana, recently installed 28 Bose RoomMatch array modules plus four RMS218 dual-18-inch subwoofers. The system is powered by a total of 15 PowerMatch PM8500N networked amplifiers.

Doug Brekke, president of Black Box Design, graduated from Montana State with a degree in electrical engineering and worked there as a student volunteer before starting his own A/V business and becoming an area vendor. He teamed up with Bridgewater Acoustics, the regional Bose dealer, to design the RoomMatch system for the space.

It was Brekke's first RoomMatch installation. "I'm delighted to be able to have line-array performance in an installed-system configuration," Brekke says. "It's the best of both worlds, in terms of performance for both music and speech intelligibility. The coverage we achieved was fantastic, on the floor and the seating areas. The RoomMatch system just has great performance characteristics."

Melanie Stocks, Director of the Brick Breeden Fieldhouse, agrees and notes the benefits that have arisen with the new sound system.

"Before last May, when the new system was installed, the ways we could use the Fieldhouse were rather limited," she explains. "We could do basketball games and track meets, and some music, but even those were subject to having less-than-pristine sound. But since the new system went in, it's been wonderful. There are no more complaints about the sound; instead, there are compliments about it, including from the additional customers who rent the space. The old sound system was holding us back. The new Bose system has changed all that."

"And in addition to better sound, it's also easier for us and our customers to use it," Stocks continues. "All of the controls are accessible through a Crestron LCD display. Our entire staff has been trained on it and we no longer need to keep a tech on hand. Working with Bose, with Doug and Black Box Design, and Jay [Bridgewater] at Bridgewater Acoustics, has been a great experience. The RoomMatch system has been the best thing to happen here for sound." ■

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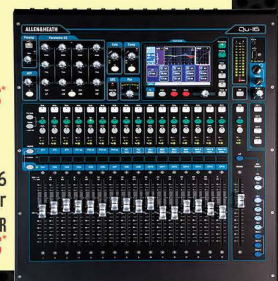
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# WYNONNA & CACTUS MOSER

## Bringing on 'The Big Noise'

By Robyn Flans

Wynonna Judd recalls a night in Coronado after a candlelit dinner with her new husband Cactus Moser where they took a walk on the beach. She hadn't been in the ocean since waves had overtaken her as a 5-year-old. Moser led her into the water that night and held her while a wave crashed over her head and helped her face her fears.

For her, it is a metaphor for everything life and music. Just like when

he came to her and told her he wanted to scrap the album she was making and start over. She trusted him. He felt the album she was making was very safe, and when her manager and Curb Records heard "Love It Out Loud," a song he, Judd and Brian Henningsen wrote for the Judds reality show, they became aware of what Moser could do and gave him the creative reins.

"He has taken me to a new level," Judd says. "He took me into the studio and did something no man has ever done. I've had great producers, don't get me wrong, but Cactus Moser has taken me somewhere I've never been, and as a 50-year-old woman who has been doing this over 30 years, that's kinda interesting."

Moser began producing back in his latter days as a member of Highway 101, and more recently produced a band called the Henningsens, as well as Pete Scobell. So he began an album for Judd geared more toward country music when he had a life-altering motorcycle accident shortly after their marriage in 2012. Everything was put on hold. He lost his leg and his left hand was crushed. Doctors told him he would never play again, but he was back on the road playing drums with Judd in three months. In the meantime, he was adjusting his thought process toward recording.



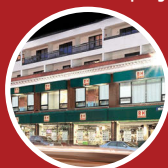
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"Country music is now an 18- to 25-year-old marketplace," Moser says. "Wy is still a very hip, can-do-all-this-stuff kind of singer, but I can still see the business writing on the wall. I thought, 'Why don't we do something that's radically artistic with amazingly crafted songs and...'"

He realized that what he was visualizing was "modern vintage music" that was created by upright bass in some songs, flatwound strings, and a combination of drums, including a Ludwig 1930s kick drum (no muffles), another set with tacked pig-skinned bottom heads on a 1937 kick, two toms and a snare.

"I started getting about four or five of these sets within a short period of time," Moser says, including a set that DW made him upon which he uses calfskin heads both on tour and in the studio.

Moser enlisted four-time Grammy winner Ryan Freeland (Bonnie Raitt, Ray LaMontagne, Ramblin' Jack Elliott) to help record the project—the bulk of which was done at Ocean Way Nashville, studio A—after the songs were formed in Moser's home studio. Ocean Way A has a Neve 8078.

Moser says engineer Leslie Richter was very helpful to both of them.



"To find someone who didn't try to get me the greatest new kick drum and snare drum sounds and brightest overheads and crispest cymbals was a real issue for me," Moser says. "There are amazing engineers in Nashville, but there is a lot of that perfection. I didn't want that."

Freeland used beyerdynamic M 160s on the toms, AKG D12s on the kick, Neumann U 67s for overheads and lots of ribbon mics for capturing the room and for acoustic instruments in general, he says.

"Cactus has really thought about his sound, so you just have to figure out how to capture it," Freeland says. "It's not so much manipulation. It's just a matter of how to capture what he's already figured out sonically on his end."

Freeland says his objective was to capture the live playing in the room, which was performed by the road band—the Big Noise, so named courtesy of what Moser's little boy growing up had called Led Zeppelin—comprising Justin Weaver on guitar, Dow Tomlin on bass, Tommy Hannum on steel and Moser.

Freeland and Moser returned to Freeland's L.A. studio, Stampede Or-

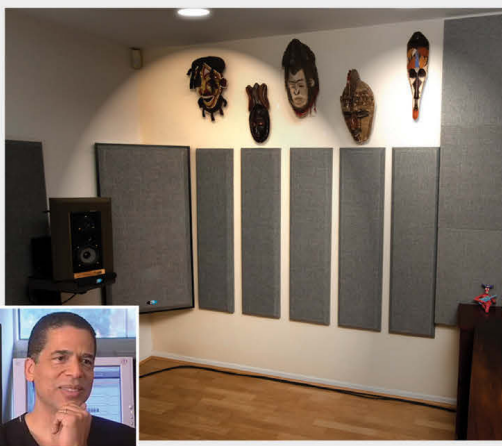
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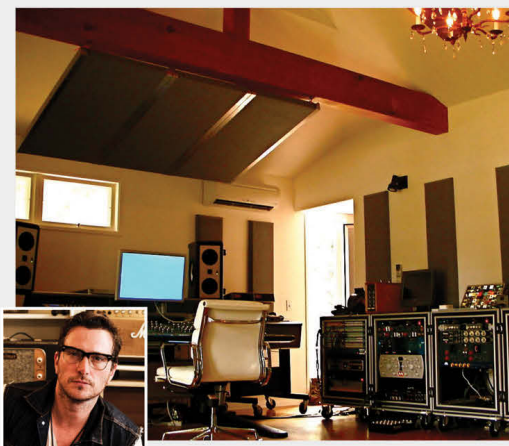
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Engineer/Producer - Avril Lavigne, Fall Out Boy, Pink, Sevendust, Hot Hot Heat, Simple Plan, The Donnas.

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



igin, to mix.

The entire process was a change for Judd.

"I had had a formula, which is weird to say," she admits. "I kinda had it down, and then Cactus says, 'I want you to...'"

One of those things was to sing live with the band.

She said, "Whaaat?"

"I said, 'Oh my gosh.' And that's how I made the record," she recalls. "If I went in and fixed something, it was because I said something out of frustration or sang something wrong."

She says Moser asked her to become more vulnerable and sing with "less growl."

"I said, 'Wait a minute, I worked really hard to get the growl, I worked really hard to protect myself and be tough,'" Wynonna says. "Now you want me to be tender and vulnerable? Are you kidding me?" So my voice sounds different sonically. It's in a very sweet-spot place a lot of times. I don't know if I've sung that way since I was with mom in my 20s."

Moser mentions a track called "Keeps Me Alive."

"She did re-sing it, and it just didn't have that 'Oh, my God' magic," Moser says. "So we kept the original."

For vocals they used a combination of side-by-side Neumann M 49 and AEA A440 mics.

Timothy B. Schmitt cut his vocals long distance from L.A. on "I Can See Everything," a song Schmitt wrote.

"He sent me back the vocal tracks and Wy immediately started weep-

***"I said, 'Wait a minute, I worked really hard to get that growl...Now you want me to be tender and vulnerable?'"—Wynonna***

ing they were so beautiful," Moser says.

Susan Tedeschi was also a guest vocalist on "Ain't No Thing."

One of Judd's favorites is "Cool Ya," an undefinable song with a beat that will leave you dancing around the room. Judd says she initially heard the song in a raw acoustic guitar form that evolved into a song that "does something to me that makes me jiggle."

"Then I walk in the studio—which is really a shed where you park your tractor—and I'm thinking this better be good or I'm going to kick your butt, and I hear the track and I go, 'Oh my God, oh my God.' I went nuts."

Judd feels revitalized, renewed, exhilarated and spirited in all aspects of her life, but musically she is hopeful again.

"I'm done with the '80s, I survived the '90's and I want to find out what it is that is going to keep me in this for the next 50 years, because it certainly can't be about radio and it certainly can't be about awards and it certainly can't be about statistics," Judd says. "[Cactus] helped me get back to the well and figure out what it is." ■

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



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

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

~ **John Rzeznik**

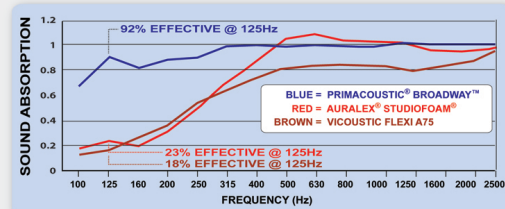
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# DRAŽEN BOŠNJAK CREATES HIS OWN VIRTUAL REALITY

## Composer/Inventor Tackles The Martian VR Experience

BY JENNIFER WALDEN

The term “virtual reality” used to conjure up images of gamer geeks in headgear and gloves, and maybe for some it still does. But all of that is changing. Big studios and companies that are backing VR, including Fox, Sony, Google, Oculus, Samsung and HTC, to name a few, are quickly transitioning from trade show demos to consumer commodities. 2016 will see the release of several serious consumer VR options, including the Oculus Rift, which feature integrated VR audio.

No matter the creative team, all future players in the VR field need one thing to succeed—quality content. Without that, VR will be just another passing tech fad. But there is real potential in this new medium, for both content creators and users. It offers an experience that’s unlike anything found in traditional entertainment (yes, 3D films, we’re looking at you, too). It’s a truly immersive experience.

So how, exactly, do you go about creating content for a completely interactive, 360-degree, three-dimensional environment? Sharing some hard-won insight is sound designer/composer Dražen Bošnjak, owner of the award-winning music and sound design studio Q Department in Tribeca, N.Y. He’s worked on more than 10 high-profile VR projects, including *The Martian VR Experience* produced by Fox Innovation Lab, RSA Films, and The Virtual Reality Company (VRC), and directed by two-time Oscar winner Robert Stromberg.

“The Martian VR was by far the most complex in terms of technology and experience,” says Bošnjak. (*The Martian VR Experience*, coming to VR platforms later this year, has already generated quite a buzz, most recently at the Sundance Film Festival.) “It was great to see people come out of the VR experience. They were crying and sweating because they feel like they barely survived this zero-gravity float to the Hermes. It’s really amazing to see people’s reactions. I savor every moment of watching people go through it.”

To achieve that bodily fluid-inducing reaction, Fox Innovation Lab and VRC needed to hybridize the Hollywood feature film with an interactive game to produce a 20-minute cinematic VR adventure where a player feels like Mark Watney on Mars, trying to reach the rescue rendezvous with the spaceship Hermes. It’s all about believability; using visuals and sound to trick the player’s mind into thinking the experience is real.

Dražen Bošnjak holding a Mach1™ proprietary head tracking controller at Q Department Studios in Tribeca, New York.

Photo: Dean Zulich



On the sound side, it was up to Bošnjak to re-create *The Martian*’s Hollywood-caliber sound design in a way that would work for an interactive experience. As is often the case, nearly all the elements created specifically for the film were not useful as game assets. “The perspective is different for film and games,” explains Bošnjak. “In a film, you watch the action unfold and it happens the same way every time. In a game, you control the action, and it’s different every time you play, therefore numerous different assets are needed to account for the unpredictability of the action. Adding interactivity makes the sound asset list grow exponentially.”

To craft the sound for *The Martian VR Experience*, Bošnjak would go inside the VR project to get an idea of how he wanted to approach a particular moment. Then, in his studio, he’d use traditional tools and best post sound practices to create the sounds, always keeping in mind that what he was creating would end up as interactive, multidirectional, biphonic audio.

“The goal is to bring together the videogame aspect of VR with the aesthetic of traditional audio engineering,” he says. “I wanted the sound for *The Martian VR Experience* to have real analog and vintage digital gear, like Neve and API EQs, Thermionic’s Culture Vulture distortion, the Eventide H3K Harmonizer, the old blue MXR Flanger, and the Lexicon 224XL. The real gear, not the plug-ins. I was using really old-school processing on the computer/robotic voices to bring that sweetness and real analog presence inside these environments. It fits hand in glove. It sounds luscious. We are not using any data compression on our sounds. There is no additional processing and filtering during playback or render. The way we created our mixes is what you hear on playback.”

Bošnjak also created several music tracks to go along with a selection of original compositions featured in *The Martian*. To make the film music interactive, it was carefully edited with supervision from director Stromberg and the VRC team.

“There’s a whole different approach to creating music when it’s for



interactive media versus when you're cutting music for a scene that will always play the same way every time," Bosnjak says. "That was extremely challenging since we were using a beta customized version of Unreal Engine, based on UE 4.9—with no support for middleware or third-party plug-ins. We had to come up with our own mathematics that would drive the interactivity of the sound."

For example, during the climactic zero-gravity float toward the Hermes, Bošnjak says, they broke that down into four sections and ran their own clock to create an imaginary tempo grid and timed the user's actions. Then they could quantize the triggering of the interactive music parts to the imaginary tempo grid and use that data to seamlessly play different parts of the music.

"We wanted it to seem like the music just happens to hit all the important moments, but actually it was designed that way," Bošnjak says. "It was a really thrilling moment when we put the music inside of Unreal Engine and I could experience floating around above the capsule in zero gravity and everything was working so seamlessly. It was a rewarding experience and very fun to do."

## NEW MEDIUM, NEW TOOLS

By the time Bošnjak started work on *The Martian VR Experience* he had already established sound tech company Mach 1. Working with Mach 1 Technical Director Dylan Marcus and a team, they designed a set of proprietary sound tools that allow Bošnjak to more effectively create and audition multidirectional, biphonic sounds in a virtual reality space.

"The old tools are completely incompatible," Bosnjak explains. "You can sit at the mixing board and plug your headphones in, but how do you simulate yourself looking around? How do you design sound in a way that will react to the direction of your viewing? That was really how hardcore our problem was. We developed tools that let us create multidirectional, multidimensional sound, and they allow us to observe the sound from within that perspective."

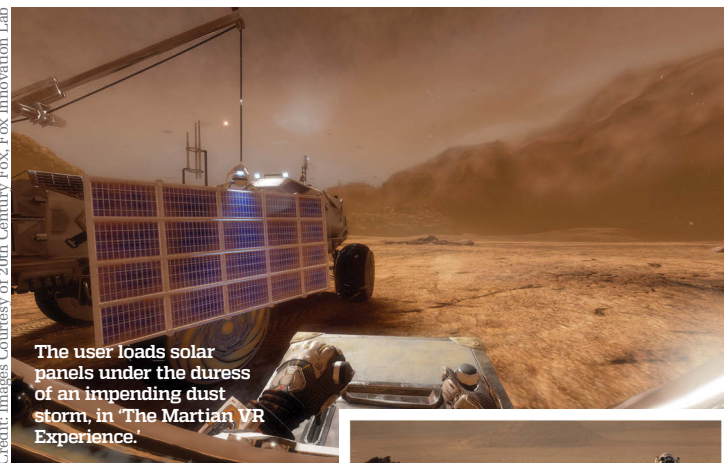
One issue they were quick to tackle was how to audition sound in real time in VR without having to first implement it into a game engine. Mach 1 devised a VR playback system using a pair of headphones equipped with head tracking. This allows Bošnjak to hear how his sound changes as he moves his head, a major component of VR sound.

"That is where it can get tricky for sound designers, composers and engineers," he says. "Every time we needed to observe our work, we had to have the sound integrated back into the VR project. That means a team of tech people would have to be waiting around to do these laybacks. With our tool, you can hear it back immediately in real time. You just put these headphones on and you can listen around inside the VR project."

After working with this tech for so long, Bošnjak says he sometimes feels underwhelmed with traditional headphones and playback formats where the sound environment doesn't change when he turns his head. "It reminds me of small children who grew up with iPads and smartphones. They get irritated when screens are not interactive. I'm developing this addiction to multidirectional, interactive sound."

In conjunction with head tracking, another important consideration for VR sound is spatialization—producing the sound in a way to give the illusion that it is coming from a specific position in a three-dimensional space. Sound waves react to objects in the environment, bouncing off walls, floors, ceilings and bodies. In VR, sound should do the same.

Credit: Images Courtesy of 20th Century Fox, Fox Innovation Lab



While there are some plug-in options available for tackling spatialization, Bošnjak and his team had to develop their own method years ago when no such tools existed. His solution was to create multidirectional recordings and multiple mixes, each from a different fixed perspective. When loaded into the game engine, the proper mix would play for any given perspective. Transitions happen seamlessly between mixes.

"There was no running our mixes through poor-sounding DSP filtering," he recalls. "A lot of people are running their mixes through HRTF (head-related transfer function) filters, which are supposed to simulate the shape of your ear and how sounds react to your head and body, but there are so many problems with it. There is such a misconception in how it is being used. Unfortunately, all it is doing is degrading the original sound and often adding latency to the directional information if it is rendered during playback. Once you stop degrading the sound, you realize, 'Wow, we really need audio engineers here to capture, create, and mix quality audio.'"

## TRADITIONAL TECHNIQUES

Bošnjak explains that because VR is more immersive than 2D games, it's not as forgiving for lapses in sound standards. "We need all of the audio talent we can find to help us make the sound in VR as beautiful as it would be for a feature film," he says. "I want that artistry in VR. We can't leave the sound solely up to the technology side of it, at least not yet. We need the nearly century's worth of experience in producing great sound and soundtracks."

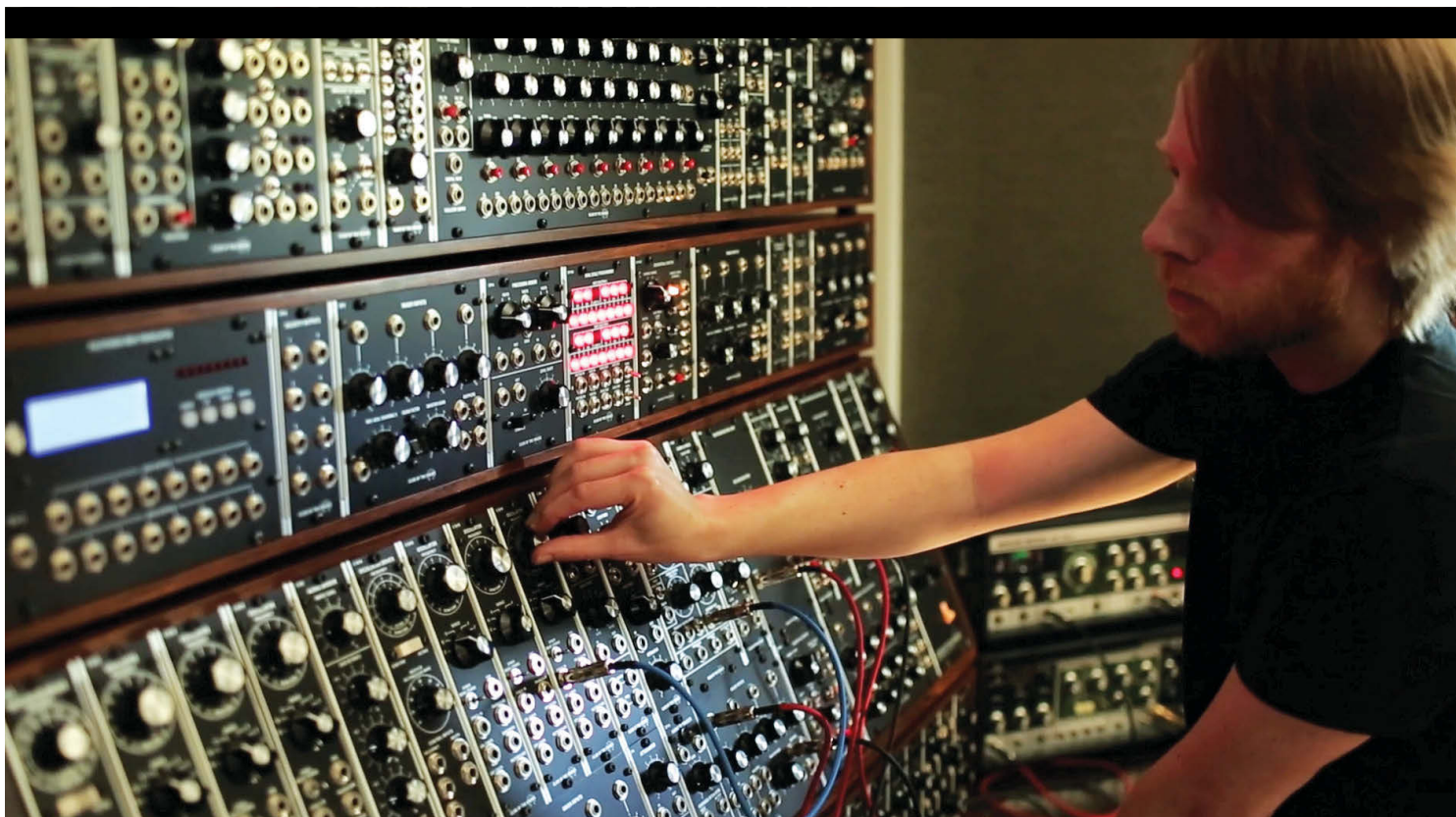
The problem right now, Bošnjak points out, is not having a suitable workflow that allows engineers and professionals across the audio industries, from film and music, to get involved.

"We don't have the tools that will allow them to get their hands inside the VR world," he laments. "But all the skill sets they have for making something sound great, we need those in the VR world."

While analog gear remains relevant, this new medium requires new tools, new methods and new workflows. In his years of creating sound for VR, Bošnjak has been identifying what's missing from his VR workflow that he was able to do before.

"We made prototypes that I use when I'm doing my work," he says. "I want to make hundreds and thousands of copies of these tools we're creating and put them in the hands of the talented audio engineers so they can create for the VR environment, too. The best thing would be for the VR tech community to embrace the traditional audio engineering community, and together we can create a first-class experience." ■





# BILL BROWN

## For the Love of the Game

BY MARKKUS ROVITO

Games are always a combination of skill and luck, with the ratio of both depending on the game. Well, Bill Brown has both a knack for making the music that gamers play games to (skill) and for leveling up in life (luck?).

The composer/producer of music for games, films and TV shows such as *CSI: NY* (full series) and Syfy's *Dominion* (season two) caught a couple of breaks in life that could be called lucky.

As a young man newly arrived in L.A., Brown worked in sound design, editing and mixing for a couple of years to pay the bills, when an introduction to Scott Gershin at the audio post house Soundelux got his foot in the door. He made two music demos for Soundelux for two AAA games, that is, some of the highest-budget and most-anticipated titles. Both demos were accepted, and that led to the next nine years of Brown's life working on several games a year at Soundelux while scoring small film and TV projects on the side.

Soundelux was a great place for making connections, and in 2004 when Brown got the chance to try out for *CSI: NY*, he again made some demos and got the job straightaway. Boom; another nine years of his life was in the works—no gap in the resumé.

Now, many people like to say you make your own luck. Bill Brown makes music—lots of it, and well. So if luck had anything to do with it, that's not for lack of output.

"I was working on four AAA game titles simultaneously back in 2004 when I got the call to interview for scoring *CSI:NY*," Brown says, "and that changed the course of my career."

A lifelong fan of games, movies and TV, Brown wasn't really steering himself toward one medium and away from another. He just loves to make music and was following great opportunities that arose. He's continued to sprinkle in music for games while TV scoring dominated most of his year. For example, he did the music for the *Captain America: Super Soldier* game in 2011 and is currently working on a yet-to-be-named Chinese MMORPG (massively multiplayer online role-playing game).

Yet Brown definitely appreciates some key differences between scoring for games and for TV/film.

"The important thing to remember with scoring games is that players are steering it, like a director," he says. "And they might have to live with the score for longer periods of time as compared to film or television; you have to create a score that will work for each different scenario. Film and TV are the same each time you watch them, so I have the opportunity to get specific to picture. The music has to have a soul regardless."

"There is something exciting about finding a new layer in a scene or a game level and expressing something musically/emotionally that connects the audience on a deeper level. It's really the same working on game projects, television or films: I can write cinematic, complex, emotionally nuanced music that connects the audience on a visceral and emotional level."

With the beginning of *CSI: NY*, Brown built himself a home studio, where he's become quite the one-man gang. He plays keys, guitar and



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two, he demonstrates mastery of the “epic” score: big, punctuating drums, sweeping strings and passionate background vocals singing longing sustained notes in a vaguely Middle Eastern style. Yet he can work huge synthesizers and guitars into the mix, as well, without them sounding out of place. It’s a good thing, too, because one of his most prized possessions, a recent Moog modular synth, isn’t going to pay for itself.

Brown even mixes and masters most of his own work. The exceptions are when he gets to work at larger facilities and use engineers. However, tight budgets don’t always allow him that, so he’ll often bring single musicians—such as cellist Tina Guo and guitarist George Doering—into his own studio to liven things up.

For recording solo stings, Brown uses AKG C414 condenser mics going through Avalon Vt-737 preamps, no compression, some noise reduction and Lexicon reverb. He tends to record electric guitar direct through Avalon DIs to Apple Logic, using Logic’s amp simulators. Doering still uses the Line 6 Pod for his guitars with great results, and Brown loves the Strymon effects pedals and all the Moog Minifoogers and Moogerfoogers.

Of course, if you can’t always record an orchestra, you have to go for sound libraries, and Brown loves the Spitfire Audio sample collections, as well as the ProjectSAM, Heavyocity and 8Dio collections, for

bass, and he writes, arranges and records the music.

Stylistically, he’s hard to pin down, as well. He has about seven demo reels, from horror to romantic comedy, for a reason. When working on a *Lord of the Rings* game or other project, he can nail that whimsical fantasy sound that’s probably the leading source of employment for flutists. The cinematic, heavy guitar riff-based instrumentals of the *Command & Conquer: Generals* titles were famous in the game world. And on one of his latest and greatest efforts, *Dominion* season



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all of which he participates in beta testing. "I was using 8Dio's newest strings and choirs on *Dominion* season two months before they were released to the public," Brown says. "So cool!"

"Even though I'm not a beta tester for them, I'm really excited about Spitfire's newest additions," he continues. "I always find their stuff inspiring."

"Luckily" for Brown, he's on the inside of the business looking out, and not likely to be hard up for work anytime soon. But he does see the competition for scoring work heating up at the same time that more and more great content comes out every year. For younger people just getting started, he has a different idea than getting into sound editing like he did.

"I would instead recommend young composers try to get assisting gigs with established composers to really learn the ins and outs of the trade," Brown says, "and maybe even expand the relationship into a partnership at some point if you're really humble and great at what you do. Or if you've established relationships with young directors, producers and/or developers early in your career, just make it happen yourself. With enough education and the right connections, it's definitely possible."

Also, new game composers don't necessarily need to know how to use the standard Audiokinetic Wwise sound engine and audio imple-



mentation tool for games, but in keeping with Brown's spirit of learning, knowing and doing everything, he says, "It can be useful for sure. I always have a team doing the interactive programming for me on game projects, so I can focus on writing the best score possible. For me, the quality of the music is first and foremost, but knowing how the implementation tools work—how the score becomes reactive/interactive within the structure of the game—is also very important. So basically, do everything!" ■

## Achieve Perfect Clarity



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# 10 TIPS FOR SMALL-ROOM ACOUSTICS

## Practical Solutions for the DIY Studio Owner

by Wes Lachot

When *Mix* editor Tom Kenny asked me to write this article, he stated that the emphasis should not be on professionally designed rooms, or on bedroom studios, but somewhere in between. This is where so many people are these days, creating professional content for the gaming, film and music industries, but doing so in makeshift surroundings—either adapted spaces or purpose-built spaces made in a DIY fashion. The content created in this type of space needs to relate well to the outside world just as much as content made in professionally designed spaces; you need to know that your mixes will translate on other monitors and in other rooms. For this to become a reality, we need good acoustics, meaning a reasonably flat mixing environment.

There are quite a few things that can be done to improve the accuracy of DIY spaces. Some of the ideas put forth here can be employed after the room is built, and some, like room size, are decisions to be made early on.

### TIP 1: ROOM SIZE AND PROPORTIONS

When choosing a room for use as a control room, whether it's a converted garage or basement room or some other room, you want as large a space as possible—try for at least 18 feet deep and 14 feet wide. You don't want a perfectly square room. Good room ratios can be easily researched, but the bottom line is that you want to stay away from rooms that are perfectly square, or that have a ratio of length to width of 1:1.5. Interestingly, the ratios of 1:1.4 and 1:1.6 are very good, but 1:1.5 is not good at all. If you have the luxury of building the room from scratch, you should use good ratios for all three dimensions, as this will help with the low-frequency response of the room.

### TIP 2: SYMMETRY

Care should be taken to find or build a control room with exact left-right symmetry. Rooms with a dogleg shape, or rooms where the monitors are not mounted equidistant from the front to back line of symmetry will result in the two main monitors sounding different. We

have all probably experienced the effect of an acoustic guitar sounding brighter on one side of the mix than the other; this is often due to poor symmetry of the monitors with respect to the room. Many DIY control rooms can be improved dramatically just by getting this one thing right.

If you have no choice but to use a room with an asymmetrical shape, see if it's possible to put the monitoring on an end of the room that does have good symmetry; this is the part of the room that's the most critical for proper stereo imaging.

### TIP 3: MAIN MONITOR PLACEMENT

All monitors must be equidistant from the engineer's ears. The front listening triangle should be equilateral, with monitors angled 30 degrees toward the listener from straight ahead. The triangle point should be 18 inches or so behind the engineer's ears. Surround monitors, however, should be pointed directly at the engineer's ears, at an angle of 110 to 120 degrees, rotated from straight ahead.

Placing the monitors directly against the wall (1/2-space placement) will increase the low-frequency output and will do so in a fairly uniform manner. Placing the monitors out from the wall will create a low-frequency null that is dependent on the distance from the wall. The null (known as a quarter-wavelength null) can be quite deep—more than 20 dB—so it's something to consider carefully.

This null can be calculated by dividing the speed of sound (1,130 feet per second) by 4, and dividing the result by the distance of the voice coil from the wall. So if the voice coil is 4 feet in front of the front wall, we would get 1,130 divided by 4, divided by 4 feet, giving us a null at about 71 Hz. If the distance from the front wall were reduced to 2 feet, this null would be at 142 Hz, and a 1-foot distance from the front wall would move the null to 284 Hz. So moving the monitors toward the wall moves the null up out of the critical bass region, at the expense of increasing the bass response in general. (However, many monitors offer a switch for 1/2-space mounting, which

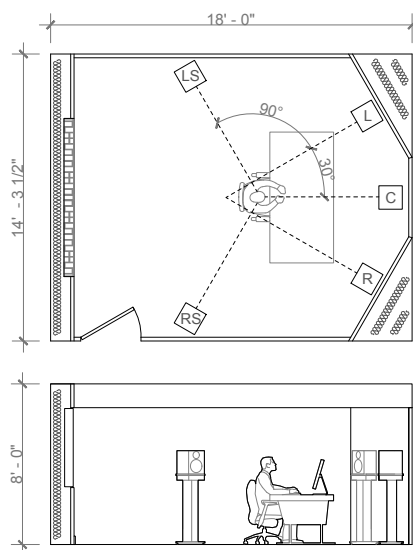


Figure 1

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compensates for this increase in bass response.)

If the monitors are not placed directly against a wall, deep bass trapping should be placed between the wall and the monitors—as deep as possible. It is critical that this be done. Sometimes we create traps on the front wall that are of variable depth, following the 30-degree angle of the front monitors (see Figure 1).

#### TIP 4: ENGINEER'S POSITION WITHIN THE ROOM

The engineer's position in most moderately sized rooms should be somewhere in the front half, and definitely not exactly halfway front to back. We have found that usually somewhere between 33 to 42 percent from the front of the room works best.

The exact distance from the front wall relates to the distance from the rear wall, and 10 feet is recommended from the engineer's ears to the rear wall due to the rear wall reflections, which cause a nasty quarter-wavelength rear wall bass null similar to the front wall null. Unlike the front wall bass null, which has a fixed frequency determined by the distance of the monitors from the front wall, the rear wall null's frequency is dependent on where you are in the room. So if you stand 4 feet from the rear wall, you perceive a 71 Hz null, but if you double that distance to 8 feet, the null drops to 35.5 Hz. By increasing the distance of the listener to 10 feet from the rear wall, we move that null frequency down to 28 Hz, where it becomes less audible and consequential.

In addition to the quarter-wavelength rear wall null, there is also a  $\frac{3}{4}$ -wavelength rear wall null, and this can only be dealt with by using spe-

cific bass trapping techniques (described below in Tip 7).

#### TIP 5: NEAR-FIELD MONITOR ORIENTATION

Two-way near-field monitors should always be placed in the upright position, with the tweeter over the woofer. This is because two-way monitors have a much wider dispersion pattern in the lateral dimension than in the vertical. If the monitors are placed on their sides, as they are often placed on the meter bridge, you'll hear severe phase cancellations around the crossover frequency as you move from side to side along the front of the console. Ideally, the monitors should be placed on stands behind the console to avoid console reflections.

#### TIP 6: FREESTANDING OR IN-WALL MONITORS?

The reason many pro rooms use wall-mounted monitors for their mains is that front wall reflections are eliminated when the monitors are mounted flush with the wall in a so-called infinite baffle configuration. So it is worth considering if you are dealing with large monitors (let's say more than 100 cubic liters in volume). But call a professional. You only get one chance to get it right.

Whatever your situation, we always recommend ear-level monitoring, meaning that the angle of the monitors is only a few degrees tilted—not severely angled like you may have seen in control rooms where monitors are located up high over the wide front glass. Keeping the vertical mounting angle reasonably close to vertical means that you are more likely to hear an accurate balance of highs to lows as you move about the room,

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and that the frequency balance experienced by those in the rear of the room will not be too different from what the engineer is hearing.

#### TIP 7: REAR WALL BASS TRAPPING

You want to have broadband bass trapping at least 12 inches deep on the rear wall, mainly to reduce the rear wall reflection bass null but also to help flatten the room in general. Any diffusion that may be added to the rear wall should be in addition to this broadband absorption. Additionally, if flatter frequency response is required, it is possible to treat the  $\frac{3}{4}$ -wavelength null described in Tip 4 by using frequency-specific membrane or Helmholtz trapping on the rear wall, again, in addition to broadband trapping. This frequency-specific trapping would affect only the sound at the engineer's position. The idea is to calculate the frequency of the  $\frac{3}{4}$ -wavelength null at the engineer's position, then build a tuned absorber on the rear wall to tame that frequency.

#### TIP 8: OVERHEAD BROADBAND TRAPPING

The one place in a room that deep traps can be placed without giving up floor area is on the ceiling. We recommend ceiling clouds at least 12 inches deep, if there is adequate ceiling height. There usually is. Even in a room with an 8-foot ceiling, adding a cloud whose face is 7 feet from the floor leaves enough practical height for most people. The cloud should be placed so that it covers most of the room, to gain the most broadband benefit and to reduce the effect of direct reflections from the monitors. Standard dense

fiberglass or rockwool covered in fabric works well for this.

#### TIP 9: TREAT SIDE WALL FIRST-REFLECTION POINTS

These points are fairly easy to locate, using either geometry or a mirror (looking into the mirror from the engineer's position and noting where along the wall you are able to see the monitors). It is absolutely essential for good stereo imaging to treat these reflection points relative to the engineer's position, using 2-inch deep fiberglass traps or something similar. If you want to extend the area with good stereo imaging into the rear of the room, then it's necessary to treat the entire side walls. This can start to create a pretty dead room, so in this case we recommend something like RPG BAD panels for treating the rear side walls, as they are much less absorptive at mid and high frequencies (where they offer a combination of absorption and diffusion), and they also offer better low-frequency absorption due to the Helmholtz resonator effect.

#### TIP 10: FRONT WALL TREATMENT

Treat the front wall with absorption or BAD panels, if you are doing surround monitoring, since the reflections from the monitors will hit the front wall and reflect back into the engineer's ears out of phase. If the room is for stereo monitoring only, this may not be necessary; the front wall bass traps will absorb omnidirectional energy emanating from the near-fields. ■

Wes Lachot is president of Wes Lachot Design Group. [www.weslachot.com](http://www.weslachot.com)

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# [REALLY] SMALL PRO-GRADE POWERED SPEAKERS

BY STROTHER BULLINS

Allow me to emphasize: Here we will discuss really small powered speakers/monitors for mobile/desktop production, multimedia and gaming applications. At the recent NAMM Show, the smallest pro-grade powered speakers I'd ever seen or heard before were at the EVE booth. They were really small yet didn't sound small at all. Fact is, our industry provides lots of small powered speaker options, many complete with front-panel inputs and volume adjustment.

If you want to produce, record, mix, write/compose, and/or simply live on your TV tray indefinitely, the following are production-worthy monitoring options to make that fantasy a reality, as I see it.



## ADAM AUDIO ARTIST 3 AND A3X

Germany's ADAM Audio with its X-ART folded ribbon tweeter produces some of the finest sounding, reasonably priced powered monitors in pro audio. The bi-amped A3X provides Class-A/B power at 40-watts peak, per driver, comprising a 4.5-inch carbon fiber mid-woofer and 2-inch (4-inch folded) X-ART tweeter. It features a front panel on/off switch, volume knob, XLR and RCA inputs,  $\pm 4$  dB of tweeter gain, and a five-year limited warranty. Specifications include a 10x6x7.5-inch size, 10.1-pound weight, 60 to 50k Hz frequency response and 106 dB maximum SPL per pair at 1m. Unique features include Stereolink, allowing volume changes for both speakers while adjusting just one.

Classified as "multimedia speakers," ADAM's ARTist 3, available in black or white,

feature both analog (XLR, RCA, 3.5mm mini stereo) and digital (USB) inputs. They offer nearly the same specifications of the A3X (amp type/wattage, size, weight and woofer and tweeter, etc.), but perform differently due to port positions (A3X's dual front ports vs. ARTist 3's rear port), differences in cabinetry and the quite-valuable USB input. The ARTist 3 is approximately \$50 (street) more than the A3X.



## AVANTONE ACTIVE MIXCUBES

Borrowing heavily from the design of the classic Auratone 5C Sound Cubes of yore, these powered, full-range mini reference speakers feature, by design, limited top end (90 to 17k Hz) and a single full-range driver—no crossover point. As such, they mimic the "real world" limitations of typical consumer and industrial audio speakers, making them invaluable when paired with traditional two- or three-way systems. The Active MixCube offers a sealed cabinet, shielded and built of thick MDF and advanced materials (rather than the half-inch particleboard of the original 5C) and features a 60W Class-A/B amplifier featuring combo XLR/TRS/TS inputs; 104 dB of maximum SPL at 1m; -30 dB to +6 dB variable gain control on its rear panel; on/off switch; and it is 7.5 pounds, not to mention a true cube (6.5x6.5x6.5 inches).



## CERWIN-VEGA XD3 AND XD4

From a pro audio perspective, Cerwin-Vega is best known as a source of fine live sound and portable P.A. equipment. With its XD Series, the brand proves its mettle in multimedia speakers, too. Unique features of these stereo two-way speaker sets include wooden cabinetry; front panel volume knob, and 1/8-inch headphones and aux in jacks; available remote control and auxiliary 8-inch, 80W peak-powered subwoofer. Each XD3 cabinet provides 15 W of peak power, 3-inch woofer, an 88 to 21k Hz frequency response, RCA rear panel input, 8x5.5x6.5-inch size and 6.5-pound weight. Each XD4 cabinet offers 20W of peak power, 4-inch woofer, 75 to 21k Hz frequency response, RCA or balanced 1/4-inch TRS rear panel inputs, 9x6.1x8-inch size and 13.6 pounds. Both the XD3 and XD4 feature a 3/4-inch soft-dome tweeter. Of course, it wouldn't be Cerwin-Vega without a "Vega Bass" switch, enhancing bass response on either model via an additional rear panel switch.

## EVE AUDIO SC204 AND SC203 MASTER/ SLAVE SYSTEM

The smallest speakers in EVE Audio's professional studio monitor line, the bi-amped SC204 provides 50 W of peak power, per driver, comprising EVE's proprietary SilverCone woofer and AMT RS1 tweeter. It features a front pan-



el volume knob, XLR and RCA inputs, detailed DSP-based frequency adjustment via 24-bit/192 kHz Burr-Brown conversion (high-shelf filter, desk filter boost, desk filter cut and low-shelf filter), and more. Specifications

include a 5.7x9x7.7-inch size, 8.4-pound weight, 64 to 21k Hz frequency response and 96 dB maximum SPL per pair at 1m. Unique features include a large rectangular rear bass port.

Offering a folded design tweeter like the SC204's AMT RS1 but in less than half the size, the bi-amped SC203 Master/Slave System (30 W x 30 W per cabinet) is specifically designed for compact pro desktop use with unique features such as EVE's FlexiPad, a v-notch shaped orange rubberized decoupling and angling pad at 0, 7.5 and 15 degree variations. It offers both analog and digital input with RCA and digital optical and USB connectivity. Like the SC204, the SC203 pair features a front panel volume/multifunction input knob and DSP functionality, yet via 24-bit/192 kHz Cirrus Logic conversion and parameters including high shelf, low shelf, LED brightness, input selector and speaker position—flat, desk and console. Specifications include a 4.5x7.5x5.3-inch size, weights of 4.1, 3.7, and .86 pounds (master, slave and FlexiPad, respectively), 62 to 21k Hz frequency response and 94 dB maximum SPL per pair at 1m.

#### FOCAL CMS40 AND XS 2.1

Premium French speaker manufacturer Focal also offers two really small monitors, the CMS40 and XS 2.1 Speaker System, targeting compact/mobile professional and multimedia/desktop applications, respectively. The bi-amped CMS40 provides Class-A/B power at 25W peak,



volume knob; XLR and RCA inputs; low- and high-frequency shelving; and included decoupling table stand, four rubber feet, two height adjustable spikes; phase optimization plug and removable tweeter and woofer grilles. Specifications include a 9x6x6-inch size, 11-pound weight, 60 to 28k Hz frequency response and 97dB maximum SPL per pair at 1m.

Classified as multimedia speakers, the truly unique three amp/three component XS 2.1 offers 30W peak per speaker and 70W peak for its sub-woofer with volume adjustment via Mac, Windows or Linux UI or the included remote.

#### FOSTEX 6301 AND PM0.3

There are few speaker products in pro audio as universally useful as the Fostex 6301N Series Active Monitor at \$250 street, each. The 6301N Series comprises small sealed



powered speakers built for various monitoring applications thanks to four different I/O configurations. I recently reviewed the 6301N's NE version, updated and repackaged by Fostex, offering analog (electrical-



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ly balanced) XLR and (unbalanced) ¼-inch inputs. Weighing in at 5 pounds and measuring a compact 4.77x4.7 inches, the 6301N Series speaker features a 20W Class-D digital amplifier; 4-inch full-range speaker with die-cast aluminum frame; 98 dB SPL maximum output and a 70 to 15k Hz frequency range. Its front panel power and volume controls are handily recessed into its aluminum enclosure, and an optional wall-fitting angle mount, the EB-6301, enhances the 6301N's flexibility. It's a true workhorse powered speaker, not flashy in any way, and truly useful in just about every application.

The PM0.3 is Fostex's "first three-inch, 2-way powered monitor speaker system," confirms the company. The bi-amped PM0.3 provides Class-D power at 15W peak, per driver, comprising a 3-inch cone woofer and ¾-inch soft dome tweeter. Specifications include RCA and ⅛-inch stereo mini inputs; a 3.9x7.3x5-inch size; 6.3-pound weight; 110 to 20k Hz frequency response and 97dB maximum SPL per pair at 1m. The PM0.3 is available in black, gray and white finishes.

#### GENELEC 8010A AND 8020C



Extremely small yet a Genelec throughout—with many of the company's proprietary technologies—the small 8010 is a two-way Class-D bi-amplified monitor providing 25 W peak, per driver, to its

3-inch woofer and ¾-inch metal dome tweeter, the latter featuring a Direct Control Waveguide. Specs include XLR input, a 7.7x4.75x4.5-inch size, 3.3-pound weight, 67 to 25k Hz frequency response, and 96dB maximum SPL at 1m. Other features include Intelligent Signal Sensing circuitry to switch the 8010 to standby when no audio input is present, and Genelec's ingenious acoustic decoupler, the Iso-Pod Stand. Front panel volume control is included, too.

If the 8010 is just a bit too small, its bigger brother, the 8020C, is another good option featuring a 4-inch woofer and slightly different specs.



#### GIBSON PRO AUDIO LES PAUL 4

The smallest Les Paul monitor from Gibson Pro Audio, the Les Paul 4 is visually striking and a great sounding pro-grade powered monitor. Though Gibson owns KRK Systems and Cerwin-Vega, this first-ever Gibson powered studio monitor is a ground-up, brand new design. Available in cherry, cherry burst and tobacco burst front fascia finishes with protective woofer grille, the LP4 is a two-way bi-amped monitor featuring 103 W (peak) of combined amp power with a 4-inch carbon woofer, 1-inch "diamond like" carbon-coated titanium tweeter, 55 to 47k Hz frequency response, and 109dB maximum SPL at 1m. RCA, balanced TRS and XLR inputs are provided in this 10.1x6.5x9.5-inch, 10.5-pound enclosure. Manual rear panel controls include volume and dual stepped EQ adjustments: bass and treble, respectively, at -4, -2, -1, 0, +1, +2 and +4 dB settings.



#### IK MULTIMEDIA ILOUD MICRO MONITORS

Best known for their innovative, pocket-sized iOS and Android audio performance and production tools, IK Multimedia is right on target with its iLoud Micro Monitors, Bluetooth-compatible and touted as "the smallest studio reference monitor in the world." Whether it's the smallest is debatable—each cabinet measures approximately 7x5.3x3.5 inches—yet this is a super-useful and compact mobile monitoring package. Sold as a pair, the iLoud kit includes two 2-way active bi-amped monitors featuring 3-inch woofer and ¾-inch silk-dome tweeter with 18 W and 7 W of peak Class-D amplification per driver, respectively. Other features include adjustable acoustic settings, RCA and ⅛-inch analog inputs per speaker.



#### KRK ROKIT 4 AND VXT4

KRK provides great "really small" monitoring options at very affordable prices. Having reviewed both Rokit and VXT Series monitors in several versions over the years, I'd easily recommend the compact Rokit for aspiring, budget-conscious mobile recordists, while the VXT Series is among my favorite high quality yet value-packed pro-grade studio monitor offerings.

In its third generation package, the Rokit 4 is available in black or white, provides two-way monitoring via 4-inch aramid glass composite woofer and 1-inch soft-dome tweeter with bi-amplified Class-D power, 20 W and 10 W per driver, respectively. Its frequency range is 51 to 35k Hz. It provides 100 dB of maximum SPL at 1m, and XLR, TRS, and RCA inputs are provided. Size and weight specs are 8.3x6x8.8 inches and 8.7 pounds.

The smallest VXT is built just like its bigger brothers, offering a lot of value for the price. Features include rounded "radiused" enclosure edges, 4-inch woven Kevlar woofer and 1-inch silk-dome tweeter with bi-amped Class-D power at 30 W and 15 W peak ratings, respectively. Other details include front-firing port, 107 dB of maximum SPL at 1m, 66 to 22k Hz frequency response, and XLR and TRS input. Size and weight specs are 10x7.34x7.48 inches and 14 pounds.



#### MACKIE CR3 AND CR4/CR4BT

Marketed specifically as multimedia monitors, Mackie's CR Series are powerful small bi-amplified two-way speakers featuring 3-inch and 4-inch woofers paired with ¾-inch silk-dome tweeters and lots of mobile production-friendly features. Sold in a pair, each CR package in-

*Continued on p. 65*

# NEW EVE SC203

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# MIX REGIONAL: NEW ENGLAND

## BSO Unveils WSDG-Redesigned Control Room



Photo: PK Pandey

Recording engineer Nick Squire, WSDG architect/acoustician John Storyk, BSO Director of Concert Operations Christopher W. Ruigomez, award-winning sound engineer Shawn Murphy and (seated) BSO Conductor Andris Nelsons



Photo: Cheryl Fleming

Boston Symphony Orchestra Control Room, designed by WSDG

A cultural icon for 134 years, the Boston Symphony Orchestra is world-renowned for the excellence and diversity of its performances. After more than 45 years of service in the broadcast and recording of thousands of concerts, the Symphony Hall's Deutsche

Grammophon Gesellschaft Control Room has earned a major upgrade.

In 2014, BSO Director of Concert Operations Christopher W. Ruigomez, recording engineer Nick Squire, and Grammy Award-winning Senior Engineer/Technical Director for BSO's Tanglewood Festival Tim Martyn convened to discuss the control room overhaul.

"The BSO's 400 square-foot control room had been in constant service since 1970," said WSDG Project Manager Matthew Ballos. "During our initial site visit, our team performed extensive measurements and acoustic tests and began to devise a program that both enhances the CR's functionality and future-proofs it to meet the rapidly shifting 21st century technology requirements."

A ground-up acoustic treatment solution was developed, which included splayed perforated wood panels, slotted wood panels, wood diffusion planks and low-frequency absorption units. A new custom ceiling cloud was installed. The WSDG team also designed four new producer workstations and two up-facing equipment racks that can be rolled out of the way when not in use.

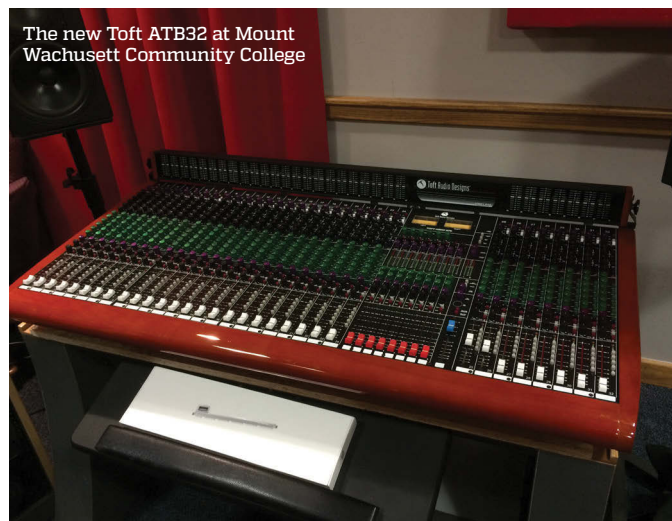
The WSDG and BSO team were in agreement that the existing Yamaha DM2000 console still offered years of service. Thanks to a generous contribution by Bowers and Wilkins, the CR now features a 5.2 surround system, consisting of 802S mains and 805D surrounds.

"The space was stripped to the bare walls, and the entire room experience was refreshed and modernized while fully respecting the BSO and Deutsche Grammophon legacy. This room is now equipped to provide many more years of service," Ballos says.



## Elliot Scheiner Working With Idina Menzel, Phish

Eight-time Grammy Award-winning engineer Elliot Scheiner has been working with Idina Menzel on the 60th Anniversary special for ABC. Scheiner says that over the past two months, he also did two weeks with Phish at both MSG and Mexico.



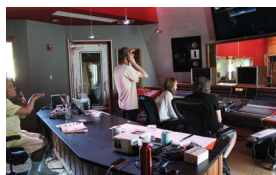
The new Toft ATB32 at Mount Wachusett Community College

## Mount Wachusett Community College Upgrades

Mount Wachusett Community College in Gardner, Mass., has upgraded its equipment complement with two Toft Audio ATB32 consoles, one for Studio 4, used by intermediate level audio students, and the other will be used in a mobile rig. The mobile rig is used on an annual concert held in the school auditorium, which is recorded live with audio and video students. It also travels to any location where the advanced audio class goes to record live instruments and ensembles.

Also, in Studio 5, the school's advanced production suite will be home to an Audient ASP8024-DLC with analog and DAW automation. This equipment will complement the facility's existing three Soundcraft Si Expression 16-channel digital consoles, all of which will be tied together with Focusrite RedNet audio network interfaces.

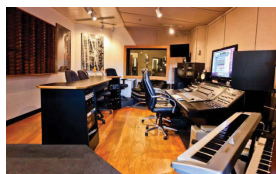
# SESSIONS: NEW ENGLAND



Blue Jazz TV at Guilford Sound

## GUILFORD SOUND, GUILFORD, VERMONT

Carton recorded live to 2-inch 16-track with engineer David Snyder...Valerie June was with producer/engineer Matt Marinelli...Blue Jazz TV worked on material with engineer John Klett...Speedy Ortiz was with producer/engineer John Agnello...So Percussion with Buke and Gase was with engineer David Snyder...Metric was with producers John O'Mahon and Liam O'Neil...The studio has also acquired new gear, including two Greg Hanks 660 mic pre/compressors with the A/D converter upgrades, two new MC77s from Purple Audio, and the following vintage guitar amps: 1964 all-original Vox AC30, 1966 all-original Vox AC30TB, 1958 all-original Fender Deluxe 5E3, Sampson era Matchless DC30 head, circa 1960 Gibson GA-78 Bell 30, and circa 1961 Titano 262R custom with true vibrato...The studio also recently had its AMS RMX and AMS DMX units rebuilt by Studio Electronics.



The A Room at Cybersound

## CYBERSOUND, BOSTON

Jennifer Lawrence and Edgar Ramirez were in to record singing scenes for the 20th Century Fox movie *Joy*, with David O. Russell directing...English soccer star Daniel Sturridge was in to record music, and he also shot an interview with Vice Sports...Dennis Leary was in recording a voiceover for the TV show *Behind the B* for the Boston Bruins...Dutch electronic musician DJ Bakermat was at Cybersound for a three days during his American tour to work on some remixes...Chicago artist DJ Dopejack remixed his track "Up in House" with engineer Rob Whitaker...Altered States worked on their upcoming album with engineers Whitaker and Perry Geyer...Former Patriots player and artist Tully Banta-Cain and Boston-based Knuckles (both of NBS) were in to record new tracks.



Will Schillinger and Kenny Aronoff

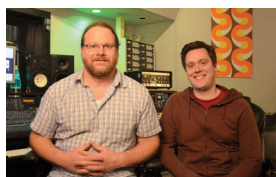
## PILOT RECORDING STUDIOS, HOUSATONIC, MASS.

Will Schillinger, owner of Pilot Recording Studios, is producing Jordan Weller and The Feathers' new album with Jason McConnell assisting. This session involves the use of Pilot's Studer A827 2-inch tape machine, as well as old-school miking and mixing techniques on Pilot's 80-input SSL G+. "These guys seriously rock!" Schillinger says...Also in recording is Francesca Anderegg on violin and Erika Ribeiro on piano for their upcoming record, *A Tour of Brazil*...Schillinger and Jerome Fox have just completed recording and mixing a record for Chrissy Gardner...Kenny Aronoff is coming in this month with Schillinger producing a record for Matt Cimini...There have been a number of film mixes and ADR also happening at Pilot, as well as numerous mastering sessions...Pilot has also been fabricating a line of 1073 microphone preamplifiers and has been using them extensively on these projects.



## GATEWAY MASTERING, PORTLAND, MAINE

Mastering engineer Adam Ayan mastered the following projects at Gateway: live recordings of Bruce Springsteen & the E Street Band for livebruce.springsteen.net. The recordings were all archival shows, some dating back as far as 1975. Many were mixed from multitracks by longtime Bruce Springsteen engineer Toby Scott, and many were mixed and mastered DSD, using the Merging Technologies Pyramix Workstation (for mastering), some also using Flux plug-ins in the DXD domain...Edward Sharpe and the Magnetic Zeros' album *PersonA*...new material from Ace Frehley, with Frehley producing and Warren Huart engineering...and Mavis Staples' album *Live! On A High Note*, with M Ward producing and Tucker Martine engineering.



L to R: Will Holland and Jim Keaney at Chillhouse Studios.

## CHILLHOUSE STUDIOS, CHARLESTOWN, MASS.

Shea Rose and Simone Scazzocchio produced, and Will Holland engineered the live multitracking of Isabella Stewart at the Gardner Museum/RISE Concert Series, including national and international performers at Calderwood Hall, the Gardner Museum's new performance space, with post-production and mixing at the studio for audio and video release online and in the museum store...Dub Apocalypse was in the studio recording/mixing/mastering for an upcoming album, with Tommy Benedetti and Van Gordon Martin producing and Holland engineering...The Silks were tracking and mixing for their sophomore album, with Tyler James Kelly producing and Holland engineering...SeepeopleS tracked and mixed their latest album, with Will Bradford and Holland producing (Holland also engineered)...Pansy Division is currently in the studio working on their upcoming album *Quite Contrary*, with Jim Keaney engineering (Pansy Division also produced)...Engineer Keaney worked with Honest Engine TV Productions as a location sound mixer. The shoots

consisted of city-wide ride-alongs with a well-known stand-up comedian and the Boston Police Department for an upcoming comedy special which will air on TV in the spring...The studio also added new pieces of gear from Manley, Elysia Audio and Gyraf, as well as software from iZotope and FabFilter.



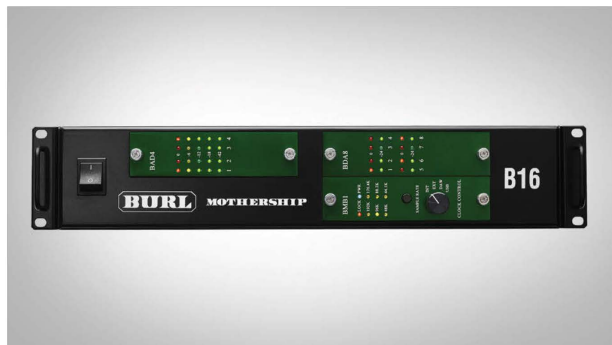
Dave Eggar, Arian Saleh, Brendan Muldowney and Chuck Palmer

## CARRIAGE HOUSE STUDIOS, STAMFORD, CONN.

John Scofield and Joe Lovano worked on the Grammy Award-nominated album *Past Present*, with producer John Scofield and engineer Jay Newland, with additional engineering by Ian Callanan...Warren Haynes worked on vocal and guitar overdubs for *Ashes & Dust*, with engineer Brendan Muldowney (Haynes also produced). Muldowney used the vintage ELAM 251 E through a Shep Neve to the LA-2A...Marcus King worked on an upcoming release, with producer Haynes and engineer Muldowney. They ran drums, guitars and more through a 3M 16-track tape machine...Arian Saleh worked on his self-titled album with producers Dave Eggar, Chuck Palmer and Muldowney (Muldowney also engineered), with additional engineering by Mikhail Pivovarov...Director Sean Robinson was in the studio to record a 5.1 surround-sound mix of the score that Eggar, Palmer and Amy Lee (Evanescence) had composed for the short film *Indigo Grey: The Passage*, with Eggar, Palmer and Lee producing and Muldowney engineering...Director Joshua Sweeney worked on music for the film *Same Difference*, with producers Eggar and Palmer (Sweeney also produced) and engineer Pivovarov.

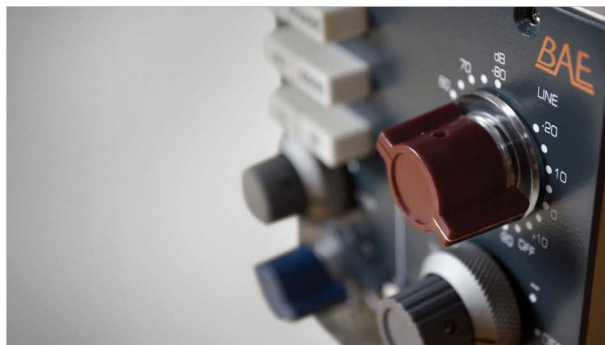


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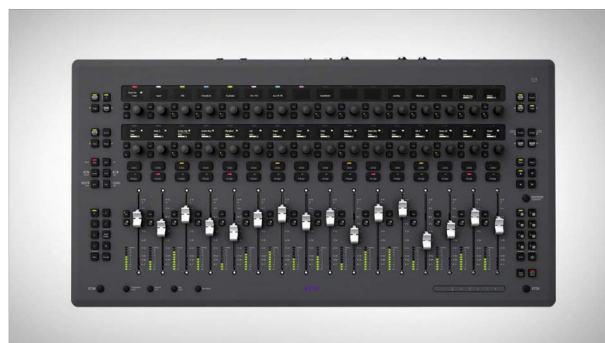
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# iZOTOPE OPENS EDUCATION-FOCUSED STUDIO

BY LORI KENNEDY



While iZotope's professional audio software products are considered core components of many music and film/TV post-production studios, the company recently opened a studio to expand upon one of its own core tenets: education.

iZotope, based in Cambridge, Mass., recently built two studios—a mastering/critical-listening environment and a mixing/production control room—designed specifically for educational programs and product testing. Jonathan Wyner, an audio engineer since 1983, was hired last year to be the studio's education director. (Wyner had been consulting with iZotope for the previous 10 years.)

"I was asked to lead the studio design project, to build the new studio facilities and offices here, about two-and-a-half years ago, and I was hired as education director last year," Wyner says. He was put in charge of building the studio from the ground-up. Wyner hired renowned acoustician Fran Manzella to design the rooms. "I contacted Fran based on his excellent work and reputation to design the studio," Wyner says. "How many times do you get to be involved with building a studio on this level? For me, exactly twice."

That first time was when he designed his own studio, M Works, also in Cambridge, back in 1991, where Wyner is also chief mastering engineer. "It's a great joy and pleasure to build a new studio, especially in this day and age when rooms are closing as opposed to opening."

The two studios opened in April 2015. The mastering suite is roughly 550 square feet, and the control room is approximately 450 square feet,

with a 250-square-foot acoustic recording/capture space.

According to Wyner, the design principles of the studios were that they must have superlative acoustics and monitoring; they must be neutral, quiet, accurate, revealing and pleasant environments to be in, and they had to have the flexibility to host various workflows and uses, including product design, evaluation, development and testing; sound design; and hosting community and educational events.

The studio is also an employee perk—the staff is allowed to use the space during evenings and weekends to work on their personal projects.

"It's been a fantastic addition to the company," Wyner says. "It's like when you build a new kitchen in your house: You think, 'How did I ever cook before this?' It's also great for me to see all the employees in the company understand what it means

to have a great studio. Seeing that kind of awareness is really satisfying."

Both studios have Avid S3 control surfaces. Monitors include PMC MB2S and LBr, Lipinski L-707s, and JL Fathom f113 subs; DAWs include Pro Tools and Sequoia (they use many others to test for product compatibility); and outboard gear includes Dangerous Compressor, Manley Variable Mu, Requisite L2M, Pendulum OCL-2 with custom sidechain filters, Sontec MES 432 mastering EQ, SPL Iron compressor, Empirical Labs Distressors, and Burl Summing Amp. They also have KVM switching solutions from IHSE and networked audio via Ravenna and the Merging Horus Converters.

"We've gotten requests from schools all over the world to hold events for educational purposes," Wyner says. "But most of the projects we host are within reach of the local community, and by that I mean within 150 to 200 miles of our campus." Activities range from hosting local AES chapter events and music/audio tech programs for area schools to networking gatherings and the company's brand-new iZotope Mastering Academy.

The Mastering Academy, held for the first time last year, hosted eight participants from countries around the world. The students studied, practiced, were mentored and received feedback over the course of three days. iZotope chose eight students based on their level of experience, as the Mastering Academy was designed to be expert-level training.

"The reason that we did it is the opportunity to be mentored by experienced professionals is something that has been disappearing, for a lot of

*Continued on p. 67*



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Avid  
Meyer Sound  
Genelec  
Sennheiser  
Avid

### PRODUCT

Satori Monitoring Controller  
RNDI: Active Transformer Direct Interface  
Notion 2 for iOS  
Apollo 8p Thunderbolt 2 Audio Interface  
MOTIV MV88 iOS Digital Stereo Condenser Mic  
ATH-R70x Pro Reference Headphones  
XL DESK  
Manley FORCE  
U47 FET  
5575LE Unidyne 75th Anniversary Vocal Microphone  
H9 MAX  
Modular Recreation  
Iris 2  
F8 MultiTrack Field Recorder  
HLT 2A Equalizer  
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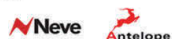
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## A LITTLE BIT OF EVERYTHING

by THE MIX EDITORS

The Winter NAMM Show in Anaheim has become a premier launching pad for new pro audio products, and while there was no dominant category this year—as in, “Everybody had a new speaker”—there were a whole lot of products that showed vast improvements or solved specific problems. Let’s get right to it.



**Antelope Audio** demonstrated several **Orion32+** units playing more than 100 simultaneous tracks of audio from Grammy

Award-winning recording and mixing engineer Brian Vibberts. The company also showed three new competitively priced product bundles, including the **MP8d & Orion Studio** (\$4,495), **MP8d & Orion32+** (\$4,995) and **MP32 & Orion32+** (\$5,295).



**Apogee** introduced the **Symphony I/O Mk II**, a multichannel audio interface featuring the company’s latest converters, up to

32 channels of modular I/O, a touchscreen display, and optional microphone preamps. The new interface operates via Thunderbolt, Pro Tools HD or Waves SoundGrid network.



**Avid** showed its new **Cloud Collaboration** feature coming in **Pro Tools 12.5**. Using the new Save Session as a Project feature, Pro Tools allows you to share files with other artists in the Avid Marketplace using a handy “share” button on each track. Your collaborators will then be able to load your files directly into Pro Tools without leaving their session, and then send them back using the same methods. Very cool.



Waves announced the shipping of the **Waves Greg Wells MixCenter** plug-in, created in collaboration with multiple Grammy-nominated producer, musician and mixing engineer Greg Wells (Adele, Katy Perry, One Republic). The plug-in offers a quick solution for putting a finish-

ing touch on your mix.

**Asterope**, maker of high-quality cables for pro audio recording, mixing, mastering and live performance applications, announced an agreement with Matchless, which will begin to offer Asterope’s cable

technology as an option in select amplifiers. Asterope is also working with other audio manufacturers to evaluate installing the company’s wiring technology.



**Audio-Technica** introduced the **ATM230** Hypercardioid dynamic instrument microphone, ideal for capturing drums and percussion. A-T also showed the **AE2300** dynamic cardioid mic featuring a double-dome diaphragm, rugged, brass metal construction, and low-profile design.

**Audiofly** showed the **AF100**, their most affordable in-ear monitor yet. The fluid shape and durable TPE cable promise added comfort and the ability to withstand wear and tear. The **AF100** comes with three pairs of single flange silicon tips, a cleaning tool, and a molded protective case to keep them safe and protected while on the go.



The **Auralex MudGuard v2** is a microphone shield in a multi-radial convex shape designed to direct any unwanted and off-axis acoustic energy away from the mic. The included hardware allows the MudGuard v2 to mount easily on most microphone stands and allows the user the flexibility to adjust the microphone proximity.



**Yamaha** announced the release of the **HPH-MT7** headphones featuring custom drivers equipped with CCAW voice coils and powerful neodymium magnets to achieve precise definition and control even at the highest output levels. Made from aluminum wire coated in highly conductive copper, the lightweight yet powerful drivers deliver a broad frequency response of 15 to 25k Hz.



**BAE Audio** released two new 500 Series equalizers at NAMM, the **1066DL** and **1023L**, which port their 1066D and 1023 preamplifiers and make them available for 500 Series fans. The 1066 is especially well suited to guitar applications, while the 1023L takes the preamp and EQ from the Neve 1073 and adds more frequency options in the high and midrange sections.



**Black Lion** showed the **Auteur MKII**, featuring a revamped gain stage resulting in higher gain, lower noise, lower distortion and an extended frequency response. The MKII offers versatility and promises outstanding performance on drums, vocals and guitars.



The **B16 Mothership** from **Burl Audio** is a 2U, two-slot version of the B80 Mothership.

Using the same I/O cards as the B80 and a heavy-duty two-rackspace chassis, the unit employs two daughter card slots with an internal power supply and a choice of motherboards for DigiLink, MADI, Dante or SoundGrid connectivity.

The **GXL-EU** from **CAD** is designed for the multi-continent touring pro to operate within the 863 to 865 MHz frequency band, making it license free for use throughout Europe. The dual-channel GXL-EU receiver is outfitted with XLR and 1/4-inch connectors, RF and AF indicator lights and volume controls.

**DiGiCo** announced a soon-to-be-released **Stealth Core2**, an upgrade to its existing Stealth Digital Processing. Stealth Core2 will provide additional processing from the audio core of every DiGiCo SD console, offering extended processing channels and functionality that can be fitted to all existing console surfaces.



**Eiosis** announced the **E2Deesser**, and **AirEQ's Air and Earth modules** for the Slate Digital Virtual Mix Rack. The E2Deesser features Auto, which dynamically adjusts the frequency response of the sibilants, and Smooth, which brings

a gentle and natural saturation.



**Elysia** presented a slick 10-year anniversary edition of the **karacter 500**, featuring a unique faceplate taken from a vinyl record. Karacter is a discrete Class-A 500 Series distortion module offering mastering-grade saturation, tube-style distortion or extreme waveform annihilation.



NAMM-goers saw the new **RedNet A16R 16-Channel Analog I/O** from **Focusrite**.

The latest addition to Focusrite's popular RedNet range of Dante-based audio-over-IP interfaces, the A16R features a rugged, single-rackspace all-metal enclosure matching other products in the series. The unit operates at standard sample rates up to 24-bit/192 kHz, including pull up/down, with sample rate and operating levels selected remotely via host computer software.



**Ultimate Ears** not only had three booths, each with 10 scanning stations offering free in-ear scans to show-goers, but they also showed the second collaboration with the engineers from Capitol Studios. The **UE Pro Reference Remastered** high-resolution IEMs use True Tone Drivers to extend the frequency range and deliver a flat response to 18 KHz.

**Genelec** brought its **8320** and **8330** monitors to NAMM, featuring the company's unique Minimum Diffraction Enclosure made of recycled die-cast aluminum, as well as the advanced Directivity Control Waveguide technology. Also in the booth was the compact **7350** subwoofer purposed for use with the 8320 and 8330.

**IK Multimedia** got small at the big show debuting the **iLoud Micro Monitor**, the smallest active studio reference monitoring system in the world. It comes with two bi-amplified speakers that promise an expan-

sive stereo image, an ultra-accurate true linear frequency response, superior bass and plenty of power in a truly portable package.



**Mackie** released the **AXIS Digital Mixing System** with full Dante integration. The modular AXIS system combines a 32-channel DL32R digital

mixer with the innovative DC16 control surface creating a new type of live sound mixing workflow.

**Melodyne 4** from **Celemony** offers a bevy of new features, including unique sound design through access to overtones, polyphonic audio now on multiple tracks, selection of notes across track boundaries, precise tempo detection plus better algorithms, a new interface, and more efficient workflow.



**Synchro Arts** was in the International Music Software Trade Association (IMSTA) room upstairs at NAMM showing **ReVoice 3.1**. New features include a simple yet powerful toolset for manually adjusting audio timing and pitch. Also upstairs was **Sonnox** with its **Envolution** plug-in, a frequency dependent transient shaper, while **Soundtoys** featured **Version 5** featuring all 18 Soundtoys plug-ins including a new effect rack, **PrimalTap**, and **Little AlterBoy**. No dongle required.



**Audionamix** had **ADX TRAX Pro 2.6** in its booth offering a collection of ADX algorithms, spectral editing tools and new MIDI import feature for easier

pitch guide creation. The software gives audio engineers, DJs, producers and creative artists the ability to visualize and edit frequency-specific content across the full audio spectrum. Dave Pensado made an appearance and drew a crowd. Musicians and DJs also hosted demos throughout the show.

**Optical Cables** by **Corning** connects computers and peripherals at speeds up to 5 Gb/s through USB or up to 10 Gb/s through Thunderbolt and up to 20 Gb/s through Thunderbolt 2. There is no electromagnetic interference (EMI) with the cables, helping to ensure a smooth and balanced audio track.



UK-based manufacturer **PMC** used NAMM to launch its new **IB1S-AIII** "activated" reference monitor, a high-resolution three-way speaker that combines flexible plug-and-play design with PMC's renowned audio quality.

**PreSonus** launched the **Studio 192 Mobile** USB 3 22x26 audio interface and studio command center. The Studio 192 Mobile records at up to 192 kHz and combines two digitally controlled XMAX Class-A solid-state mic preamps and premium Burr-Brown converters with 118 dB of dynamic range.



The **MDIO-HDX Pro Tools** module from **Prism** allows multiple Titan or Atlas units to be connected directly to an AVID Pro Tools HDX or HD Native system via AVID's "Digilink" connection. Pro Tools users can enjoy the excellent sound quality of the Titan and Atlas A/D and D/A converters, and their equally well-regarded onboard microphone preamplifiers.





Sennheiser featured the HD 25 headphones in three versions aimed at different users. The classic HD 25 comes with its iconic split headband, 1.5m single-sided connection cable and a flip-away ear cup for single-sided listening. Its sister model, the HD 25 LIGHT, is the entry-level version, and the HD 25 PLUS is identical in design to the HD 25 but spoils its users with extra accessories and two included cables.



Softube showcased the Drawmer S73 Intelligent Mastering Processor plug-in at NAMM. The processor is an enhanced multi-band compressor featuring a simple STYLE parameter to switch between readymade mastering processing techniques using multi-band compression, equalization, and mid-side processing.



Soundcraft brought the Si Impact Digital console featuring 40-inputs, ViSi iPad control and built-in Stagebox connectivity for I/O expansion. The Si Impact has a 32-in/32-out USB recording and playback interface that provides easy multitrack recording and playback directly from a DAW. Right out of the box, you get a free download of Ableton Live 9 Lite.

Vienna Symphonic Library had the newest additions to their "Dimension" series of ensemble instrument collections on hand, including Vienna Dimension Strings II, Vienna Dimension Brass II and Vienna Suite Pro offering 14 audio processing plug-ins for mixing and mastering that support surround formats up to 12.2. ■

## NAMM's Hidden Gems // By Wes Maebe

At every single trade show, you think, "Surely I won't find anything else I need." And without fail, you walk away with a wish list that makes your bank manager weep. Here are some choice products I found at Winter NAMM 2016.

**Meris Mercury7.** This is a 500 Series DSP reverb with some serious tricks up its sleeve. The algorithms are based around plate and cathedral reverbs, but don't let that fool you into thinking it's just another reverb. This box features extensive modulation capabilities, pitch shifting and envelope swells. You'll have to hear it to believe it.

Due to the NAMM show floor layout, you really have to commit to stroll through all the sections and ensure you haven't missed anything. I stumbled across **Tegeler Audio Manufaktur**, hiding among keyboards and whooshing synths. Based in Berlin, this company builds a couple of very cool units. **Schwerkraftmaschine** is a DAW-controlled multimode compressor. The **Crème** combines a passive EQ à la the Pultec principle and a bus compressor in one box.

**Sonnox Envolution:** Sonnox's new plug-in is a must-have for every engineer's toolbox. It's a frequency-dependent envelope shaper with independent transient and sustain sections, allowing you to radically shape the envelope of your audio.

With so many 500 Series chassis available it would be insane not to jump on the bandwagon. **Chameleon Labs** launched its 560 inductor-based EQ, and the 7720 stereo compressor also caught my eye.

You can't walk around this exhibition without a little drool detour into guitar land. That's where I spotted **JHS**. Known as a pedal manufacturer, JHS surprised me with six pedal-inspired 500 Series boxes: The **Colourbox** (a 1073 style mic pre and EQ), **Kodiak** (tremolo), **Emperor** (modulation), **Panther Cub** (delay), **Pul 'n' Peel** (compressor/distortion/EQ) and the **Superbolt** (distortion).

Jonathan Little from **Little Labs** is always good for cool and extremely useful inventions. The **Monotor** is an audiophile headphone amp designed with audio engineers in mind. This is a no-nonsense, accurate and fantastic-sounding unit, sporting an extensive mono monitoring section, ¼-inch and mini jack outs so you never have to hunt for those pesky adapters, and paralleled combo XLR and TRS inputs for easy in-line monitoring.

The **Chandler Limited RS 124**, a truthful re-creation of the original Abbey Road version, will deliver historic character and transient control to your mixes.

New microphone releases generally leave you thinking that it is yet another re-creation of an old classic, or they simply have an insane price tag. **Aston Microphones** decided to change that trend. The **Spirit** is a multipattern condenser at a fraction of the traditional cost.

NAMM also saw the launch of **Manley's Nu Mu Stereo Limiter Compressor**, combining the famous Variable Mu T-Bar mod, all-tube front end and a new solid-state audio chain. It also features Manley's brand-new HIP function.

Paul Wolff (formerly of API and Tonelux) has developed a couple of very cool products under the **Fix Audio Designs** moniker. The **Blender** combines dry and wet signals outside of the box. When you try to do this inside the DAW, you may incur delay issues. The Blender has just brought the DAW and outboard world closer together. Wolff has also designed a new customizable and adjustable console frame design based around his 802 module. And do not forget to check out Fix Audio Designs' **Fix Flanger** and **Fix Doubler** plug-ins, made in collaboration with Softube.

**Barefoot Sound's** new NAMM release is the **MicroMain26**. The brochure says that they are incredibly transparent and provide detailed midrange. I could not agree more, and I will add to that that the stereo imaging on these bad boys is simply stunning!

**Sennheiser** has been making some waves in the immersive audio field. Its **Ambeo 3D** umbrella now includes its own "Ambisonic" multicapsule sound field microphone. Stay tuned.

I first came across **Louder Than Liff**'s **Silver Bullet** at the original Coast recording studio in San Francisco. The company's product designer Brad McGowan was demoing the prototype to mastering engineer Michael Romanowski and myself, and we got to implement it on a mix in the studio. Like all their units, it does more than what it says on the box. They call it a Tone-Amp. I'll call it a tone-shaping, vintage-emulating Mojo EQ. I love it.

And last, but not least, **Solo Dallas' The Schaffer Replica**. The true re-creation of this guitarist powerhouse does a lot more than give you an immense guitar sound. I've already used this on acoustic guitars, vocals, keyboards, bass and drums, and it has been a mix saver on several occasions. This thing rocks.

# Your search for a new microphone ends here.



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# Tech // reviews

## FOCUSRITE CLARETT 8PREX

Thunderbolt Interface Brings Preamps, Plugs and More



The Clarett 8PreX features 8 preamps with switchable phantom power per channel.

**F**ocusrite has unleashed a whole new line of interfaces that take advantage of the full bandwidth of Thunderbolt connectivity. This new Clarett Series ranges from the simple desktop-model Clarett 2Pre to the top-of-the-line Clarett 8PreX. All of the Clarett interfaces feature a sturdy steel chassis with red, brushed-steel front panels. The feel of the knobs, the weight and the overall look of the Clarett devices makes them seem a little higher end than the Saffire or Scarlett interfaces that preceded them, and unsurprisingly a slightly higher price tag is attached. However, the 8PreX offers an impressive “26x28” I/O total, with newly designed mic preamps at a surprisingly reasonable price. So how does it perform?

### MAKING CONNECTIONS

The back of the Clarett 8PreX is loaded with I/O. The unit can accept a signal from eight analog inputs simultaneously. Each analog input offers separate connectors for different signal types. The mic preamp is connected using an XLR jack, the line-level input uses a ¼-inch TRS connector, and each of the first two channels additionally offers front-panel ¼-inch TS instrument input jacks. I could see the separate input connectors as being useful if the Clarett were to be connected to a patchbay with gear normaled to the different input types. It is always disturbing to see a single automatically switching combo jack for mic and line input on a device like this, as it makes wiring into a patchbay nearly impossible.

The preamps of the Clarett Series have been newly designed to offer ultra-low noise and the cleanest possible sound. They also offer an option called “Air,” which introduces analog modeling

to emulate the iconic transformer-based Focusrite ISA mic preamp. While there are no actual transformers coupled to the mic preamps of the Clarett, engaging the “Air” circuitry adjusts the preamp’s impedance and adds a subtle bit of EQ. This function is audible in mic, line, and instrument modes.

In addition to the analog inputs, the Clarett 8PreX has two ADAT optical inputs that provide up to 16 channels of 44.1kHz or 48kHz audio. This halves with each doubling of the sample rate up to 192 kHz using SMUX. The S/PDIF input brings the input total to a possible 26. Likewise, the output

side features a pair of ADAT optical outputs and a stereo S/PDIF output. The doubled ADAT input and output connections are one of the most significant differences between the Clarett 8PreX and the Clarett 8Pre, which only has one ADAT optical in and one out. All of the Clarett peripherals also offer MIDI In and Out, a feature that is becoming less common on interfaces, but is always welcome.

Ten analog outputs are available, allowing one pair to be used for monitoring while leaving a full set of eight for feeding headphone amps, outboard effects or an analog stem mixer. Two discrete headphone outputs appear on the front of the unit, each capable of being fed separate mixes and each having its own physical volume control. All of this I/O is routed and controlled through a split of hardware controls and a software control panel.

### TAKING CONTROL

Each analog input channel is represented on the front panel of the 8PreX by a set of physical controls. Each set has its own gain knob that affects all three input types (mic, line or instrument). It is continuously variable with no detents. I like the idea of a physical gain control for each channel so that multiple channels can be affected simultaneously and changes can be made quickly.

The application of phantom power, engaging the highpass filter and polarity flip are all accomplished using push-buttons on the front panel. Switching a channel between mic, line or instrument modes and toggling the “Air” circuitry in and out are done through the software application. It proves slightly awkward having to go back and forth between the two sets of controls, and it would be nice if everything were in one place or the other.

## FIELD TEST

Getting the Clarett 8PreX up and running was a snap. Keep in mind that it only runs on Mac OS X 10.9 (Mavericks) or higher and requires a Thunderbolt connection as well as Thunderbolt cable provided by the user. For my tests, I was typically running Pro Tools 10.3.9 on OS X 10.9 and experienced consistently stable performance, with only occasional minor aberrations. After installing the driver, I cabled up the unit to get familiar with connections, routing, etc. I connected the S/PDIF output to the digital input of a Dangerous Source, the typical monitor controller in my tracking rig. The clocking locked up without issues and everything sounded great.

I wound up connecting the monitor output of the Clarett to the analog input of the Source just for comparison. I was impressed with how clean and quiet the output of the Clarett was, even when cranked. A/B'ing the converters in the Source versus Clarett, the Source was a little fuller in the bottom, clearer on top, and punchier all around. However, the Clarett was no slouch and brought a wide, detailed stereo image with a respectfully punchy bottom end. I would say that it performed like a real contender and could hold its own against pricier output stages.

The first big test for Clarett came on a session recording guitar and bass. This involved recording live amped guitars, DI bass, and re-amping other guitars that were previously recorded via DI. Recording re-amped guitars came first, and I was impressed by how easily I could route everything to and from the amp and build a monitor mix. The first tone captured was a biting dirty guitar through a boutique 1x12 combo amp. I had a CAD ribbon mic up close and on-axis, and a Blue condenser backed off a bit.

The ribbon mic did a better job of taming some of the harshness of the amped sound and produced a result that was full and balanced. The condenser was a bit clearer on top and did well on some of the more articulate sections of the guitar part, but, in general, was less full in the bottom end than the ribbon mic. In both cases, the preamps were smooth in the top end, not pushed at all, and the bottom was warm and full. I tried turning on the "Air" setting on each of the mics, and in both cases the effect was relatively subtle. We unanimously agreed that the sound was

preferable with the Air turned off, as, in this case, it brought a bit of unwelcome edginess.

Meanwhile, with the same setup, recording high arpeggiated notes from a 12-string electric guitar, played on a clean amp setting, the Air setting did a nice job pronouncing the pick attack and defining the notes. The Air setting was also a nice touch when recording a Rickenbacker bass using one of the DI inputs of the Clarett. In general, the DI inputs were very clean and quiet with a nice overall character. The sound had an impressive weight and detail with plenty of headroom. Kicking in the Air feature took well to the bass, enhancing the sparkly retro sound that characterized the instrument.

When I tried the Clarett's preamps on the kick, snare and overheads, and even with the Air effect engaged, they produced a pleasantly dark, warm, British sound. The top end of cymbals, which leaned toward the brighter end of the spectrum in the room, melted nicely into the recording. There was no harsh or brittle character, but no lack of detail, either. The sound seemed a bit sculpted in the lower midrange, too, so it didn't come across as muddy at all.

The round-trip latency to and from the Clarett was remarkably low. When overdubbing onto a 96kHz session, the buffer had been set at 512 samples during rough mixing. At that buffer setting, there was just barely a perceptible sluggishness. At 256 samples it fell to the point where it was not outwardly noticeable. Any less and it was non-existent. This was nice because we could put a bass amp plug-in on the record-enabled track for reference, with no ill effects.

## A MUST HAVE?

The Clarett 8PreX is in an interesting position as it retails for about \$1,000 less than similar devices from Apogee, Universal Audio or Antelope. The Clarett 8PreX's preamps perform beyond their price range, and the difference in character between the Air feature being active and bypassed creates great versatility. As long as you are willing to step up to Thunderbolt and upgrade to Mavericks or higher, this is a solid choice for a high I/O-count interface.

*Brandon Hickey is a recording engineer based in Phoenix.*

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## 500 SERIES PREAMPS, TIMES THREE

BAE 1073 MPL, Sonic Farm Silkworm, Meris 440



BAE 1073 MPL

### PRODUCT SUMMARY

**COMPANY:** BAE

**PRODUCT:** 1073 MPL

**WEBSITE:** baeaudio.com

**PRICE:** \$899

**PROS:** Solid build, sonically excellent, line/mic switch.

**CONS:** Version with impedance switch on front of unit is \$50 upcharge.

**T**he 500 Series format has certain limitations that are a challenge for module designers. These include tight spaces in which to put large components, plus low power supply voltage and current draw. But over time, manufacturers have thought this out, gotten over the problems through meticulous design, and made some excellent preamps. The three units grouped here fall into this category and are some of the best around. Reviewed below are the BAE 1073 MPL, Sonic Farm Silkworm and Meris 440 microphone preamps. Each offers a solid design, great features and excellent sonic performance.

#### BAE 1073 MPL

This great-sounding unit is solidly built, hand-wired, and bare bones in design. Features include Class-A electronics, Carnhill St. Ives transformers, DI input, and separate switches for Mic/Line, phantom power (illuminated), and polarity flip. Input is gained via the large rotary knob at the top in 5dB increments with a completely variable output gain knob. There is an impedance switch on the back of the unit that allows you to choose either 300 or 1200 ohms. Being on the back, you're probably going to set it and forget it, but it's nice to have the option. I set mine to 1,200 ohms, and it always sounded great.

The first use was on a male lead vocal recorded with a U 67 through the BAE 1073 MPL and an Empirical Labs Fatso Jr. I set the Fatso to Buss, Tranny and adjusted it, so I was getting 3 to 5 dB of gain reduction at the peak. The sound was beautifully warm, tame at the top without being dull, and carried a full midrange

tone that flattered this male vocalist. I used the same chain to shoot out three different mics: a 251, a U 47 and the U 67. The 251 was very sibilant, while the U 47 was better but didn't have the full mid-range of the U 67, so I went with the latter.

Next I used the BAE to record a bass guitar using an A Designs REDD DI. Because of the gain the REDD offers, I was able to use the line input of the 1073 MPL—the combo sounded fantastic. On another session, I recorded a Fender Jazz bass using the DI input on the front of the unit that, again, sounded beautiful. The bass had a rich and full tone, not needing even a hint of EQ.

On other sessions, I used the unit to record snare and then kick drum. For both applications, I used some EQ from a 500 Series API unit and the pair was a winner in both applications. My favorite preamp for kick and snare is the Coil CA-286, which I reviewed in Mix's September 2015 issue. But the 1073 MPL is a close second, and much more affordable.

The unit tested had the impedance switch on the back of the unit, which is so impractical that it might as well not be there at all. However, you can purchase a version with the impedance switch on the front of the unit for \$950. That aside, the unit sounds great as a preamp or line amp, and although it doesn't have extra features found on competing preamps, it is a winner. If you're looking for a classic, great-sounding preamp that will be in your 500 Series rack until the Apocalypse, this is the one.

#### SONIC FARM SILKWORM

Silkworm is Sonic Farm's first 500 Series product, and it is packed with features.

On the inside, there are Cinemag 100-percent high-nickel transformers at the input, and another, steel transformer switchable, at the output. On the front, the large white knob at the top provides access to a full 66 dB of gain, and after that it gets interesting.

The “Vibe” section offers a three-position switch that is best explained by the designers. “This switch is a complex impedance manipulator that makes the mic interact with the input transformer. S, P and W stand for Smooth, Present and Warped. Present is linear; Smooth has a slight top-end roll-off, and Warped has a presence peak between 3 and 7 kHz depending on the mic impedance.” The designers say this feature will most affect dynamic moving-coil mics, ribbons less, and transformerless condensers hardly at all. Lots to remember, but that’s the depth of tweaking you can apply to your signal. Next is a High, Low, and Medium gain switch that is self-explanatory, plus there is a separate pad switch. This kind of gain control means this unit will handle most anything.

Other switches toggle Mic or Instrument input, phantom power (illuminated), polarity, and a toggle for solid-state or transformer-driven output. At the bottom is the DI input, and that’s pretty much all you can fit into a single 500 Series rackspace.

I used the Silkworm across a broad range of applications from vocals to percussion, drums, guitars and bass. Whenever I had a “problem,” I found myself switching over to the Silkworm to help fix it. Yamaha Subkick too hot for other preamps? The Silkworm’s pad and three-position gain switch were the solutions. Bass amp miked with an AKG D112 not round enough? The Silkworm’s output transformer and Vibe switch gave me many options for my sonic palette. This preamp is a sound tweaker’s dream. On a lead vocal, recorded with a simple Shure SM7, the Silkworm provided the extra gain I needed for this mic that has a notoriously weak output. Plus, once I experimented with the Vibe and output transformer, I could access many sonic options without having to reach for an EQ.

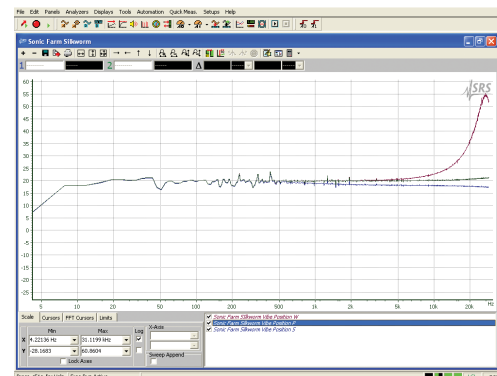
If you’re a sonic “fiddler,” meaning you try anything to get it right before Record, then this is your preamp. The features are no BS. Each one is solidly designed and thought out. How they got all this into a 500 Series unit, that sounds good as well, is unbelievable. What you can believe is that you’ll love this unit on many varied types of inputs for years to come.



Sonic Farm Silkworm

## PRODUCT SUMMARY

**COMPANY:** Sonic Farm  
**PRODUCT:** Silkworm  
**WEBSITE:** [sonicfarm.com](http://sonicfarm.com)  
**PRICE:** \$700  
**PROS:** A sound tweaker’s dream. Great features and sound.  
**CONS:** None found.



The Stanford Research SR-1 Analyzer shows the frequency response changes produced by the Vibe switch.

## MERIS 440

The Meris 440 first caught my eye because of its integrated guitar pedal effects loop option. I’ve been experimenting with integrating pedals into my +4dB workflow from Pro Tools for other reviews in Mix, and I thought that the Meris 440 was brilliant. The main features of this well-made preamp include up to 60 dB of gain provided by a large input gain knob and a second output knob, both completely variable. The output trim (-27 dB to +12 dB) happens before the output transformer to preserve its secondary impedance. Other features include a 12dB per octave HPF starting at 80 or 200 Hz, 3dB of high-shelf boost at 4 or 7 kHz, a -20dB pad, polarity, and illuminated phantom power switch. As with the Silkworm, there are Cinemag transformers at the input and output, but unlike the Silkworm, the output transformer is not switchable. The two TS jacks at the bottom of the unit are where the I/O happens for guitar pedals. The return jack doubles as a DI input—a nice touch.

I first used the 440 for a range of applications where the guitar pedal I/O wasn’t needed. Not engaging this gave me a chance to first see what it could do as a preamp alone. It is a standout. When used to record bass, kick, snare, acoustic guitar and percussion, the Meris 440 sounded excellent. The HPF is well centered at 80 and 200 Hz—I tried both when recording acoustic guitar, settling on 80 Hz. I’m always swearing at those who choose 100 Hz as a starting point, as it takes out too much of the good tone.

Next, I used an Earthquaker Devices Hoof fuzz pedal patched across the input of a bass





Meris 440

amp miked with a U 47 FET microphone. The clean DI input recorded through another preamp married nicely with the 440's fuzzed-out input. It was nice to have the pedal in the control room as the bass player was in another room. I could see this unit sitting nicely in the home

## PRODUCT SUMMARY

**COMPANY:** Meris

**PRODUCT:** 440

**WEBSITE:** meris.us

**PRICE:** \$549

**PROS:** Affordable, great sound, solid build, versatile effects loop and DI.

**CONS:** No line input for re-amping guitar effects from your DAW.

studio rack of a guitar player who wants to keep his pedals on the desktop with short cable runs. Having the plugs at the front of the preamp is an excellent idea.

Another great feature is to use the 440 as a re-pedaler from your DAW. Set the unit to unity gain by setting the -20dB pad to on, the gain knob completely anti-clockwise, and the output knob to 10 o'clock. Send your DAW track to the input of the unit and use the Send/Return jacks to go to your favorite pedal. The affected output of the 440 can then be re-recorded back to your DAW on a fresh track.

The only item on my wish list would be that the +3dB boost would be centered closer to 2 kHz, which for me is the money frequency for guitars. That said, if you're on a budget and want a great preamp with some solid extras, including the ability to quickly add guitar pedals to your workflow when recording or mixing, this is your best buy. ■

Kevin Becka is Mix's technical editor.

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Continued from p. 48

cludes one all-wood built speaker featuring a handy front-panel volume knob and adjacent headphone jack; the 3-inch woofer-equipped CR3 provides 80 to 20k Hz frequency response while the CR4 and Bluetooth-enabled CR4BT come with 4-inch woofer and a 70 to 20k Hz frequency range spec. Analog input is available via 1/8-inch, 1/4-inch and RCA connectivity.



#### **PRESONUS ERIS E4.5**

PreSonus' relatively recent entry into the studio monitor market has produced some very attractive options for budget-conscious shoppers, as well as some unique choices (notably in its Sceptre CoActual coaxial line).

On the small side, PreSonus

offers the Eris E4.5, a traditionally styled two-way, bi-amplified studio monitor with a small footprint (9.45x6.4x7 inches), light weight (13 pounds) and 100 dB of maximum SPL at 1m. Features include a 4.5-inch Kevlar woofer, 1-inch silk-dome tweeter, 70 to 22k Hz frequency response, front firing port design, and 25 W of total power. Input is available as TRS/TS, bare wire and dual RCA connectivity per speaker; output is available via 1/8-inch stereo headphone jack.



#### **SENAL ASM-3**

The Senal ASM Series is a high-performance powered two-way bi-amplified studio monitor line at an incredibly low price point. I recently reviewed the ASM-3's big brother, the ASM-6, and as a result was truly impressed with Senal products. Most notably, Senal's ovoidal aluminum alloy cabinet allows for incredibly detailed positioning; the included rubber "shoe,"

for lack of a better word, clearly does a good job of isolating the mounting surface from the ASM's sympathetic vibrations. On my desk at meter bridge-height, the ASM was probably more easily positioned to each ear than any near-field I've had the opportunity to review.

The smallest ASM-3 provides 28 W (peak) per driver, a 3-inch midrange/woofer and 0.8-inch metal-dome tweeter, respectively. Dimensions are 5x7x4.8 inches and weight is 3.5 pounds each. Maximum SPL is 103 dB at 1m and frequency response is a smooth 75 to 20k Hz. Each ASM Series speaker provides a volume knob and on/off switch on its right side.

#### **SONODYNE SRP400**

Sonodyne's compact SRP400 is a traditional two-way bi-amped studio monitor featuring the company's proprietary 4.5-inch CURV cone woofer



and 1-inch silk-dome tweeter powered via 25 W per driver. Frequency range is 75 to 22k Hz, maximum SPL is 100 dB at 1m, and both XLR and TRS inputs are provided per cabinet. Measuring 9x6.3x6 inches and weighing 9.7 pounds, the front-ported SRP400 provides volume knob and on/off switch on its front panel, too. Additionally, high- and

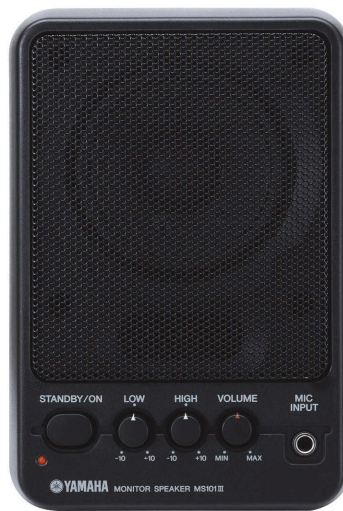
low-frequency tilts provide useful adjustment for a variety of placements and possible subwoofer pairings.



#### **TASCAM VL-S3**

Sold as a set, the VL-S3 comprises two rear-ported bi-amplified (14 W plus 14 W peak power) speakers; the left speaker contains the rig's amplifier. Features include a 3-inch woofer and 1/2-inch tweeter, stereo RCA and 3.5mm stereo mini unbalanced inputs, volume control

and on/off switch, and compact size and weight (14.3x8.9x7.8 inches and 7.18 pounds). Frequency response is 80 to 22k Hz.



#### **YAMAHA MSP3 AND MS10III**

The MSP3 is a shielded two-way powered studio monitor featuring comprehensive input options (XLR, RCA and TRS/TS), 20 W of total output power, a 65 to 22k Hz frequency response, and 4-inch woofer and 1/8-inch dome tweeter components. Dimensions are approximately 5.65x9x6.56 inches and each MSP3 weighs 9.7 pounds. Its front panel provides LF and HF rotary frequency adjustment and unique dual input level adjustments, allowing users to attach RCA and XLR/TRS sound sources for individual level

flexibility. The MSP Series is a fine-sounding bargain.

Meanwhile, Yamaha offers a cool, super-compact broadcast-truck style powered speaker in the MS10III, much like Fostex's 6301 yet even more affordable, in 8.4x5.75x7.65-inch dimensions and a 4.8-pound weight. Its 4-inch full-range driver provides a 75 to 18k Hz frequency response, and the cabinet offers individual front panel LF and HF adjustment, volume knob, on/off switch and a 1/4-inch mic input jack. Total power output is an efficient 10 W. Rear panel connectivity includes RCA and TRS inputs. ■

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



## KRK ROKIT 10-3 G3 STUDIO MONITORS

Three-way, Tri-amped System Offers Multiple Inputs, High SPL

**K**RK, now owned by Gibson, has revamped the Rokit line of speakers to include two new models: the Rokit 4 two-way, and the largest of the series, the Rokit 10-3 G3, tested here.

This third-generation 10-3 features a 1-inch soft-dome tweeter, 4-inch mid-range driver and a 10-inch glass-Aramid composite woofer. The tri-amped system offers 148 watts of total power with 30W going to the tweeter, 32W for the mid-range, and 86W of low-frequency power. All of this power brings 110dB of SPL, which is plenty for most applications.

The front-ported, magnetically shielded MDF cabinets weigh 26.5 pounds and are 14.4x12.8x21.5 inches, so a sturdy and sizable stand is recommended for midfield use. Inputs are balanced XLR and TRS, or an unbalanced RCA. Other rear-mounted controls include system volume (-30 dB to +6 dB); high-frequency level (-2 dB, -1 dB, 0, +1 dB); and low-frequency level (-2 dB, -1 dB, 0, +2 dB). The midrange/tweeter module can be rotated so the speakers can be oriented on their sides.

### INTO MY STUDIOS

I've been using KRK speakers now for at least 20 years, and the new Rokits are a great addition to the KRK family. They feature a full-bodied sound from top to bottom, both loud and soft. When I first got the pair, I set them up in my home studio. I have a tight setup, and my desk is small and close. I used them at a low level most of the time and could hear the clarity of the highs and the bass at a decent level. I had to stand up and move back a few feet to hear them at a properly loud level.

Next I took them to Blackbird Studios here in Nashville where they sat on top of an API Legacy Plus console. I spread them out and also had another set of speakers that I often use in the studio. This was not such a fair test because they both sounded different in their own ways, but the 10-3 G3s held up pretty well. I might add that the other speakers were about \$4,000 more than the 10-3 G3s and didn't sound that much better.



The Rokit 10-3 G3 features XLR, TRS and RCA inputs plus System, HF and LF level control.

The 10-3 G3's top end is smooth and not brittle, and the bottom end is tight. Two things that I found lacking are punch and power when compared to my other speakers. I had both EQ settings on the back at normal, and the level knob was turned up halfway. I estimate that they were shy in the lower midrange from around 250 Hz up to around 1 kHz. The 10-3 G3s sounded a bit softer in those areas than what I'm used to. Also, because of their size, when you put them on top of a console, you, the listener, are just about level with the woofer, meaning you need to stand to be level with the tweeter and hear them properly. This is where the optional side orientation would work very well.

### CONCLUSIONS

I think the Rokit 10-3 G3 would work great in a home or professional studio if they sat on stands that could get low enough so the tweeter would be at ear level, or in their optional side orientation. For the price, they are incredible, and I'm sure you will love them! ■

*Steve Marcantonio is a Grammy Award-nominated, Nashville-based engineer who has worked with Vince Gill, Reba McEntire, Taylor Swift, Band Perry and Thomas Rhett. He was voted Top Engineer at the 2007 ACM Awards.*

### PRODUCT SUMMARY

**COMPANY:** KRK Systems  
**PRODUCT:** Rokit 10-3 G3  
**WEBSITE:** krksys.com  
**PRICE:** \$499 each  
**PROS:** Rotating midrange module allows for side orientation.  
**CONS:** A bit shy in the 250 Hz to 1 kHz range.

### TRY THIS

When placing larger midfield monitors on a console-top, experiment with orienting the monitors on their sides with tweeters in, then tweeters out. Depending on the size of the room and the distance of the speakers from the listener, the results can be remarkably different. Pick the orientation that gives you the best stereo picture from your listening position.

*Continued from p. 54*

reasons, including the fact that the studio economy has been in decline for some time,” Wyner says. “When I first started in a mastering facility, I was mentored for five years before I went off on my own. It’s much harder to find those scenarios now, so this was an opportunity to offer a taste of this, where attendees could come in to a superlative listening environment and get feedback on their work, see demonstrations, and provide at least a taste of that kind of direct contact.

“A lot of people are trying to learn from resources like YouTube videos,” Wyner continues, “and it’s really hard to figure out what information is good and what is not. It’s not the same as being able to turn to someone in the same room and say, ‘Listen to this, let’s talk about it.’ That was really the impetus for the Mastering Academy.”

Wyner is the main instructor for the Academy and was assisted by Bradford Swanson, an accomplished educator in his own right. (Wyner is also an associate professor of music production and engineering at Berklee College of Music in Boston.)

“We’re just starting to ramp up activities here,” Wyner says. “Education has always been a core value of the company, but it hasn’t been expressed with some of these kinds of activities before. We’re still in development. Our intention is to repeat the Mastering Academy on an annual basis.”

The studio is also used for product testing—both iZotope’s own products and its competitors. “We test competitor’s products to figure out why people like a certain product, for example,” Wyner says.

Beyond having high-quality monitors and great acoustics, it was im-

portant for Wyner to have the switching capability with audio and video and the proper connectivity. “KVM and the Ravenna network gives us so much flexibility to deploy really high-quality audio, and it allows access to any machine from any room.”

Though Wyner is only about a year into his position as education director at iZotope, he has been working as a consultant for the company for the past 10 years. He initially became involved with the company when he discovered that iZotope’s offices were about seven or eight blocks from his mastering studio, where he’s worked with the likes of James Taylor, David Bowie, Aerosmith, Aimee Mann, London Symphony, Miles Davis, Semisonic, Thelonus Monk, Pink Floyd, Cream, Bruce Springsteen and Nirvana. “You have to remember, this was at a time when the idea of mastering software was not so common,” Wyner says. “I thought some of the software available was suboptimal. I decided to pick up the phone and call the company, and I said, ‘Hey, I’m down the street, can we sit down and talk?’ I didn’t expect anything to happen, but they invited me to lunch and said, ‘Tell us about everything you think should be improved.’ They were very open-minded and very interested in giving people something that was very useful to them.

“I think one of [iZotope’s] primary motivations is to build something that will help people do better quality work, and that includes educating them as well,” Wyner continues. “Education has been embraced as a separate activity, it’s about helping people do better work and be happier in their work. It’s really fun to be involved with that here.” ■



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## Problem Solvers



By Kevin Becka

**I**t's great when you find things that make your life easier, things that become such a part of your day-to-day world that it's hard to think of your life without them. Problem solvers needn't be expensive or expansive.

For example, at Blackbird we started using Cable Cuff Pro to keep longer speaker and instrument cables together. It's always a pain to wrangle 25-foot-plus runs of cable used to isolate speaker cabinets or make long instrument runs to a combo amp from a guitar station or control room. These inexpensive organizers make it easy to store, hang and work with long lines. They come in many sizes and have a ratchet and pushbutton release—kind of like the toy handcuffs you had as a kid, but without the chain. You can get them online or at most home stores.

Lumit is a new DAW inspired by Berklee students and just released at NAMM. Another DAW, you say? You never know! Lumit (\$149) is now 32-bit, but a 64-bit version is in the works. It supports ASIO, ASIO4ALL, Direct Sound, MME, and WASAPI drivers, and offers full audio, MIDI and automation recording, plus sequencing and VST3/i plug-ins. As with many predecessors, there is a complete mixing console and waveform display, and it operates at up to 192kHz/32-bit float. It works on a laptop or, more importantly, fully on a tablet (hello future) with multi-touch hand gestures and a dynamic GUI that handles any resolution from 1280x720 and up. It comes with more than 1k of synth, percussion, and bass samples, and an audio DSP FX suite.

Never to be outdone, at NAMM, Apple's Xander Soren gave me a one-on-one demo of their Music Memos app, and it is incredible (and free). Xander put his phone on the table, pressed Record on the app and played a song on the guitar. Music Memos analyzed the song, outlining the changes, and added drums and bass upon the first playback. Xander's playing was tight, but if you slow down, or alter the arrangement with a breakdown, rubato ending or the like, the band follows. From here you can name the track, rate it using the familiar star system, and leave it at that. Or, you can take it up a notch or 10 by importing it into Logic Pro X or GarageBand on your iPad or laptop. From there you can change the personality of the players (styles), create a chart for musicians, and add tracks. For

music creators, this is a must-have tool that is always with you on your phone ready to capture ideas. It's free, and a no-brainer.

AudioNamix is a new software company from France that offers a range of tools, including ADX Trax and ADX Trax Pro, Vocal Volume Control, and DJ Voxchanger. It took me awhile to get my head around this powerful tool, but when Austin Seltzer, one of my students, asked me for a solution to an audio problem he was having, the light bulb went on. He was readying a mix for radio and had to remove two words NSFW. He couldn't get the tracks back and had to find a way to fix the problem from the submitted mix, so I told him about the software. From Austin: "With ADX TRAX Pro I was able to remove just the offending words from the stereo mix without harming the instruments and ambience surrounding the vocal. ADX TRAX Pro analyzes your entire song, then separates the lead vocal for

***ADX TRAX Pro was able to remove the offending words from the mix without harming the instruments and ambience surrounding the vocal.***

editing. Then the process menu tab takes you to a spectral analysis editor where you can remove the last bit of vocals from the instrumental, ensuring the best separation from the track." Austin was impressed, was able to save the day and the song made it to the airwaves sounding great. On a side-note, Austin is now working for CLA (I like to brag about my kids).

Ever wondered about getting IEMs but thought the process with the self-applied ear goop or the expense of hiring a pro to do it was too daunting? Ultimate Ears plans on

changing that. They are taking the process of getting an impression of your ear canal horizontal, meaning you can go to your local GC or other outlet and have it done there using a simple, hand-held digital scanner. The process is painless, goop-less and easy. They had 30 stations at NAMM spread over three booths on the floor taking free digital ear impressions to all comers. But that's not my favorite part. Their new UE Pro Reference Remastered high-resolution IEMs created in collaboration with Capitol Studios are incredibly good. The new drivers blow the lid off the bandwidth, both high and low, from their first iteration. They are worth checking out as a second, third or fourth, trusted listening option when mixing.

These are just some of the problem solvers that have crossed my path in the last month or two. In my travels, interaction with audio pros at work, and exposure to new gear, I'll be writing about these from time to time—watch for it. ■





"The JDX captures my sound with previously unobtainable control and clarity, offering our soundman a direct injection of sonic rage! Radial gear rules."

~ **Kerry King**  
(Slayer)



"The Radial Headload is the heart of my guitar system. The voicing of the direct signal is so natural I often prefer it over a mic. I own all the other major speaker emulators but the Headload is THE ONE!"

~ **Michael Thompson**  
(LA session guitarist - David Foster, Babyface, Seal, Michael Buble)



"I've been using the Radial SGI and JDXs for a while now... Talked about them bitches in several guitar mags too! SGI is mandatory. Best thing ever for bigger stages and big pedal boards. It's Da pro chit"

~ **Scott Holiday**  
(Rival Sons)



"My Headbones give me easy access to all of my amps and I only have to carry two cabinets. Radial gives me the transparent tone I love and the reliability I need."

~ **Tommy Johnston**  
(The Doobie Brothers)



"Spent years trying to combine all of my favorite tones on stage without carrying a ton of amps and cabs... the Headbone helps me get there. I only wish I had it years ago... I love my Headbone!!"

~ **Mark Tremonti**  
(Creed, Alter Bridge)



"My annoying inability to compromise has lead me to some odd places in music, and fortunately, has also lead me to the ultimate no-compromise tonal solutions from Radial."

~ **Devin Townsend**  
(Guitarist-songwriter-producer)



"The JDX accurately emulates the sound of a perfectly-placed mic without any of the downsides. The tones that come out of this thing are clean, articulate, and easy for any engineer to work with!"

~ **David Sanchez**  
(Havoc)



"The JDX is the best tool for live performance! My guitar sound is really clear and HEAVY! Radial Rules!!!"

~ **Alan Wallace**  
(Eminence)

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# PowerTools™ ... for Amp Heads!

At Radial, we care about tone. ... and know you are passionate about it too. That's why we work with players and techs around the world to develop tools that help our 'amp head' friends get the great tone they are looking for.

## Headload™ amplifier load box:

The ultimate load box! The Headload lets you attenuate your amp down to any level, emulate 6 different cabinets and send your signal to the PA or recorder with the built-in JDX direct box and Phaser!

## Headbone™ VT head switcher:

Use your two favourite amps on stage and switch between rhythm and lead with one stomp of a footswitch! Safe, efficient and noise-free!



## Headload Prodigy™:

Combination load box and DI that lets you drive your guitar amp at a higher output in order to maximize the tone, yet produce a lower stage volume when needed.

## Twinline™ amp effects loop router:

Use your effects on two different amps! The Twinline lets you remotely switch your entire pedalboard from one amp to another when using your amp's built-in effects loops.

## JDX48™ Reactor amplifier DI:

Captures your amp and cab tone consistently night after night. No more worries about mic placement, poor acoustics or bleed from drums and bass.

**Radial**  
engineering  
...PowerTools for Power Players™

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