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Photo: Mark R. Smith



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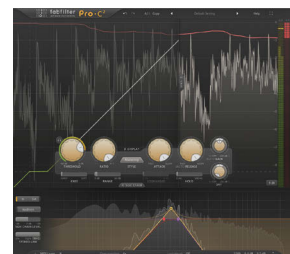
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## From the Editor

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### DON'T CALL IT 'EDUTAINMENT'

**P**ensado's Place is highly entertaining. Pick any of the 240-plus weekly episodes and it's apparent—even residing in a niche arts- and technology-centric market like professional audio—that this is good television. It's engaging, instructional, cultural and just plain fun, often moving beyond the bounds of craft and into simple life lessons. A lot of that has to do with the guests, as engineers, producers and musicians can be a highly entertaining lot, with plenty of stories to tell. But most of it has to do with the gentle Southern charm and folksy authority of its namesake, Dave Pensado, and his longtime friend and show co-host, producer/manager Herb Trawick. Their familiar, easy interaction is the same on-camera as off-camera, and they bring an insider's accessibility to the studio set. These are guys you would like to hang out with.

Pensado's Place is also highly educational, well beyond the specific techniques imparted by the guests. There's business advice, career advice and recording advice. Into the Lair (so-named because of Pensado's penchant to mix in low light), which goes in-depth on a take or technique, has been a regular feature since the debut. Trawick says that his “aha” moment when he knew the show would take off was when he saw the number of schools signing in grow from zero to 17 in the first four months, with very little outreach. Today, there are more than 17,000 “student members” in the Pensado community, and developing new forms of curriculum, and expanding reach through a global partnership with Hal Leonard, is one of the main planks in the rapidly growing company.

But when the popular press takes note and does a piece, dubbing the show “edutainment,” in a positive way, I still feel that it cheapens what the program really is. As if Leeza Gibbons was

going to come onstage and send us off to a report from Abbey Road after a commercial break. That is not what Pensado's Place is about. Yes, it is a commercial enterprise, and has done all right with sponsors, avoiding for now the subscription model. But it's an insider's show, with an insider's knowledge. It is entertaining. It is educational. Enough said.

It's also much more than the weekly show. Over the past five years, Pensado's Place has become a bona fide media company, with reach into social, live events, awards shows, tutorial, print, Internet radio and much more to come. They award scholarships, they hand out free studios at events, and they've formed partnerships with organizations on the many sides of the music and recording industries. In mid-November, after five years of temporary facilities at three different locations, Pensado's Place opened the Pensado Media Center on Lankershim Boulevard in Los Angeles. It is pictured on this month's cover.

Pensado and Trawick hint that there are three more to come, as they reach across the country with physical hubs to complement their online community. Their loyal online community. The show's scope will be expanding into other areas of audio, such as post-production, broadcast, forensics and composition. Photographers and authors will visit the Media Centers to strut their stuff. And these hubs will become what Trawick calls “the physical repositories of knowledge.”

Just don't call it edutainment.

Tom Kenny,  
Editor

---

### Error Log

In the feature “Coast Mastering Opens” in *Mix*'s December 2015 issue, on p. 32, the story identifies Michael Romanowski's former Coast Recorders as “a tracking, mixing and mastering facility,” when in fact it was a tracking and mixing facility. It also states, “Michael Romanowski Mastering...became Coast Recorders”; however, those were two separate businesses that co-existed in San Francisco. Finally, Romanowski uses Focal Stella Utopia EMs, but not Focal Grand Utopia EMs.

In *Mix*'s December 2015 issue, on p. 28 in the story “The Darkness: ‘Last of Our Kind’ Tour,” front-of-house engineer Andy Shillito's name was misspelled.

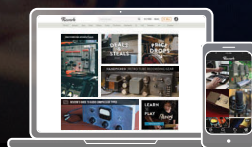
*Mix* regrets the errors.





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## NAMM TEC Awards 2016

The NAMM Foundation in Carlsbad, Calif., presents the 31st annual NAMM Technical Excellence & Creativity Awards and the NAMM TEC-nology Hall of Fame on January 23 at the 2016 NAMM Show. The events honor the best in audio and sound production, as well as audio technology products from the last 75 years that have made a substantial impact.

The January 23 event will be held in the Hilton Anaheim Pacific Ballroom and hosted by Sinbad. A reception begins at 6 p.m. with the ceremony following at 7 p.m.



Photo: Gabi Porter

Record producer and music industry executive Don Was will receive the 2016 Les Paul Award. Was is one of music's most significant artists, producers and executives. He co-founded former Detroit-based band Was (Not Was) with childhood friend David Was (Weiss) before going on to produce decades of commercially successful and critically acclaimed recordings for top artists.

He has earned multiple Grammy Awards for his production work over the past three decades including Bonnie Raitt's *Nick Of Time* (1989), Producer Of The Year for work with artists ranging from The Rolling Stones to Willie Nelson and Roy Orbison (1994) and Ziggy Marley's Best Musical Album For Children, *Family Time* (2009).

As President of Blue Note Records, Was oversees the label's extensive reissue campaigns that serve audiences in both the analogue and digital realms. He joins a prestigious group of Les Paul honorees including Stevie Wonder, Sting, Pete Townshend and more, who have "set the highest standards of excellence in the creative application of audio and music technology," according to the Les Paul Foundation.

Earlier on Saturday, the NAMM TEC-nology Hall of Fame will induct 10 audio products and innovations released between 1928 and 2002 that have made a significant contribution to the advancement of audio technology. The ceremony, presented by the NAMM Museum of Making Music and hosted by George Peterson, editor of *Front of House Magazine*, will be a celebration of nostalgia and innovation. A panel of more than 50 recognized audio experts, including authors, educators, engineers, facility owners and other professionals, selected the nominees.

The TEC-nology Hall of Fame ceremony will be presented Saturday, January 23, from 4 to 6 p.m. in room 202A of the Anaheim Convention Center in the TEC Tracks educational area. Seating is limited and available to credentialed NAMM attendees, inductees and their guests.

2016 NAMM TEC-nology Hall of Fame Inductees are Decibel Unit (Bell Labs, 1928); Wurlitzer Electronic Piano (1954); Auratone Sound Cubes (1958); Neumann KM84 (1966); Shure SM58 (1966); Roland RE-201 Space Echo (1973); Lexicon PCM 41 (1980); Eventide H3000 UltraHarmonizer (1986); Manley VoxBox (1998); and Avid Digidesign Pro Tools | HD (2002).

## 58th Annual Grammy Awards Nominations



The Recording Academy announced nominations for the 58th Annual Grammy Awards in all 83 categories for recordings released during the Eligibility Year October 1, 2014 through September 30, 2015. This year's nominees were selected from more than 21,000 submissions entered.

As the only peer-based music award, the Grammy Awards are voted on by The Academy's membership body of creators across all disciplines of music, including recording artists, songwriters, producers and engineers. The awards will be presented Monday, February 15, 2016, live from Staples Center in Los Angeles.

This year, Kendrick Lamar leads nominations with 11, followed by Taylor Swift and The Weeknd, who each earned seven. Additionally, music producer/songwriter Max Martin receives six nominations and mastering engineer Tom Coyne, rapper Drake, and engineers/mixers Serban Ghenea and John Hanes each earn five nominations.

"The diversity in the creative community is what makes music a universal language, and it's gratifying to see the vibrancy of today's artistic landscape reflected in this year's nominations—a testament to The Academy's voting members," says Neil Portnow, President/CEO of The Recording Academy. "Artists are pushing boundaries in exciting ways, making it an exceptionally strong year for music."

*Mix* magazine congratulates all of the audio production professionals who were involved in all of the nominated projects. Go to [mixonline](http://mixonline) to see a list of nominees for Record Of The Year, Album Of The Year, Best Engineered Album, Non-Classical; Producer Of The Year, Non-Classical; Best Surround Sound Album; Best Engineered Album, Classical; and Producer Of The Year, Classical.



AES President  
John Krivit

### AES Appoints John Krivit As President

In December, the AES welcomed John Krivit as its new president, taking over from Andres Mayo, who remains on the AES Executive Committee as Past President for the coming year. Krivit previously served as chair of the AES Education Committee and is currently an Associate Professor teaching at Emerson College and Bay State College in Boston.

Krivit was voted President-Elect of the AES in 2014 and has served on the Executive Committee of the Board of Governors over the past year. Now in his 20th year of teaching, he is the founder of the Boston Area Definitive Audio Student Summit and of Hey Audio Student, a public Facebook group with more than 8,000 members that chronicles the events, resources and opportunities available to audio students at all levels.



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# On the Cover

By Tom Kenny

## THE PENSADO MEDIA CENTER

New Production Space Adds Radio, Photography, Library, Culture



Photo: Will Thompson

From left, Dave Pensado, line producer and jack-of-all-trades Chongor Goncz, and executive producer Herb Trawick. Inset: The Pensado Desk on the new studio set, which includes green screen, eight variable backdrops, lighting, live streaming, and three-camera shoots.

**P**ensado's Place is much more than an Internet-based TV show. That's how it started five years ago, for sure, the first few episodes posted to a new site, shot in a makeshift studio at a digital network called This Weekend, with a little social media thrown in. And that's how most viewers first discovered it, from a link that brought them to the set where Dave Pensado and Herb Trawick combined folksy charm, hard business advice, tutorial technology lessons, and a bit of fun over the course of a weekly hour in conversation with engineers, producers and musicians. All for the pro audio community.

That was Phase One, the origin story, and it's been told in outlets as wide-ranging as *Forbes* and *The Huffington Post*. It's a story that involves career re-invention and a longstanding friendship between Pensado and Trawick, the Talent and the

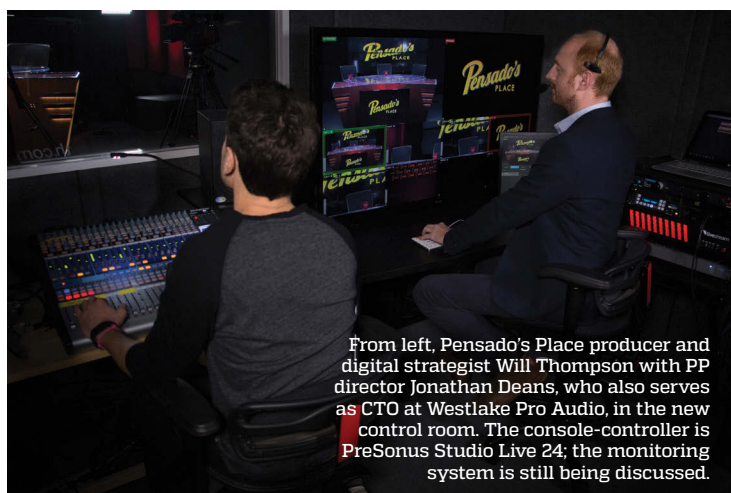
Producer/Manager, *The Gold Standard* and *The Visionary*, with natural chemistry on-camera and off. After about eight months of weekly shows, live events combining performance and technology were added, then a book, then an awards show. Sponsors caught on and lent financial and technology support. The number of views piled up.

Today, Pensado's Place is viewed in nearly 150 countries, with more than 500,000 monthly views and 132,000 unique visitors. There are 17,000 members in a student group, and more than 120 schools, recording programs and studios use Pensado's Place or *Into The Lair* as a teaching tool or in their curriculum. It's a community that came together very quickly, a niche market riding the crest of new-media distribution. And while it seems to have evolved organically, slowly, with new mediums of dissemination added piece by piece, it's all been

part of the plan from Day One.

"When we first started, it was a show about audio," says Dave Pensado. "Somewhere along the way, it felt like we were given a de facto responsibility for our audio family. All of my friends are engineers, and it became more than something we were doing; it became something our friends needed. In our first year, Chris Lord-Alge came to me and said, 'Dave, you and Herb have made our profession superstars. I've been recognized on the street.' Herb found a way to make it grow into something the audio industry recognizes as its own."

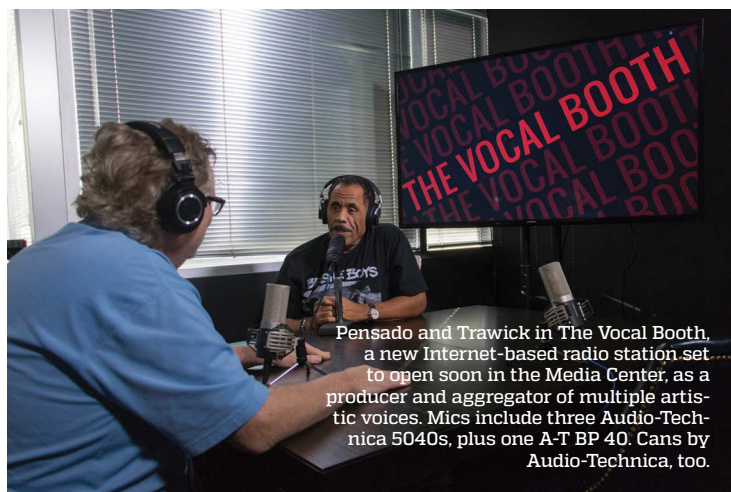
While Pensado is the front man on air and maintains his music engineering career, waking each morning and doing a mix, Trawick has become an equal voice on camera and the true force behind the scenes of Penwick Media, their equal-partner co-venture. As Pensado says, "I



From left, Pensado's Place producer and digital strategist Will Thompson with PP director Jonathan Deans, who also serves as CTO at Westlake Pro Audio, in the new control room. The console-controller is PreSonus Studio Live 24; the monitoring system is still being discussed.



A small sampling of the new Pensado Media Center Library, which will be pulling in massive amounts of music, recording, culture and technology-based texts from publishers around the world to assemble in one place a center of recording knowledge.



Pensado and Trawick in The Vocal Booth, a new Internet-based radio station set to open soon in the Media Center, as a producer and aggregator of multiple artistic voices. Mics include three Audio-Technica 5040s, plus one A-T BP 40. Cans by Audio-Technica, too.

told Herb that he can leave me alone on the music side, and I'll leave him alone as he plots world domination."

"What we thought was going to be temporary, providing content, something online, has now become something that is a cause celebre," Trawick adds. "So we had to nurture it and grow it, or walk away. The responsibility had grown too big. Students and parents and our family of engineers—educators and schools took us seriously from the beginning, and we took their attention seriously."

The rapid five-year growth took place in a variety of facilities, all of them rented, all of them limited in some way. To complete Phase Two and become a true media company, with a digital, print and events portfolio, Pensado and Trawick needed their own space. About five months ago, in partnership with Westlake Pro Audio (whose CTO, Jonathan Deans, is the director of Pensado's Place), they outlined their needs, and in late November 2015, they moved into the new Pensado Media Center on Lankershim Boulevard in Los Angeles.

"We had created the online hub for audio," Trawick says. "Now we wanted a physical hub for audio. We have eight to ten sets to roll in and out. Green screen. Different furniture configurations. Makeup. Office space. Classroom. We can live stream anywhere. We can shoot curriculum, equipment demos. We have a photo gallery, the first of its kind for audio, and a library where we plan to do book signings and serve as a repository of all the industry's knowledge."

And there's so much more. The new facilities include a room for The Vocal Booth, a soon-to-come Internet radio/podcast producer and aggregator—adding other voices to the Pensado Brand. At NAMM this month, Pensado's Place is announcing a global partnership with Hal Leonard Publishing to provide the Strive curriculum series to more than 65 countries and 7,000 worldwide educational outlets. Plus, three more Media Centers are planned—East Coast, Nashville and another TBD.

There will be 10 live events this year, including two Gear Expos, L.A. and Nashville, with original Title Sponsor Vintage King. There are talks with Russia and India. The Awards Show promises to get even larger. And Pensado's Place itself is now at 240 episodes, branching out into areas such as film music and forensic audio—all of it free to the online community thanks to sponsors such as The Blackbird Academy, Audio-Technica, Avid, iZotope and many others.

"Every month I wake up at least once and think this can't possibly go on any longer," Pensado laughs. "On our first episode, we get these thousands of views, and I thought, 'Who are these people?' Then I realized that these people are my friends, engineers. I've been blessed. I've learned more than anybody these past five years." ■



Pensado's Place makeup artist Cindy Escalante in the Audio Art Gallery, currently featuring work from Brian Petersen and Phillip Mascias. Below: A small sampling of the photography on the walls includes The Pensado Awards Hosts Randy Jackson, Young Guru, Chris Lord-Alge, Sylvia Massy, Justin Meldal-Johnsen; and Randy Jackson with Quincy Jones.





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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.

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# Music



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## SAVAGES

'Adore Life' By Lily Moayeri

**T**here is a moment during a band's live show where they announce they're going to play a new song. This is met with an enthusiastic reaction from the audience, but in all honesty, the crowd just wants to hear the favorites. For the band, however, this is an opportunity to try out new material and get instant feedback. For the UK-based/French-fronted foursome Savages, trying out of new songs and getting instant feedback is taken to the extreme.

The post-punk quartet released its raw debut, *Silence Yourself*, to an avalanche of fan

and critic approval in 2013. A year prior to the release of its follow-up, *Adore Life*, the group flew to New York for a month to play nine gigs, three per week, in three different venues. The sole purpose for this was to test out the songs written for *Adore Life* in a live setting and gauging audience response.

"They are really brave," says Johnny Hostile, producer of both Savages albums, longtime partner of Savages vocalist Jehnny Beth, and considered the unofficial fifth member of the group. "The first album was created for a live stage purpose. When they started to write the

second album, they didn't tour at all. They didn't experience it live so they missed that aggression at a very early stage; the adrenaline element wasn't there. This was a creative way to bring what they needed. They are really confident about what they do, what to aim for, and what they want. I was there to make sure they don't have an identity crisis."

Once the savage ingredient was in place, the group and Hostile set up at London's RAK Studios with engineer Richard Woodcraft. On *Silence Yourself*, Hostile recorded the band all together, in the most punk way they could





Producer Johnny Hostile

manage, with only a few retakes, resulting in a tough-sounding record. For *Adore Life*, Hostile wanted to make sure he did just the opposite. To this end, he spent a significant time in preproduction with individual members, delineating each part of their instrument's tone, texture and tempo. The Savages themselves are as detail-oriented as Hostile, with guitarist Gemma Thompson spending over a week on experimentation or drummer Fay Milton spending an entire day picking out cymbals.

The drums are a particular standout on *Adore Life*, something Hostile had in mind as it was one area he was not entirely satisfied with on *Silence Yourself*. Milton spent 10 days on drums with Hostile and Woodcraft in RAK's Studio 3, whose Neve VRP Legend 60-channel console with Flying Faders automation was the perfect setting for her combination Yamaha kit and RAK's 1969 Ludwig Hollywood. The kick is miked with an AKG D12 VR and Neumann U 47 FET to separate tracks. Shure SM57 on the top and bottom snare with Sennheiser MD421 on the toms and a pair of Coles 4038s overhead for control to the top of the kits with Savages' cymbal-heavy sound.

"The Neve is really well-maintained and sounds good for anything," Woodcraft says. "It is the live room that is more beneficial for the drum sound. It has a really nice controlled percussive brightness that can be left natural or made more aggressive. The mic pre's are quite neutral-sounding, though, which is why I used outboard combinations for the key elements of the kit. I committed to recording with a considerable amount of processing in preference to using any plug-in effects in the box. For example, APIs for kick and snares, AMS Neve 1081s for overheads with EQ, AMS Neve 1073DPDs for the M50s used as the main stereo room microphones."



Engineer Richard Woodcraft

Hostile and Woodcraft moved to RAK's Studio 2 to record guitars, as that room is more intimate, which is what Hostile wanted, and has an API desk from 1976 and a wider selection of outboard gear. The guitars are amp'd with a modern Fender Twin and an early '60s Vox AC30 running parallel with a classic 57/421 combination on each amp going into the API.

"The vintage API makes for great guitar recordings: fast, punchy, clear preamps and 550A EQs for adding a bit of extra tone after the amp," Woodcraft says. "There's also a nice thing you can do with some auxiliaries that add cool overtones. Careful placement and use of room mics helped add to the atmosphere and parts."

He continues, "For the bass, we often swapped between heads for different songs as the sound and what we wanted it to achieve in the track would vary. It was quite a complicated setup with a carefully considered balance of different mics between tracks. For a few songs, I used my early '60s valve Watkins Copicat as a preamp with tape compression,

sometimes with a tiny amount of slapback. There could also be one or two of [bassist Ayse Hassan's] pedals in-line depending on song or sections of verse or chorus."

During the first week of recording, the only time the group performed together, for the purposes of laying down guide tracks, Beth used a Shure SM7B through a Calrec RPQ 3200 channel strip and UREI 1176 Silver Face. This microphone was used mainly as a way to keep spill down during these takes, but it also lends itself well to a busy track, has the effect of compressing itself, and is less intimidating to vocalists.

"When you have a strong vocal, it's hard to convince singers to push hard," Hostile says. "You can shout into the SM7B. It's like a live microphone, and vocalists feel very comfortable to play around, scream, all that stuff."

The details carried through to the recording platform, which at RAK is Pro Tools, then editing on Logic at Hostile's producer studio in Paris, and finally mixed by Anders Trentemøller on Ableton Live.

"I premix everything," Hostile says. "I make sure all the effects, the space, the groove, the energy is there, that I've got the album aesthetically before it goes to mixing. I wanted [Trentemøller's] genius on this project. I went on tour with him and fell in love with his music. When I asked him to mix the record, he said he was a massive fan of Savages but had never mixed a rock record, or anyone else's music besides his own."

"He's good at re-creating space, he's very subtle, he loves low end, and that's what I was aiming for on this album. His sound is so precise and his dynamic is so impressive that I thought if we only could have a bit of that on the record, we could do something really special." ■





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## DAVE GAHAN & SOULSAVERS, 'ANGELS & GHOSTS'

Listening to Dave Gahan and Soulsavers' latest album, *Angels & Ghosts*, it's hard to believe it was created between their home studios—all but the strings and horns. The production duo's Rich Machin creates the string sounds using a digital string package, which he plays on a keyboard to work out the parts. These ideas, along with reference pieces—for example, an Ennio Morricone soundtrack from the late '60s—is what Machin takes to renowned composer Daniele Luppi. Having worked with Luppi for years, Machin has become versed in strings.

"[Luppi] has taught me how to listen to records, break them down, and identify individual strings," Machin says. "Before [Luppi], I didn't have the knowledge to really be able to understand how you built up a string sound."

These sounds are prevalent on *Angels & Ghosts*, with six out of the nine songs having strings and horns performed by The Hollywood Strings & Horns Ensemble, and recorded in Sunset Sound's Studio 2 in Los Angeles. Machin's orchestra sample melodies are first transcribed by Luppi, then



adjusted by him for playability by the orchestra.

"Sometimes string samples play notes that are unplayable by real instruments or that don't sound good that low or that high," Luppi says. "The demo I received was piano chords with a clear and grounded main harmony and [Gahan's] vocals, so there was a lot of room for ideas. For example, doing a completely different countermelody on 'All of This and Nothing.'"

Luppi records the orchestra the same way every time, using a Decca Tree microphone configuration with three vintage Neumann U 47s for the Decca and U 67s for the close mics on each instrument. Furthermore,

in that particular warm room, Luppi tracks the echo chamber in real time.

"I used a technique close to avant-garde and film music string writing, where instead of reinforcing the basic existing harmony, you alter it by exploiting the more unusual and odd notes of the chords," Luppi says. "The effect is that the strings sound unresolved and add tension to the performance. I further divided the strings in very small groups so I could do more independent melodic lines, such as on 'One Thing.'"

He continues, "The risk factor is that when you have such quiet and intimate material you don't normally want to add complexity. When the writing and performance is strong, the arrangement can dare to do something especially sophisticated and unexpected." —*Lily Moayeri*

## COOL SPIN: YACHT, 'I THOUGHT THE FUTURE WOULD BE COOLER'



By the time you get through the second full play of *I Thought the Future Would Be Cooler*, you'll have decided whether you love the fully synth-popped Yacht or not. If you do, you'll forgive the moments on the album that

slide all the way into Top 40 mall-pop territory ("I Wanna Fuck You Till I'm Dead") and remember more fondly the moments when this evolving electronic duo embraces the funky bassline dance rock of !!! ("Matter") or the bouncy shout-sung anthems of Icona Pop ("Ringtone") and puts them through its own ring-er of hipster house.

Now if you do make it to a third listen, by the end of that, you'll be convinced that Yacht has elevated to an art form the writing of songs that should have been one-hit wonders in the '80s ("Don't Be Rude" and "War on Women").

Produced by Jona Bechtolt, Rob Kieswetter and Justin Meldal-Johnsen. —*Markkus Rovito*



## SAM SPARRO, 'QUANTUM PHYSICAL VOLUME 2'

Sam Sparro is identified by his smooth and soulful vocal style, but unlike others in his musical bracket, he does all the parts himself. The action happens in Sparro's cozy basement studio in his Los Angeles home. It's here that he put together his latest release, *Quantum Physical Volume 2*, the second in an EP series.

For all his smoothness, Sparro's go-to microphone is the robust Shure SM7B, "the Thriller mic," as he can yell into it. He relies heavily on Universal Audio both outboard, LA-610 MkII, and plug-ins including Lexicon and Space Echo as well as the Maserati VXI from Waves. Logic is his main DAW.

"I use distortion, saturation and reverb as a vocal tool," Sparro says. "I notoriously layer vocals and like them to be present. On 'In Your Heaven,' to give it that large vocal harmony, I run all my background vocals into one chain and put a group compressor on there. I like the Fairchild 670, which I then run through a bus with some harmonizer and distorsors. I like the tape replications. Even if I use tuning to give the background vocals a clean pitch, I'll put wow and flutter on them and distort them to make them sound not as crisp. I use reverb as a coloring tool in the mix. I love long-tail reverbs with no sidechain—although I did use sidechain on 'Hands Up.'"

Sparro has been known to do five of each harmony: left, not as left, center, not as right, right. With years of studio practice and impeccable timing, he is able to deliver these vocals in sync. Says Sparro, "There is an ABBA documentary I saw where the two producers would make the girls stack so many layers of the lead vocal, that's why it sounded so big. Before there were tools to double vocals, they would sing four or five of the lead vocals and mix them down to one voice. Quincy Jones did that with Michael Jackson: the main vocal really loud, then one from further back, then one from the left, and one from the right. I do that with background vocals. The thing I always strive for is taking something digital and clean and making it sound a little dirty." —*Lily Moayeri*



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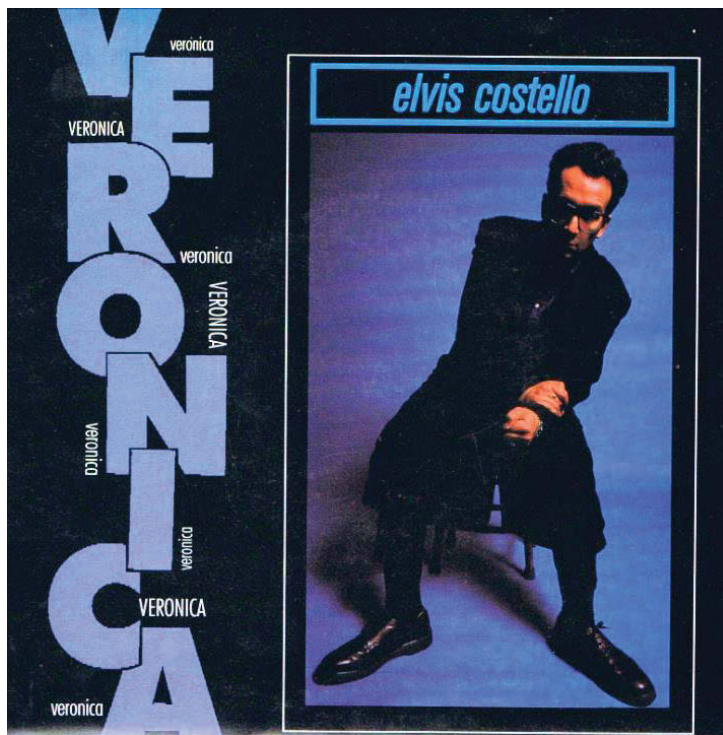
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# Classic Tracks

By Barbara Schultz



## "VERONICA" Elvis Costello

In his recent memoir, *Unfaithful Music & Disappearing Ink*, Elvis Costello writes—among many other things—about the impact that The Beatles had on his musical life: “Please Please Me” got him fired up about rock ‘n’ roll when he was nine. He counts a complete set of Beatles autographs among his musical treasures. He made the ambitious, beautiful album *Imperial Bedroom* with Beatles engineer Geoff Emerick in 1982. And Costello wrote and recorded his highest-charting single to date, the Number One Modern Rock song “Veronica,” with Paul McCartney.

“When I’d got the call to say Paul wanted me to write some songs with him for his next record, I didn’t know what to expect,” Costello writes, “but as his last co-written hit had been with Michael Jackson, I wondered whether I should be taking some dancing lessons.”

Fortunately, great moves were not required for this collaboration. Costello’s writing sessions with McCartney took place above McCartney’s East Sussex studio, where the two artists were “sitting on two couches across a low table with a pen, a notepad, and a guitar apiece,” Costello writes. “Bill Black’s upright bass, the one with the white piping that you see in early stage pictures of Elvis Presley, stood in the corner like a good-luck charm.”

Both arrived with partially completed songs, some of which later landed on McCartney’s *Flowers in the Dirt* album (1989, Parlophone), and others that became part of Costello’s album *Spike* (1989, Warner Bros.).

“I’d brought an early draft of ‘Veronica’ that you would have recognized, but we immediately got to work putting a better flow into the chorus and shifting the bridge into making that part of the song seem more like a dream,” Costello explains in his autobiography. “All of the words that I’d already written were about my paternal grandmother, Molly, or more formally, Mabel Josephine Jackson. In fact, her Catholic confirmation name, Veronica, provided the very title of the song.”

Costello’s grandmother had suffered from dementia, and the dream-like qualities of the song lyrics and the arrangement (and the MTV Video Music Award-winning video) reference the confused, irregular flashes of her memory. But the recording somehow turns this dark, fragmented subject matter into a bright, sparkling pop song.

“In our initial discussions with [*Spike* co-producer] T Bone Burnett and Elvis and myself, we all felt that ‘Veronica’ was the best opportunity to have a single on the record,” recalls *Spike* engineer and co-producer Kevin Killen. “We said, ‘Let’s do everything we can to make it undeniably great and infectious’; every decision was made to maximize that impact. Generally speaking, tonally, we wanted something that was bright but also had a lot of resonance in terms of how the vocal was perceived.”

The diverse, 15-track album *Spike* was to be the first Costello made under a new deal with Warner Bros. Records. That’s likely one of the reasons that the artist went into this project with even more lofty goals than usual, and with a commitment to creating at least one big single for the album. Recording sessions for *Spike* began with the songs “Any King’s Schilling” and “Tramp the Dirt Down” in Dublin and then moved to New Orleans, where Costello and company worked with the Dirty Dozen Brass Band and Allen Toussaint on further tracks.

Then the team decamped to L.A., where the remaining songs were laid down in Ocean Way Studio 2. “That was one of T Bone Burnett’s favorite rooms, and the very first time I worked there, I realized why,” Killen says. “It has a very particular sound that’s very warm. It had a great Neve 8038 console; without exaggeration, almost anything you put through that console sounded wonderful.

“And then Allen Sides, who was still the owner at the time, had a really good monitoring system in that room,” Killen continues. “He coupled Altec speakers with some midrange drivers—they might have been JBLs—and connected them to McIntosh amplifiers. But it wasn’t just the combination of components; it was the way the room was constructed. The soffiting in the control room was of a particular type that Allen had overseen, and he made sure the imaging and energy that was coming from the speakers was directed at the listening position, which gave a very accurate picture.”

Whereas many of the songs on *Spike* started with live basic tracking,



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followed by overdubs, “Veronica” was built in layers, starting with a drum machine pattern and Costello and Burnett playing acoustic guitars. “I would have used a combination of a [Telefunken] 251 microphone to get the full body and probably a [Neumann] KM 84 to get a little bit of sparkle out of the guitar,” says Killen.

Next, Mitchell Froom added his Wurlitzer; the speaker cabinet was miked with two Sennheiser MD421s. Froom also added DI’d electric piano and Chamberlin parts. “That Chamberlin part is the little trumpet sound in the middle of the two verses,” Killen reveals.

“Then we had Benmont Tench come in to play piano and the little tinkly spinet part. And then Elvis went in to do a vocal. He likes to do vocals quite early in the process, so this was maybe the second day. Then the next day he redid it. It was probably just one pass for him to get himself set, and then the second or third pass usually is the take. And then, of course, he quickly did the harmony background parts. He’s excellent at harmonizing with himself.”

Costello’s vocal mic was a Neumann U 47. “We always used a particular one that he sounded great on, to an LA-2A, and all the mic pre’s we used



Kevin Killen

were the ones on the console, which were 1073s,” Killen recalls.

Killen and the musicians kept filling up the Ampex ATR124 tape machine, track by track. “After the vocals, we added Michael Blair’s percussion part: the timpani part in the chorus, which is part of the hook—that little accent that comes in. That’s a slight homage to Burt Bacharach, whom Elvis adored but, up to this point, had not worked with yet.

“Mitchell and I had both worked with Jerry Marotta and we knew that he was going to be in Los Angeles,” Killen continues. “We invited him over to play on that song. At the time, I was just in love with piccolo snares. Most of the other snares and other drum sounds

on the record were slightly thicker or deeper sounding, and we wanted something that had a real pop to it—something that didn’t take up lot of space but had a real signature to it. So we chose a little piccolo snare, and as soon as Gerry started playing the part, Elvis looked at me with the broadest smile on his face and said, “That’s fantastic!”

Marotta also contributed the idea of holding off the bass drum until the second half of each verse. “It’s such a hook,” Killen says. “You don’t even think about it, and then it comes in, and it’s another infectious hook within

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the layers of the arrangement that propels it and keeps your attention.”

Killen’s go-to drum-miking scheme at the time included an Electro-Voice RE20 and AKG D112 on kick, SM57s on snare top and bottom, 421s on tom toms, a Neumann KM 84 on hi-hat, Telefunken Elam 251 for overheads, and two Neumann U 67 room mics.

Once all the songs had been completed at Ocean Way, the team made their way to London to record the last piece of the arrangement: Paul McCartney’s Hofner bass, which was captured with a DI at AIR Studios. “It was an interesting process to work on a song with no bass throughout, and then hear the bass part as the final overdub,” Killen says. “His part is undeniably great. It helps complete the track.”

Mixing for *Spike* then began at AIR, but a booking conflict soon sent everyone back to Ocean Way, where most of the songs, including “Veronica,” were mixed on the Neve 8038.

“That studio was really intended to be a recording studio, not a mixing studio, and that console had no automation,” Killen says. “So we basically mixed this whole album by hand—very old school. We pulled the half-inch machine up close to us and went through the arrangement and figured out: This is how the introduction’s going to go, this is how the first verse is going to go, etc. We had myself, Elvis, T Bone, and our wonderful assistant Mike Ross manning faders, going section by section.”

On “Veronica,” one of the elements created during the mix was the dreamy, phased-sounding bridge that starts with the lyrics, “On the empress of India...” “We set about offsetting two tape machines and

did the old flanging/phasing with two tape machines running side by side,” Killen says.

Another element that makes “Veronica” pop is the juxtaposition of more gentle, harmonized vocals in the verses with the more strident singing in the chorus. The shift from one vocal style to the next is arresting but never jarring, and Killen’s approach offers insight into his mixing philosophy in general, as well as into the specific song:

“I’m always very conscious of what happens in the center of the image,” Killen says. “I try to keep as many of the instruments as possible out of the center image so I can keep that space available for the vocal, and part of that trick is to pan things slightly—not just off center, but even hard left and hard right so the only things that were in dead-center were the kick drum, the snare, the bass, and vocals.

“So, tonally, the more strident part of Elvis’ vocal sits in a certain frequency range and the sweeter, lower part can sit directly beneath it, and there’s very rarely any conflict between them. The question then becomes, how do they sit in combination with the kick drum and the bass. But Paul’s part is very active, so it’s never holding a note long enough for it to clash or be in conflict with either vocal part.

“We were also conscious of the fact that if a part exists, it has to have its space. It makes its appearance and then it leaves, like the baton is being passed from one instrument to the next. This song is really good example of that. It’s a brilliantly written and executed pop song, and when you listen, it takes you on quite a little journey from top to bottom.” ■

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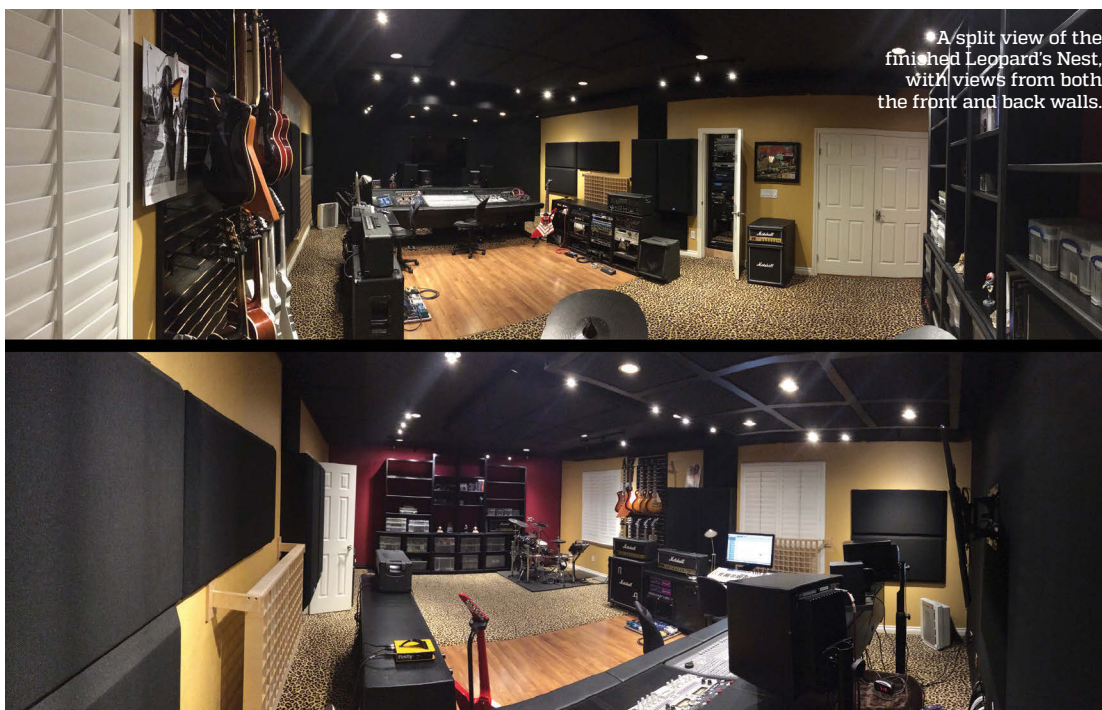
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# JASON HOOK SETTLES INTO LEOPARD'S NEST

By Lori Kennedy



house, so there's really at least four places to record from," Fagan says.

For acoustic treatment, Fagan used absorption panels and bass traps on the walls from Primacoustics. They also built a rear cloud and side soffits out of off-the-shelf Primacoustic treatments, while the front wall and rear walls are custom fabric-covered bass traps designed by Fagan and design partner Jeff Hedback. The front cloud is completely custom and fabricated mostly onsite.

At the heart of the studio sits an Avid C|24 console, which is used mainly as a controller for Pro Tools. "Everything is set up within arm's reach," Hook says. "The floor of the whole room is covered with leopard-print carpet, which was special-ordered. But in the middle of the room, there's a wood panel area in which I can roll around in.

**W**hen Jason Hook, guitarist for heavy metal band Five Finger Death Punch, decided to build a home studio, he wasn't looking for a simple computer and monitor setup. He wanted something professional, where everything is hardwired and set up exactly as he needs it. Between recording and touring with the band, there's not a lot of downtime, and he needed a space where he could get to work quickly and professionally. Timing is everything when you're a professional musician. That's why he hired studio designer Zack Fagan to create the perfect perch for Hook's home studio: the Leopard's Nest in Las Vegas.

"I was working with Kevin [Churko, producer] on a record...Kevin worked on a couple of records with Ozzy, and Zack built Ozzy's home studio, and Kevin hired Zack after meeting him through doing the Ozzy records," Hook says. "So when Kevin got his [studio] done, I was making a Five Finger Death Punch record with Kevin, and I met up with Zack. I asked him what he thought about putting a studio in my house. He came over and we tossed around some ideas. This was about three or four years ago. He threw out a number, and once I got the slush fund ready, we decided to pull the trigger."

That's when Fagan and his team at North Hollywood-based design firm Under the Wire—including lead tech Mark Ramirez—headed out to Vegas to begin work on the Leopard's Nest. "Mark helped me do all of the wiring and put this place together," Fagan says. "He played a huge part in helping us get this done on time and keeping us laughing."

The studio space/control room is 600 square feet, with a drum room downstairs that is about 200 square feet. "We have input panels throughout the

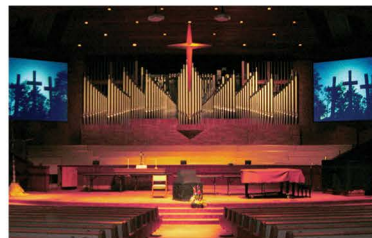
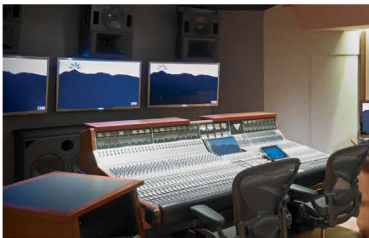
I just wanted everything patched and ready to go, where everything could be grabbed or tweaked very easily. It's a workflow thing. Sometimes when you're working from home, you're just rigging stuff together, and you can hear the hum from the refrigerator, or the air conditioner is coming through the mic...I recognized the fact that this was going to be a home studio, but I wanted to make it as functional, transparent, and as clean as I could possibly make it.

"We put a spike out back, with an isolated rod," Hook continues. "We have isolated power coming in, with Surge X Isolation Transformers in the garage. Everything comes in dedicated to this studio. There's no power interference. It's about as pro as you could get. I think the final cost of the studio was \$100K."

"The carpet was a great investment here," Fagan adds. "It really helps with the vibe. You gotta feel comfortable in a space. You can just come into the studio and everything is ready and patched into Pro Tools, and you can just fire up the session. You don't have to go far to grab anything, and I think that's really important in a modern environment."

For all of the guitar work on the Five Finger Death Punch records, Hook records his parts at his home studio. "I'm kind of stuck in the traditional way of miking up a Marshall head, running an overdrive pedal...it's really the only way I've ever done things, so I can't really break away from that," Hook says. "And so it was important for me to have a way to capture my solos here. And it's the same Marshall head—an '82 JCM 800—and the same guitar—a Gibson M4 Sherman Explorer—I've always used, so I had to be able to fire up a loud cabinet in here somewhere, and I had to have it miked up properly with the proper preamps and be able to hear it. That was my first desire for this studio.





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So we built a little 'quiet room' in the garage."

The Leopard's Nest is actually built above Hook's three-car garage; they've used one third of it for the quiet room. And that's where Hook has all of the loud amps.

Some of Hook's favorite mics for the guitar include Royer R-121, Neumann U 67, Sennheiser 421, and AKG C414. He likes the Peluso 22 47 vacuum tube mic for vocals. "I bought this off Kevin Churko. He was replacing it with another mic, and this mic had some history with it—we did some of my band's records with this, and Ozzy also used it."

"I have an Avalon [Vt-737], Anthony DeMaria Labs tube compressor, the Distressor, some Vintech Audio gear, but what I honestly use the most is the Radial Workhorse 500 Series," Hook continues. "I have two of those. For the most part, I use the Vintech and the Neve 500 Series modules. I've got the 573, 551 Rupert Neve EQ. I also have M&K MPS2510P monitors. They're the same monitors, the 7.1 surround, that they used to mix *Lord of the Rings*." Hook also has a Radial Firefly Tube Direct Box and a Radial Cherry Picker Studio Preamp Selector in his collection.

For patchbays, Fagan relies on Bittree. "I can't say enough good things about them; they always come through for me," he says. "They're the only company I trust; I would never skimp on the patchbay, and Bittree is the best."

Hook has already been quite busy in his Leopard's Nest; he cut his guitar parts for the last Five Finger Death Punch record, *Got Your Six* [Pros-



Jason Hook



Zack Fagan working in the Leopard's Nest.

pect Park, 2015] in his studio. "It was a little daunting at first because we had just finished building the studio, and then the next day we started the new record," Hook says. "So there wasn't a lot of time for me to tinker and experiment. I had to go right into work mode. And when the record was done, we went right into touring... that's why Zack is here now, to tweak things."

Both Hook and Fagan are pleased with the outcome of the studio. "A lot of people have a computer and some monitors in their room and say, 'come check out my studio.' That's not a studio," Fagan says. "We had some good geometry with this room already, and we just placed the proper treatment in the right spot. When you walk up the stairs, it

sounds kind of boom-y out there; but when you walk into the studio, you can tell immediately you're in a professional control room. When you're listening to tracks back in here, whether it's something you're working on or something that's already been done, it sounds like it's supposed to; it's accurate."

Fagan says the modern recording studio is not built for engineers as much anymore; it's built more for artists because, like Hook—who is currently in his studio working on the score to the movie *Hired Gun* (directed by Fran Strine)—they have their own home studios now. "The workflow for the artist is most important; you've got to set it up so it's easy for them," he says. "It's really important to be able to come in and sit down and get right to it, and I think we nailed that here." ■





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# Live



**DAVE KOZ**

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From left: Candy Dulfer, Bill Medley, Jonathan Butler, and Dave Koz perform at The Strathmore.

Photo: Mark R. Smith

## DAVE KOZ AT D.C.'S STRATHMORE

It's the Most Wonderful Time of the Year

By Mark R. Smith

**U**pon first glance, it's easy to see that what music connoisseurs expect upon entry is just what's delivered at The Music Center at Strathmore, the 10-year-old symphony hall that's located just north of Washington, D.C., in North Bethesda, Md.

If it's the holiday season at the Strathmore (as it's commonly known), that means that it's time for saxophonist Dave Koz & Friends to make an appearance, which he and his merry revelers did in early December. This year's ensemble included fellow sax star Candy Dulfer, guitarist Jonathan Butler and singer Bill Medley, the baritone half of the Righteous Brothers.

While Koz and his fellow celebrants treated the audience to about two hours of holiday standards that were mixed in with a few hits and surprises, the hired help behind the soundboard well knew that the enthusiastic fans aren't the only reason why the tour returns, year after year.

"[Members of] symphonies routinely say that [the Strathmore] rivals any facility in the world, including Carnegie Hall [in New York City] and the Kimmel Center for the Performing Arts [Philadelphia], for its acoustic and symphonic sound," says the Strathmore's lead audio technician, Caldwell Gray, who noted that the facility also serves as the second home of the venue's main partner, the Baltimore Symphony Orchestra. "We also work with

the National Philharmonic, and we routinely get plenty of the same comments."

Based on such recommendations, it's no surprise that the capabilities of the stage exceed what are normally found in such a setup. Mechanical engineer J.R. Clancy, of Syracuse, N.Y., designed the stage and built the guts of the variable acoustic system with a team led by architect Bill Rawn and acoustician Larry Kierkegaard, and Theater Projects of South Norwalk, Conn.

For instance, "There is fabric everywhere behind the walls that we deploy during pop shows," says Gray, adding that there are also "43 acoustic clouds above the stage, all independently controllable," as well as other built-in



Front-of-house engineer Melissa Britton (left) and the Strathmore's lead audio technician, Caldwell Gray, at the DiGiCo SD10 console.

reflectors above the ceiling in the grid.

The speakers in the hall are d&b audiotechnik with a Q rig, which he says always get high marks from the symphonies, as well as the many rock and pop acts that play at the Strathmore. "In my opinion, d&b is the best speaker made for professional sound, because it's so flat. It's incredibly natural sounding," says Gray. "Nine of 10 engineers that walk into the hall say, 'd&b? No problem.' And when they leave, they say how great it sounded."

That's critical in symphony halls, "because there is so much low-end reverb. The walls are built to resonate during Beethoven and Tchaikovsky, or similar bombast," he says, noting the challenge of presenting amplified music in any such hall. "Acts have to adjust their show to our space."

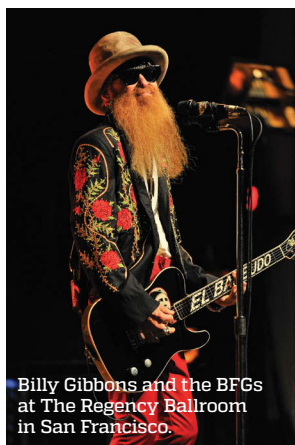
That was the case with Koz and company, said the group's front-of-house engineer, Melissa Britton, who relies on the DiGiCo SD10, with (mostly) Shure mics and ear monitors, for the band and artists, as well as Telefunken M80 vocal mics.

What's interesting about playing the Strathmore is that the d&b's "really work for that hall," says Britton. "We play a lot of similar halls, but the amplification in the others doesn't sound the same as it does in the Strathmore. [That's due to] the care that they took in picking the proper P.A. system and hanging it correctly for that venue. That really stands out for amplified music."

And that's not always the case. Britton says she told Jones before the show that she'd never question bringing in the group's P.A., "but we liked what the Strathmore had to offer.

"It's nice to use a P.A. that is already tuned and timed correctly. I didn't have to make any major changes," Britton says. "The room itself has a really nice reverb to it. I don't have to add much, because it's naturally there, due to the way it's built to respond to acoustic music. I find the more live the room is, the more the audience is into it; they feed off each other and when the room isn't acoustically dead."

Gray concurs: "Every artist that walks on our stage for the first time says it's awesome. That's as good as it gets." ■



Billy Gibbons and the BFGs at The Regency Ballroom in San Francisco.

## BILLY GIBBONS

### Touring Behind Debut Solo Project

In November 2015, ZZ Top guitarist/vocalist Billy Gibbons released his debut solo album, *Perfectamundo* (Concord Records), a project inspired by his early studies in Afro-Cuban music. *Perfectamundo* blends Afro-Cuban influences into a mix of blues, rock and jazz. For the album and subsequent tour, which continues into February, Gibbons formed a band called the BFGs; the touring lineup comprises Mike Flanigin (keyboards and bass), Martin "G.G." Guigui (keyboards), Alex "Guitarzza" Garza (percussion and guitar), Melanie DiLorenzo (drums) and SoZo Diamond (drums).

"Having such great musicians onstage is the best part of putting the mix together," says front-of-house engineer Jake Mann of Clair Global, who has toured with ZZ Top for 10 years, first as a P.A. tech and then monitor engineer. "I've seen Billy in the ZZ form for many years, so it was great to see him in a different light." Clair Global is supplying Gibbons' tour with a basic mic and stage-cabling package.

"Billy wants a raw, gritty, dirty, blues-sounding vocal that is heard, but not out front," Mann notes. "The [Telefunken] M80 has the best rejection and is very smooth in the low range. As we are on house gear each day, the chain is usually just a comp and away we go. The guitar is what's it's all about, so that sits toward the top, but not in front. We're using a Beyer M160 and it has been giving great results."

According to monitor engineer Marcel Fernandez: "We're using three stereo in-ear mixes for our two drummers and percussionist. For the two keyboard players we've been using a pair of Fostex 6301B [speakers]—they're so small that you can hide them in front of the Hammond lid. We also feed a bass amp from the console to reproduce some synth bass sounds from the backing tracks. For Billy we're using a pair of wedges downstage. Believe it or not, he likes the stage as quiet as possible so he can listen to the house mix and the audience." —Matt Gallagher



## L7

### Reunited in 2015

L7's original 1985 lineup—Donita Sparks (guitar/vocals), Suzi Gardner (guitar/vocals), Jennifer Finch (bass) and Dee Plakas (drums)—reunited for tours of Europe and the U.S. in the summer and fall of 2015. Tour manager and front-of-

house engineer Miles Wilson notes that this tour was light on production and that he was happy to see Avid SC48s in many venues. "It allows me to spend more time focusing on the sound of the room or the P.A. or the stage," he says. "But that being said, I still love walking into a venue that has a nice Midas H2000, H3000 or XL4."

Wilson builds L7's FOH mix using the drums and bass as the foundation. "I play with the highpass filters and phase switches a lot," he says. "You can manipulate the bottom end to control bass frequencies from room to room when using two kick drum mics, as well as bass DI and mic. Beyond that, the vocals should always be intelligible but not too loud. I always have my own SPL meter with me and I know from experience that 102 to 105 dB A-weighted is a good rocking show. I never push [the P.A.] past the point of having nice clarity. I tend not to do much processing with the guitars. I love the tones coming off the stage." —Matt Gallagher



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# All Access

Photos and Text  
By Steve Jennings



## THE WEEKND



Back in March, The Weeknd was another band on tour, doing festivals and one-offs. Then the band exploded, the Grammy nominations came in, and they're now touring with a full Clair Global rig, including, according to systems engineer Paul Jump, "the Clair Cohesion 12 System for the main hang. We have 16 cabinets per side covering the arenas. Along with the Cohesion 12 are six Clair CP218 subs hanging behind the Cohesion 12, as well as six CP218 per side on the ground. Covering the sides of the arena is the Clair I3 System. We are using six Cohesion 8 speakers for front fills. The Cohesion 12, the I3, and Cohesion 8 are powered by Lab.gruppen PLM 20k amplifiers and the CP218 are self-powered."



The Weeknd audio crew, from left: Michael Robertson, monitor tech; Paul Jump, systems engineer; Derek Brener, FOH Engineer; Andy Ebert, monitor engineer; Jon Barrows, P.A. tech; Ken Fiedler, P.A. tech.

"I opted to use an Avid Profile for the one-offs in the beginning of the year, as I knew that this desk would be the most widely available around the country and in-house at most festivals," says **FOH engineer Derek Brener**. "The mix became so dialed that, for tour, I just upgraded to a D-Show for more tangible control."

"The input list is 66 channels for drums, bass, guitar, keys, tracks, vocals and talk-backs. I primarily and sparingly use plug-ins from Waves, [Avid] VENUEPack 4, and a few that are factory-installed. I use SSL and CLA plugs for the band, the C6 for Abel, and the L2 for the L/R bus. For vocal effects, I use the Waves Doubler and Harmonizer, GTR for distortion, Moogerfooger analog delay for slap, H-Delay for dirty stereo delay, [Avid] Extra Long Delay for clean stereo delays, and [Avid] D-Verb for short and long verbs. I never get too crazy with plug-ins. I would sooner not put a plug-in on something if it already has the sound that I'm after."

"I carry two outboard units from one of my favorite companies: a Distressor for Abel's compressor, and a Fatso Jr. for drum compression. I love the character that EL [Empirical Labs] units bring to the mix...always have. The Distressor gives Abel transparent compression, brings a round warmth to his falsetto, and a salty saturation when he hits it hard. These units always make a mix sound 'tougher.'"

"The new Cohesion system is going to give other manufactures a run for their money. It's absolutely amazing. The CP218 subs yielded sub-notes in the music

tracks that I hadn't heard on any other system that I was on during festival, promo, and one-off runs. It's a beast."





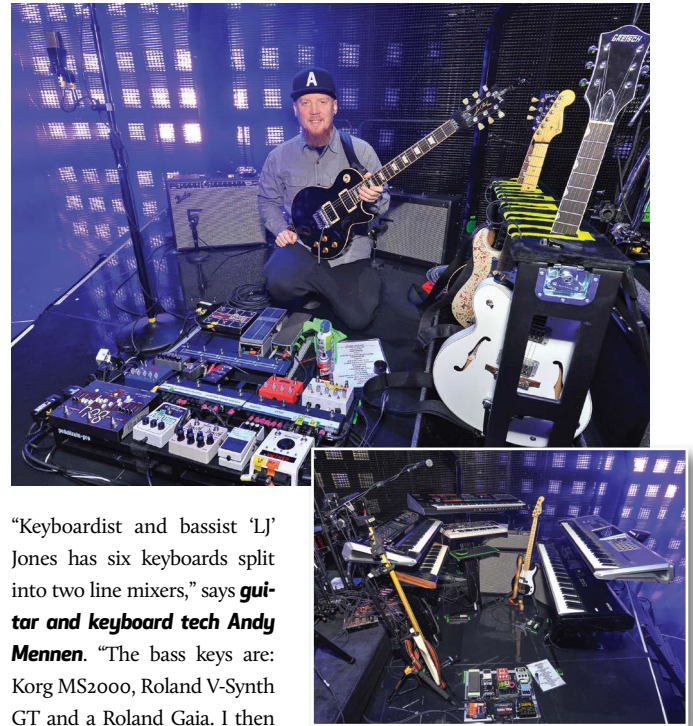
**Monitor engineer Andy Ebert** has been with The Weeknd on and off since the beginning and is “very happy that [Abel] is now getting the recognition he deserves. I’m mixing on the Avid Profile console, have been since it first came out. The surface’s layout works better for me than other digital consoles, and the plug-in integration is amazing.

“We are using 66 inputs on this tour,” Ebert continues. “I am using 12 IEM mixes, a drum sub and a few direct outs, running a total of 28 outputs. My standard plug-in rack contains: Smack compressor and Phoenix Dark Essence on kick drums, Bomb Factory BF76 and Phoenix Dark Essence on snares, and an SPL Transient Designer on each drum. The Phoenix makes the drums sound more analog. The SPL is the handiest tool to easily tighten up the sound of any drum—it allows you to add attack and sustain, or take it out. It is amazing! On bass I use a Fairchild 660 compressor and Digidesign Reel Tape Saturation. On Abel’s vocal I use a Rane Serato dynamic compressor in addition to the onboard channel compressor. I am using TC Electronic NonLin2 reverb on drums and the onboard ReVibe for vocals, guests and guest instruments.

“On this tour we switched to Shure PSM 1000 IEMs. They sound great, have a great stereo image and the RF is extremely stable. In the past it was not always easy to find frequencies that were free of occasional hisses—even though they appeared to be clean. The Shure makes this almost a non-issue. The PSM 1000 are much cleaner, which makes it faster to find working frequencies every day.



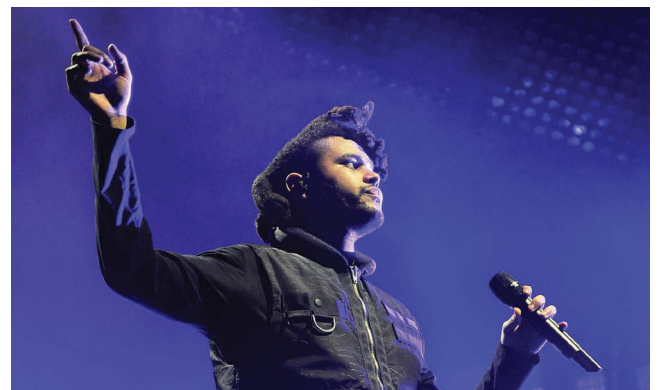
Drummer Ricky Lewis has a mix of Shure and Sennheiser mics, according to drum tech Terry Staley: Beta 91A (the one with an XLR out on the mic) and a Beta 52 on kick drum; SM57 for top and bottom on both snares; and Sennheiser e604 on three rack toms and two floor toms; KSM 32 for overheads; and KSM 137 on hi-hat and ride cymbal.



“Keyboardist and bassist ‘LJ’ Jones has six keyboards split into two line mixers,” says **guitar and keyboard tech Andy Mennen**. “The bass keys are: Korg MS2000, Roland V-Synth GT and a Roland Gaia. I then run a line out of the aux send

to the bass amp. The bass amp is a Fender super Bassman with a 4x10 and a 1x15. This amp choice was based on a few things, the most important of which being that it has two inputs—one for bass guitar and one for bass keys—and a lot of power. When you add in the 1x15 instead of a second 4x10, it handles the low bass key frequencies much better. The other keyboards are Korg Kronos, Roland Fantom G7 and the Roland Jupiter 80.”

Guitar player Patrick Greenaway has two Fender amps, a talkback mic, SM58, and two additional AKG C 414 mics placed lower on the stand. “We started using the Audio-Technica 2500 mic,” says monitor engineer Ebert, “one on the clean amp, one on the distorted amp. The mic has two capsules time-aligned built into one housing. The cable splits into two channels, one dynamic, one condenser. The combination of the two channels sounds great.”



“We have been using the Sennheiser SKM 5200-II handheld mic for a few years now,” monitor engineer Ebert says. “Abel loves the feel of it and how light it is. At the end of 2013 we switched from a Neumann capsule that picked up a lot of surrounding sounds to a Sennheiser MD-5235 capsule. It has a much tighter pattern and it is much more forgiving when Abel cups the capsule.”



# THE REVENANT

## A WILDERNESS DANCE OF MUSIC AND EFFECTS

By Jennifer Walden

**H**ugh Glass is a revenant, a ghost, but he is no benevolent revenant. He is a revenant of revenge. In director Alejandro González Iñárritu's film *The Revenant*, frontiersman Hugh Glass (played by Leonardo DiCaprio) seeks to avenge himself against the hunting party that left him for dead after a near-fatal bear attack. If revenge is best served cold, then it's order-up for Glass, who survives and treks through the brutal northwest winter to track down his betrayers.

Set in the remote American wilderness of the 1800s, the harsh environment acts as another adversary in the film. The sound of wind is used to help the audience feel winter's pervasive presence. Skywalker Sound's Randy Thom, a supervising sound editor/sound designer/re-recording mixer on *The Revenant*, says director Iñárritu prefers rough-sounding wind full of rumbles and even distortion. "It's that sound you hear when wind blows across your ears," Thom says. "We used a lot of that in addition to every type of whistling wind and moaning wind you can think of."

Custom-recordings of wind were captured at Point Reyes Peninsula near Skywalker Ranch in Marin County, Calif. "It's always windy there, and there are many different surfaces for the wind to blow over, like trees,

rocks, limbs, wires, and brush of all kinds," he continues. "You can get wind with lots of different tonalities."

Having tonal wind options was important as director Iñárritu often encouraged the post sound team to design elements that were musical. Additionally, the film's composers—Ryuichi Sakamoto, Carsten Nicolai (aka Alva Noto) and Bryce Dessner used musical elements that could easily be mistaken for sound design.

"One of the interesting things about this film is that sometimes you can't tell what is music and what is sound design," notes Thom. "I love that, when you can't necessarily tell which department a particular sound came from. As long as it does the storytelling that it needs to do, that is all that is really important."

While *The Revenant* was still being shot, co-supervising sound editor/sound designer Martin Hernández started exploring music and sound options with director Iñárritu for several sequences. "We did these little sound exercises, what we called haikus—a small poem or short idea that makes sense on its own. These haikus used pieces of music I pulled from albums, and sound elements, and isolated lines of dialog here and there.



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The core *Revenant* sound crew, on the Hitchcock Stage at Universal Pictures, from left: Joe Debeasi, music editor; Jon Taylor, re-recording mixer; Randy Thom, supervising sound editor/re-recording mixer/sound designer; Martin Hernandez, supervising sound editor/sound designer; Frank Montaña, re-recording mixer; John Title, sound designer.

I was making these haikus while thinking about the film; they weren't done to picture," Hernández explains.

Iñárritu and film editor Stephen Mirrione started cutting the sound

haikus into scenes as they edited. After a few months, they found many of the haikus used music by Sakamoto. "It was a natural process to find out that he was the best candidate to be the composer for the film because we were already tied to his influence and his music," says Hernández. "Ryuichi [Sakamoto] heard all the sound exercises we did before he started composing for the film, along with Carsten Nicolai. These haikus influenced the score later on." According to Hernández, two of those early haikus, which play in crucial scenes near the end of the film, made it to the final mix exactly as he built them. "That tells you how much the music ideas can stick and be a part of the scene for Alejandro [Iñárritu]. He heard the scenes with that music and it stayed there until the very end."

Cutting music in conjunction with sound design is an approach that started for Hernández and Iñárritu last year on *Birdman*, where Hernández built tracks by cutting takes of Antonio Sanchez playing the drums. "We discovered that a good amount of sound design can come just by cutting the music, and treating and changing the music to fit a scene," says Hernández. "Alejandro is driven by pieces of sound, and pieces of dialog, and pieces of music. The storytelling aspects

*Continued on p. 63*











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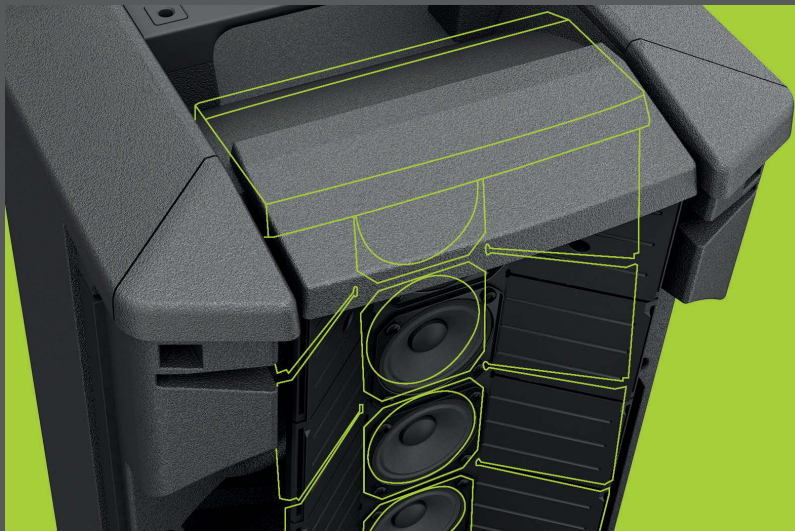
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Will Smith stars in Columbia Pictures' *Concussion*.

# CONCUSSION

## EMOTIONAL DRAMA THROUGH SUBTLE SOUND, MUSIC

By Jennifer Walden

Director Peter Landesman's *Concussion*, distributed by Columbia Pictures, is a sports drama starring Will Smith as Nigerian-born forensic neuropathologist Dr. Bennet Omalu, whose research on concussion-caused brain damage led to the discovery of CTE, or chronic traumatic encephalopathy, a progressive and degenerative disease found in people with a history of repetitive brain trauma. Like NFL football players. That's the main story line.

Behind the scenes, and for the past decade, the National Football League has been challenging the studies on CTE, and, since last April when first reported, challenging the content of the film. The controversy will no doubt fuel the box office for *Concussion*, when it opens December 25, just in time for the playoffs.

But there's an even further-behind-the-scenes story involving the film's sound team, which includes, as re-recording mixers, Michael and Christian P. Minkler; mixing is in their blood. Michael and Christian, father and son, are part of the Minkler mixing legacy that includes re-recording mixers Don Minkler (Michael's father), known for *Easy Rider*; Bob Minkler (Michael's uncle) known for *Star Wars: Episode IV—A New Hope*; and Lee Minkler (Michael's other uncle), known for *TRON*. Bob, Lee, and Michael—all members of the *TRON* sound mixing team—were nominated for an Oscar together for Best Sound on that film.

Michael and Christian, both now a part of Sony Pictures Studios, have teamed up to mix three top-billing box-office films in 2015: *Insurgent*, *Concussion* and *The Hateful Eight*. While none were their first time sharing the dub stage—back in 1994 they mixed *Natural Born Killers* to-

gether with re-recording mixer Tom Fleischman—2015 was the first time they mixed films together on more equal ground. *Natural Born Killers* was Christian's first credit as re-recording mixer while Michael had more than two decades of mixing experience at that point.

"Almost 20 years [ago] we worked together, but felt maybe it wasn't really a good thing to do so," admits Michael, who has won three Oscars for Best Sound. Now, Christian's re-recording career spans over two decades, and includes films like *Babel*, *Gone Baby Gone* and *August: Osage County*. "I have heard people say, 'Chris is great; we had a great experience,'" says Michael. "Now, I get to seriously enjoy that on a daily basis. He is very talented and very sweet to work with. I love working with Chris and I really enjoy how his talents have come such a long way."

Christian says his father has been his mentor almost his whole life and that his father's mixing style is the basis of his own. So when they teamed up again on the mix stage for *Concussion*, Christian says, "It was very familiar, which made it very comfortable. [Michael's] style of mixing really fit into the workflow and the sound that I am accustomed to creating. This was probably the best professional year I ever had, working alongside my father, who I consider the best mixing talent in the world."

*Concussion's* supervising sound editor Dave McMoyler, at Formosa Group in West Hollywood, says mixing with the Minklers was one of the most pleasurable experiences he's had: "There almost seems to be an unspoken connection between them, almost intuitive. I don't know if it's because genetically they are from the same source material but they just work seamlessly together. When Mike needs some help, it's almost like





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he doesn't have to ask because Chris is already on it."

As with his debut film *Parkland* (2013), Landesman chose composer James Newton Howard to write the score. Michael, who worked with Landesman and Howard on *Parkland*, as well as handled the theatrical mix of Howard's score on several prior releases, says the score on *Concussion* was the best he's ever written. "The execution and emotion that it carries is incredible. I hope he gets a lot of attention for his work on this film," Michael says.

On *Concussion*, McMoyler mainly delivers reality-based sound design, particularly of the Pittsburgh cityscape, and subtle sound effects to support the drama. "Sound editors are like the Rodney Dangerfield of the industry, in that if we are really doing our job right, you won't know that we have done anything. This film, probably more so than others, was about subtlety, but it was also about strongly supporting the emotional importance of each scene," says McMoyler, who collaborated with Landesman and film editor William Goldenberg on the direction for sound.

While overall realism reigned, there were a few artistic instances where sound stretched into subjective territory. Christian, who handled the sound effects/Foley/backgrounds in the mix, notes that one of the trickiest sections to mix was when the characters who are suffering from CTE go into their dementia moments. "None of us have experienced that. We created what this condition would feel like, not having any reference at all," says Christian. "We kept asking ourselves, 'Is this correct? Is this working? Are we relaying to the audience what these people are suffering?' That was probably the biggest challenge, and I think we pulled it off nicely."

In another sequence that stood out for Christian, football player Mike Webster (played by David Morse) is losing his mind. Scenes of the player destroying his house and fighting with his family are intercut with scenes of a football game. "It ends with the real image of how he died, and to me, when I first saw that, it kind of really shook me up," says Christian.



Michael Minkler



Christian Minkler



Dave McMoyler

Michael's favorite scene to mix was a five-minute montage of Dr. Omalu piecing together the connection of brain trauma and football. "It's wonderfully put together by Billy [Goldenberg] and Peter [Landesman]. This is an extremely emotional film, and that's the scene that gets me, other than the last scene, which I have cried all the twenty-some times I've seen it," Michael says.

Michael and Christian mixed *Concussion* at Sony Pictures Studios in The Burt Lancaster Theater on a Harrison MPC4-D Digital Console. "Sony has been deeply embedded in the Harrison console world since 1995 or 1996," says Michael. "We wanted to do a big sound, and the engineers [at Sony] were great in adapting the consoles for what Chris and I wanted to do."

Specifically, Christian explains, they wanted to stay within Pro Tools, and so Sony adapted to that workflow. "We wanted to use the Avid S6 console, but it wasn't ready at the time so I chose to use the Avid Artist mix to carry along with me," explains Christian. "Dave [McMoyler], his editing team, and I were able to, from beginning to end, stay within Pro Tools. Then, during the final, I was utilizing the Harrison console."

In the age of Dolby Atmos, DTS:X, Barco Auro-3D and IMAX 12.0, it seems that nearly every film's mix is being pushed into large-scale immersive formats, but that's not the case with *Concussion*. McMoyler notes they chose to mix the film in 5.1. "We tried to find what is appropriate and this is why I love working with Mike and Chris. They don't overplay their hand."

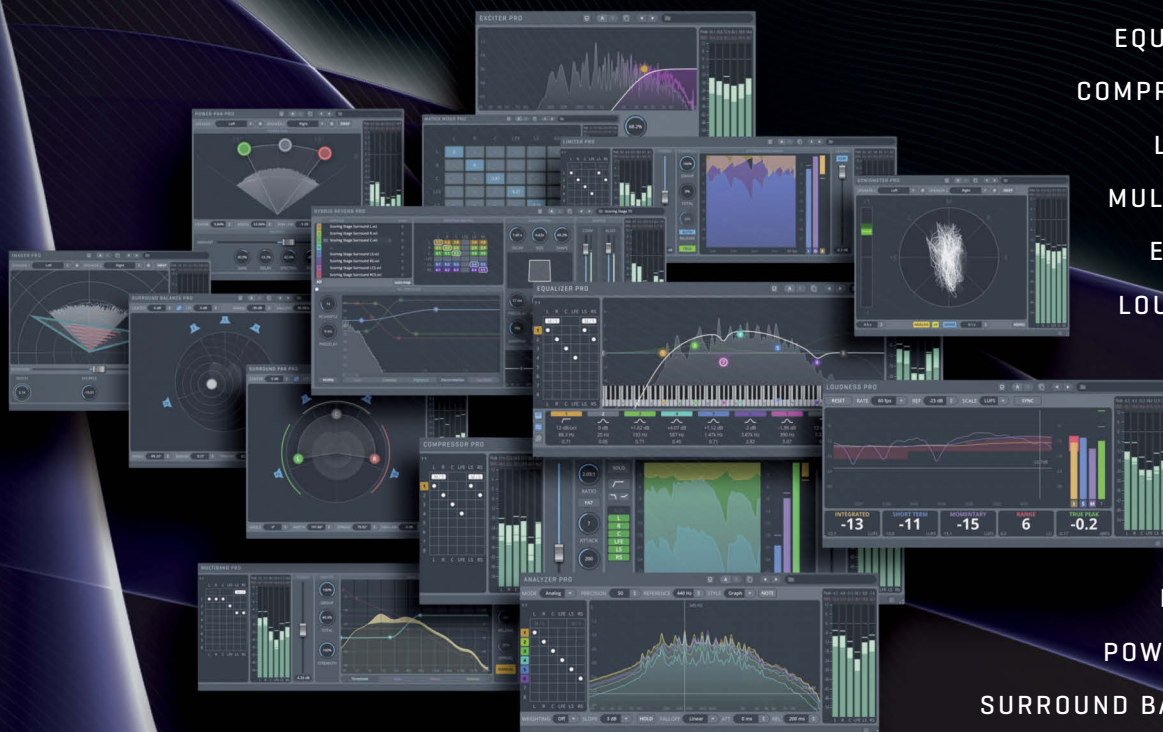
In utilizing the 5.1 surround field on the effects side of the board, Christian was able to pull the backgrounds, walla, and specific featured effects into the theater. For example, during the sequence where the film takes the audience inside the brain as it is being shattered, Christian explains, "We go from a small, realistic portrayal, and as the scene builds, the soundtrack builds along with it. Eventually the room is shaking, and the surrounds are pumping to the visuals. We were able to get the same feeling in 5.1 as we would have with a 7.1 mix." ■



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# The Heavens for Rent

## EastWest Composer Cloud in Use...By the Month

BY MARKKUS ROVITO

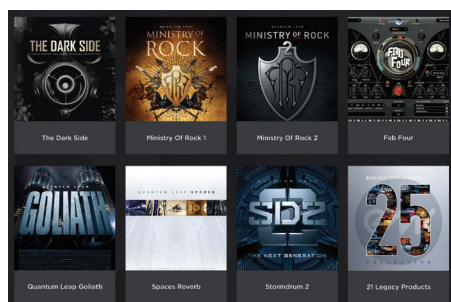
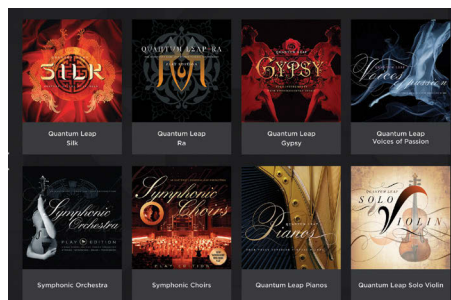
Faraday Future, the latest in re-envisioned American car companies, is talking about launching in 2017 with a subscription service. Just what you needed, right? A tidy charge for advanced high-tech electric vehicles that you forget is added to your credit card balance every month. However, the point is that a single vehicle doesn't fit every need. And why should you own three cars when you could subscribe to Faraday Future and take an SUV for long weekends to the mountains, a compact car for trips to the store and the sports car for pretending you're someone you're not?

The same concept loosely applies to some of the software subscriptions that have trickled out and that audio pros can no longer ignore. In 2011, Adobe first took the plunge with making all of its products available on a subscription plan called Creative Cloud. Reception was chilly at first, and while complaints about pricing still persist, the plan persists, as well. The fundamental advantages of Creative Cloud make sense, price notwithstanding: You get access to a single program or all of Adobe's software when you need it. You download only the programs you need and can suspend the subscription if you want to and pick it back up later. Cakewalk introduced a subscription plan, and Avid followed suit with Pro Tools and other software. The subscription model helps users by lowering the cost of entry to expensive industry-standard programs and helps the developer with steady, residual income rather than erratic cash flows that center on releases and updates.

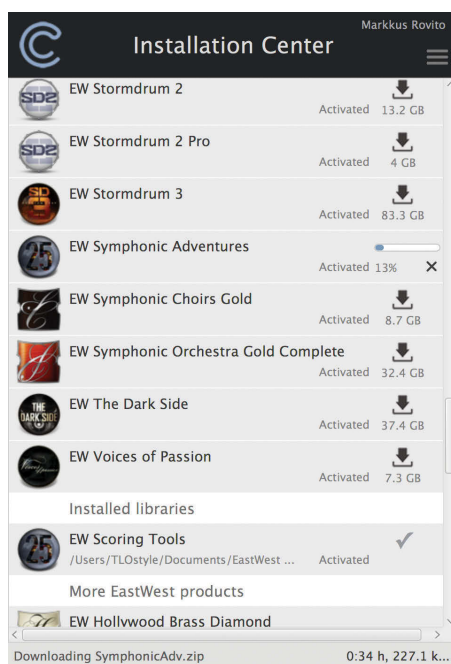
It's now been almost a year since EastWest launched Composer Cloud in April 2015, and it appears that the plan will stick. As the company that basically invented sample libraries in the late '80s, EastWest has since amassed perhaps the most comprehensive and voluminous body of pro-quality sample-based instruments under one roof. If you had to pick someone to pioneer a subscription-based selection of virtual instruments, it would probably be EastWest.

### ALL FOR ONE

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Pictured are some examples of Composer Cloud products.



Composer Cloud Installation Center

instruments and percussion, symphonic choirs and the like, but also include massive drum collections, ethnic instruments, sound design tools and wide-ranging instruments for different styles or rock and electronic music—more than 9,000 meticulously sampled instruments. A premium Composer Cloud Plus subscription adds another 6,000 or so instruments recorded with various selectable mic positions for a yearly charge of \$599. Students can access any seven titles at a time for \$14.99 a month.

Producer and founder of EastWest Doug Rogers told us that offering the entire catalog as a subscription changes the game as fundamentally as when EastWest released the first commercial drum sample library in the '80s. "If you can't afford the best instruments, your composition will never sound as good as those from professional composers, and that's a frustrating experience," Rogers told us. Composer Cloud levels the playing field substantially, giving students or beginners the same sounds professionals use for an affordable, pay-as-you-go price. Like Adobe's plan, which EastWest studied, Composer Cloud lets you pause the subscription in monthly increments if you desire.

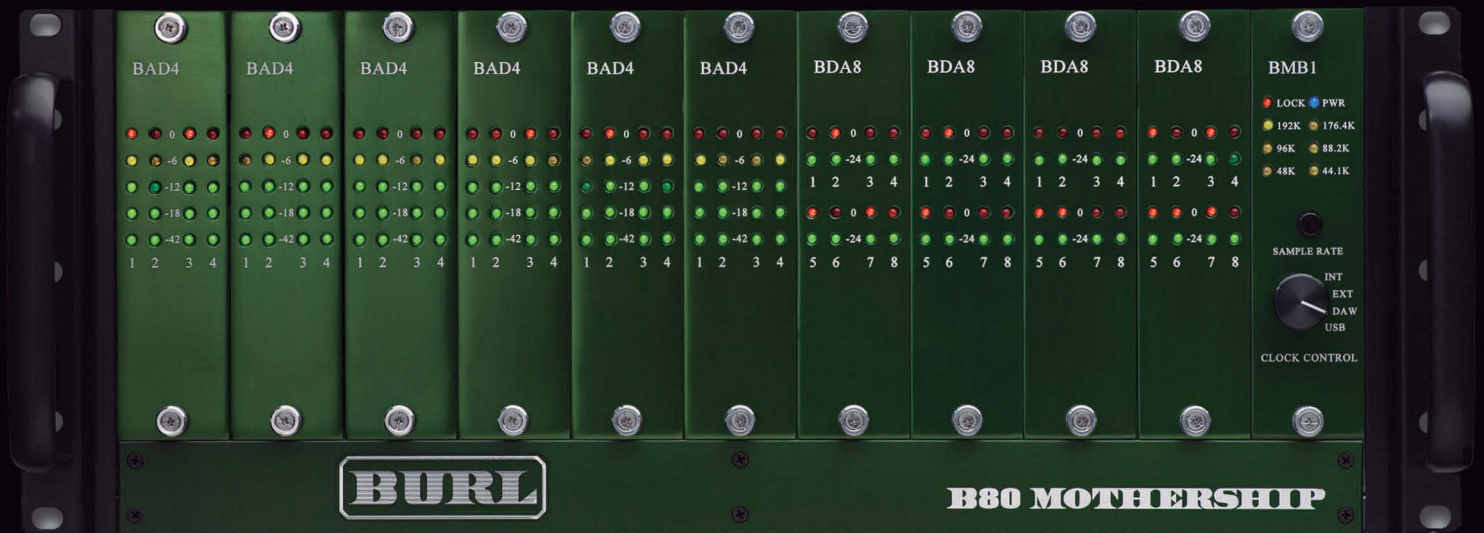
That broad access to sounds also helps out professional composers who've already racked up plenty of credits and awards. Chance Thomas has worked on projects that have won both an Oscar and an Emmy. He's carried the legacies of Hollywood blockbuster scores into the game world by doing game music for *Lord of the Rings Online* and James Cameron's *Avatar*, as well as scored major original games like *Heroes of Might and Magic* and *DOTA 2*.

"Composer Cloud instantly gives me options I didn't have before—options I may not have even been looking for," Thomas told us. "It comes with so many new sounds at my fingertips, the door to experimentation is always open."

Currently, Thomas is working on a documentary series about Detroit, where he had to re-create a little Motown magic. Composer Cloud let him fill in the R&B sounds, guitars, basses and synths that he didn't already have to



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**Owner of House of Blues Studios**



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**Robert Carranza**  
**Engineer**  
**Credits- Jack Johnson, The Mars Volta, Los Lobos**



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complete the task. "Composer Cloud is broad enough to take me from the '60s to current sounds," he said. "I've been pulling from 56 Strat, Drum 'n' Bass, Funky Loops, Fab Four, Phat and Phunky, Joey Kramer Drums, Smoov Grooves, and Ministry of Rock 1 and 2."

Thomas not only has a foot in the Hollywood establishment, but he's also an educator serving on the board at Full Sail and BYU and has written the book *Composing Music for Games*. He's seen Composer Cloud take hold in both the high-end and student market. "A big augmented reality company has their entire team of audio A-listers signed up to Composer Cloud, and they love it," he said. "Each has a subscription authorization on their machine, and the audio artists share the library between them for easy, seamless collaboration." Likewise, Thomas sees Composer Cloud as supremely effective in a university music program. "Giving all the students access to these sounds would definitely make it easier to collaborate with each other, and for the professors to make tweaks to the students' tracks. Sure wish I'd had that when I was in music school!"

#### NO RISK, NO REWARD

In my hands-on trial with Composer Cloud, there was a moment of mouth-watering giddiness when it hit home that all of EastWest's



Chance Thomas

sounds—nearly 1TB worth of them—were just sitting there on the screen waiting to be downloaded and used. Such a thing was unfathomable to anyone on a limited budget before Composer Cloud. This window to the musical gods was the EW Installation Center software, a simple utility that shows you which libraries are installed and lets you choose the location of additional libraries to install.

When you have a Composer Cloud license, you just need to install this software, install the Play instrument engine software, download instrument titles and then use them as you normally would, either in standalone mode or as plug-ins within your DAW. You don't need to register all the individual titles separately, and you can re-install titles as needed.

It all looks simple, and is simple to use, but creating it was anything but simple for EastWest. When the company started discussing the concept following Adobe's Creative Cloud in 2011, there was no existing system to handle the huge data collections in EastWest's library, so the company had to code it all from scratch.

"It was a monumental undertaking with a lot at stake," Rogers said. "We knew we couldn't afford any mistakes. When you make a switch that big, you want to deliver a complete, easy-to-use system to be sure your

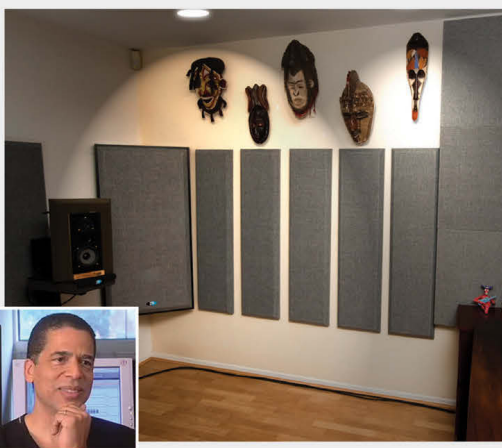
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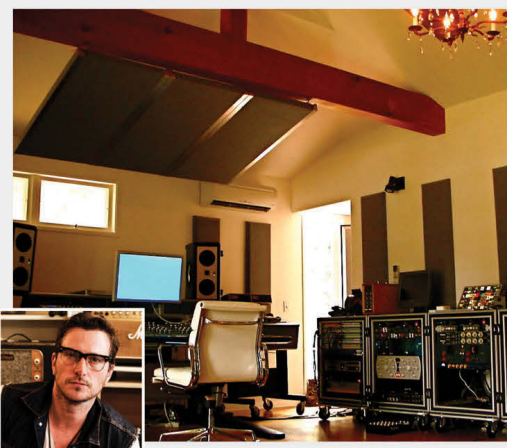
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~ **Butch Walker**

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

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



customers have a positive experience. It's a big risk financially, but we are confident that it's the right move."

Composer Cloud got off to a tenuous start right off the bat, when about a month after the launch, EastWest lowered the price from \$49.99 to \$29.99, a hefty 40 percent drop in price. That's a lot of money off the top for EastWest, but psychologically, it's a huge difference for the customer between \$30 and \$50 a month, or between \$360 a year and \$600 a year. With the new price, they seem to have found the sweet spot, where if you're a serious composer who wants these sounds, it almost seems stupid to not get Composer Cloud.

Another great benefit to Composer Cloud includes first access to new EastWest products. There have been five new products since Composer Cloud debuted, so as Rogers told us, the monthly price stays the same for more products, so the value to you increases over time.

So is Composer Cloud actually a bad deal for EastWest? With the price drop and access to all the new products as they come out, is there less incentive for EastWest to continue to put out new and better products? Rogers said no.

"Subscriptions provide predictable and regular revenue for future development and timely launches of new products," Rogers said. "Compos-



Doug Rogers

er Cloud allows us to plan ahead and embark on even bigger projects, and our products have always been created based on the needs of top composers, either because nothing existed, or because we could make much better instruments than those in the marketplace."

However, the big gamble—and potentially the big payoff—probably comes from new EastWest customers. These are the aspiring or small-time composers, the bedroom or project studio hip-hop and electronic producers

who look at something like the EastWest Hollywood Orchestra bundle for \$700 on sale and say, "I really want those sounds, but...not today." With Composer Cloud, they can get all those sounds and everything else for \$30...today. They can also pause the subscription after their project's finished and start it back up later. That all makes it seem as if EastWest is in the Mafia; it's an offer you can't refuse.

If that's not enough though, EastWest can fall back on your ego. That's right, your ego will force you to buy Composer Cloud if you try the free one-month trial. For example, my favorite orchestral piece written with Propellerhead Reason's Orkester sound bank, was—I thought—pretty good. But once I took that MIDI information and substituted sounds from EastWest's Hollywood Brass, Hollywood Strings, Solo Violin, Symphonic Choirs and others, now I know that I'm a friggin' genius. ■

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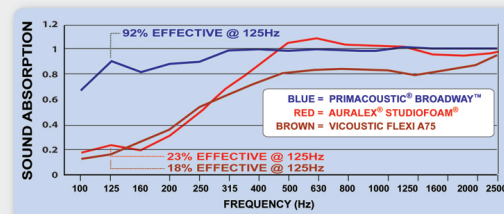
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# STRENGTH IN NUMBERS

## Plugin Alliance Creates Synergies for Boutique Software Developers

BY DAN DALEY

If you've been in a music store lately or visited a NAMM Show floor in recent years, you've likely noticed an explosion in the number of stomp boxes. Many of them are from big manufacturers but even more are from hordes of boutique makers working out of their garages and spare bedrooms.

Matt Ward finds that to be an apt analogy for what he faces as CEO of the Plugin Alliance. He sees that entity's mission as helping its baker's dozen of affiliated plug-in developers—including Accusonus, Brainworx, Chandler Ltd., elysia and SPL, from countries including the U.S., UK, Germany, Sweden, Greece and Finland—to find their way through what has become a global thicket of brands from developers large and small.

"There are some real diamonds out there," Ward says, citing Unfiltered Audio, whose Sandman delay and G8 dynamic gate plug-ins were developed by a trio of Ph.D.s who began developing plug-ins while still in their college dorm rooms at UC Santa Barbara. "They personify a lot of our developers: They have really innovative designs, but lacked experience in marketing and distribution. That's where the Plugin Alliance comes in—they're the kind of boutique that we've presented to a far larger user base than they could have developed on their own."

When Ward says "we" he's also referring to Dirk Ulrich, the founder of both the Plugin Alliance and Brainworx, a plug-in developer based in Leverkusen, Germany, a mid-sized city halfway between Dusseldorf and Cologne. Ulrich was working from his own small recording studio there, producing local and international bands, as well as ring-tones and radio commercials, when he branched out in 1999 to develop what eventually would become the bx\_digital EQ plug-in, aimed at equalizing mid-side signals, under his newly established Brainworx brand. A meeting with Avid at the 2005 NAMM Show in Anaheim resulted in the pro-audio software giant including that plug-in in one of its Pro Tools bundles and Ulrich seeing his first substantial check from software development. He then hired his first coder that same year for Brainworx (which still has the lion's share of titles under the Alliance's umbrella), as well as for early partners SPL and Vertigo. That nexus became the nut for the Plugin Alliance.

"I had the idea to host a number of plug-in developers under one virtual umbrella, as a cooperative of several companies," Ulrich says. "Brainworx would be the leading tech company, but everyone is treated equally."

What they're treated to is an expanding range of marketing, promotion and distribution services. Initially, that was limited mostly to word of mouth driving potential customers to the Website to learn about plug-ins from the four earliest sign-on affiliates. Those numbers grew steadily but accelerated in 2014 with the hiring of Ward as CEO



of the Alliance. Ward's background made him an ideal executive candidate. Prior to a decade-long executive tenure at Universal Audio, he had worked in product management for other professional audio and music companies, including Studer Revox, Otari and E-mu Systems, as well as doing some strategic consulting to Manley Labs and PreSonus.

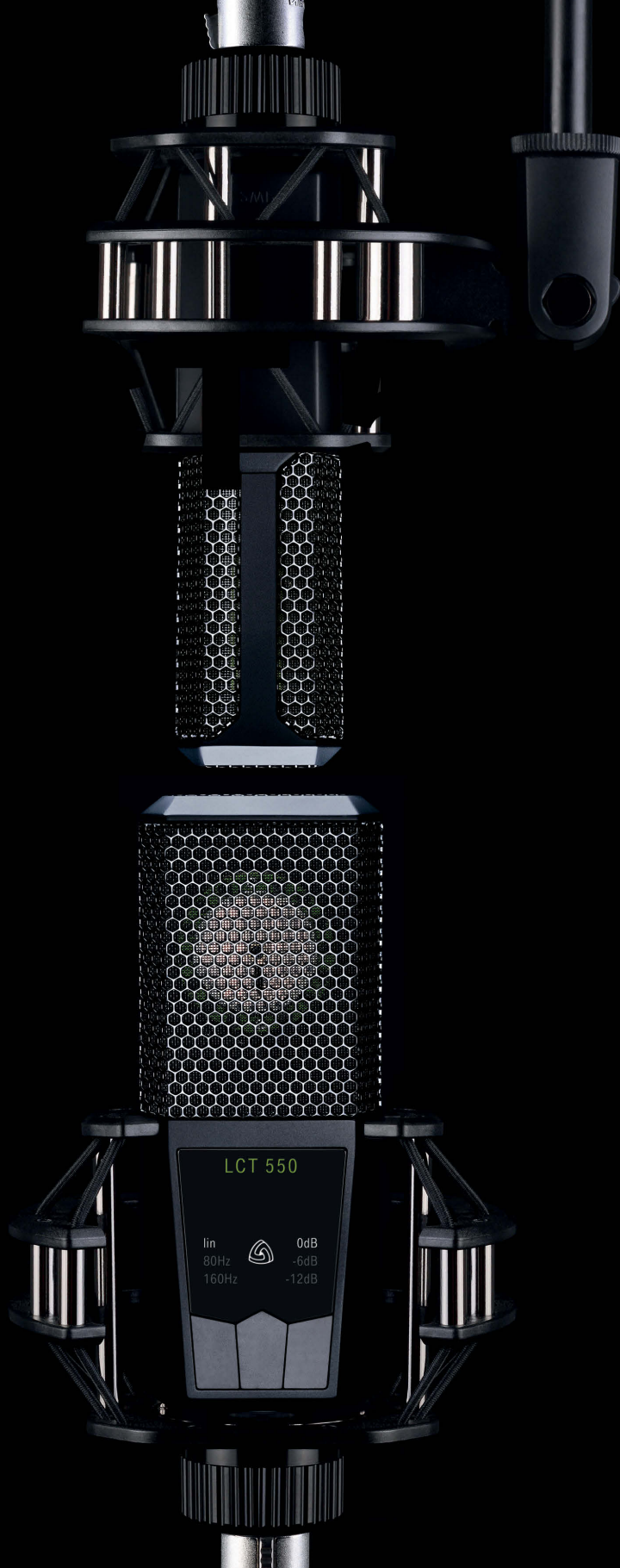
"This year was kind of our coming out," Ward says. "We made the investment in more traditional strategies for marketing and advertising, hired a PR firm, put out press releases."

The goal was still the same, to drive more people to the Website, but it was also to improve the customer experience there. Visitors can test drive plug-ins under a 14-day free period authorization; they can also create custom bundles from the current portfolio of 62 plug-ins across all 13 brands, and take advantage of incrementally increasing discounts of up to 50 percent off with a bundle of eight plug-ins. There are regular promotions, like the company's November "Every Friday is Black Friday," which entices buyers with a different \$9 plug-in each week. "The goal is to make it super-easy to try and to buy," says Ward.

### THE ARRANGEMENT

The Plugin Alliance has three types of partner developers. Several companies, like Brainworx and Lindell Audio, develop their own software and use the Alliance mainly for its authorization, marketing and distribution services. A second category uses Brainworx's engineers as a digital OEM resource to develop plug-ins that are modeled after hardware units of analog audio partner companies; these plug-ins are also marketed under the brand names of the original hardware designers, including SPL and Millennia. A third cohort, which includes Nov-





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Matt Ward, left, CEO of Plugin Alliance, with Dirk Ulrich, founder of Brainworx and Plugin Alliance.

eltech and Pro Audio DSP, have developed technology in just one plug-in format or in outdated formats, which are integrated the into the Brainworx “framework”—a catch-all term that Ulrich jokes is the company’s “F-word”—a software platform developed by Brainworx that can adapt plug-ins to any major host platform. The framework is needed to meet the Alliance’s key requirements: that plug-in products sold through the Website be compatible with AU, VST and AAX native hosts; that they support Mac OS X 10.6 through OSX 10.10; and that they support DSP platforms, including UAD-2, AAX DSP and Waves SoundGrid.

“In addition to this, they have to go through our test program, which is often far more extensive than what they’ve done previously,” Ward explains. “This consists of completing a large test grid with many different DAWs, going through a very large list of functions. Once the test grid is complete, we

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## Members Speak

Cliff Maag, founder of Maag Audio in Provo, Utah, was connected with Ulrich in 2011 when producer/engineer Dave Reitzas (Barbra Streisand, Josh Groban, Michel Bolton), a fan of Maag’s hardware EQ designs, suggested that Brainworx turn his EQ4 500 Series into a plug-in. Maag described a back-and-forth process of listening to Brainworx coders’ modeling efforts, making tweaks, and finally arriving at what Maag says was a perfect virtual version of his hardware. Maag also says that, while hardware sales continue to do well and that the high end of the market will continue to show demand for certain pieces of hardware, such as finishing EQs and preamps, the digitization of them into plug-ins extends his brand into a broader market.

“Their social-media outreach was monstrous for us,” he says. “And they’re great people to work with. I trust them.” A compressor product will likely join the current EQ4 and EQ2 hardware and plug-in lines next year, he says.

Joel Silverman, managing director at Millennia Music & Media Systems, was equally effusive, calling the arrangement, “A fantastic deal for us. We’re a hardware manufacturer—we don’t have a software division that can churn out plug-in products.”

Millennia has had two of its processors, the NSEQ-2 equalizer and the TCL-2 comp/limiter, modeled and digitized as plug-ins. Their hardware versions cost \$4,600 and \$3,590, respectively, while their plug-in versions retail for \$299 each. Silverman says the lower-cost digital versions don’t impact the hardware sales, which he says was a concern initially when they began working with Brainworx two years ago.

“It’s never going to be exactly, exactly the same as the hardware, and there are people who will want that and will pay for it,” he says. “There are people who will buy the plug-in and it might make them curious about our mic pre’s, which is what we’re mostly known for.”



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put partner plug-ins through a complete beta cycle with our beta group, which includes a wide variety of users with different configurations and application focus, such as mixing, mastering, post and so on.”

The economics of the Plugin Alliance are straightforward, with the Alliance taking what Ward refers to as a distribution fee that is a percentage of the overall revenue, a number that varies based on a number of factors. “The amount of development we’re required to do will have an impact on the distribution fee,” he explains. “So on the one end, true third-party developers with fully completed plug-ins receive the largest percentage of the revenue; products where we essentially just license the trademarks and we take on 100 percent of the development receive the lowest percentage.”

The Plugin Alliance offers some collective heft to a group of

smaller brands, but they don’t look at themselves as a group of Davids sparring with Goliaths. Going back to the stomp box analogy, Ward joked that if that were the case, “[Roland’s] Boss would be the equivalent of Waves.” However, Waves is actually a client of the Alliance’s, with Brainworx and other members developing and adapting plug-ins for Waves’ SoundGrid venture with DiGiCo. They also work with Avid in support of its 64-bit AAX DSP for the Venue console. In the ephemeral ecosphere of plug-ins, competitors can also be collaborators, an effect that Ward calls “co-op-etition.” “We’re definitely agnostic when it comes to formats and platforms,” he says. “We’ll work with anyone.”

But Ward makes clear that a company like Waves and the Alliance approach the market very differently. “Waves is very dependent upon the [retail] channel, selling through a dealer network,” he says. “It requires sales reps calling on dealers and doing trainings. That’s fine for them and for dealers who can also sell someone a microphone along with a plug-in. But we feel that our model is a better one for our customers. It’s the old world versus the new. There’s no question that software sales are headed into the B2C direction. It just works better for customers.”

#### THE FUTURE

The Plugin Alliance intends to get bigger through more affiliations—it has grown to 13 from eight since Ward arrived in January 2014. But Ward is not looking for rapid expansion. “We do try to recruit, at trade shows, for instance, but we’re trying not to bite off more pieces than we can chew,” he says. In addition to marketing, distribution and authorization services, Ward says they’re also responsible for support services such as creating user manuals and online video tutorials for members, and translations into English for European partners. They also have to maintain compatibility with platforms and formats that are in decline or have been replaced, to maximize the lifespan of members’ products.

“We constantly have to look back in time to see how long we’ll need to support Windows and OS X versions, because each one is a whole page in our test grid,” says Ward. “We were among the last to stay with TDM and RTAS, which Avid began replacing years ago.” But that kind of “heavy lifting,” as he calls it, would be even more burdensome for each brand to handle on its own.

As with smartphone apps, the universe of audio plug-ins would be familiar to astronomer Edwin Hubble: it’s going to keep expanding. Ward sees the Plugin Alliance building a curated galaxy within it, one that he hopes will expand yet remain coherent for consumers and manageable for its members. ■

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# GUITAR PEDALS FOR RECORDING

NEW FEATURES AND ORIGINAL EFFECTS AT HOME IN THE STUDIO

BY KEVIN BECKA



Guitar effects pedals used as professional studio tools? Yes, of course! While it is nothing new, the urge for music creators and instrumentalists to put their personal sonic stamp on their projects has driven the boutique pedal market to new highs. According to the Lip-pin Group, over the last decade the retail value of the effects pedal category has increased more than 45 percent, with a 13.7-percent gain in 2014 alone. For engineers, using guitar pedals is an affordable way to bring new flavors into tracking, overdub and mix applications. Pedal manufacturers have helped to make this more feasible by expanding lines to include some of the same features, algorithms, transistors, tubes, transformers, and pro I/O found in more expensive rack gear.

For example, Chandler Limited's Germanium Drive Distortion (\$335) and Little Devil Colored Boost (\$335) pedals offer some of the same technology as the company's 500 Series Little Devil Preamp (\$899) and Germanium Preamp (\$955). Radial Engineering's Plexitube

pedal is a 2-channel tube distortion unit that uses a 12AX7 tube along with a multi-stage solid-state drive circuit. Origin Effects' pedals include high-end features such as balanced line/DI outputs, 1176 compressor modeling, and the option of adding Lundahl transformers. Other innovative features that take the common stomp box above and beyond includes Neunaber's Pedal Customizer software that allows you to morph your Neunaber Stereo Pedal into any available effect in their line, making the jump between effects very affordable.

To make the jump from a balanced +4dB signal to an unbalanced instrument-level stomp pedal and back again you'll need an interface. Porting options include Radial Engineering's EXTC or EXTC-SA with Send and Receive level control plus single- or dual-channel loop options, respectively. Pigtronix's Keymaster offers two pedal loops with a crossfader, while the Meris 440 500 Series preamp adds an unbalanced, 1/4-inch effects loop. Another interface option is LittleLabs PCP, which is a 1-in, 3-out guitar splitter.

So who uses pedals in their workflow? Engineer Ross Hogarth (Van Halen, Keb' Mo') for one. "I am and will always be a big fan of stomp boxes," says Hogarth. "As a guitar player I have been using them all my life and find that the use of a stomp box can be way more intuitive than a plug-in." Hogarth likes the unique flavor that pedals bring to a production. "Some guitar pedals are unique, they will never be made into plug-ins," he adds. "When you use them as an effect, you are using something that is not a widely used and known plug-in effect with a named preset." Hogarth uses the LittleLabs PCP mentioned above, which let's him re-amp, or connect up to three pedals at a time when he's mixing in Pro Tools.

Our pedal roundup includes more than 25 manufacturers with our picks for two of their top pedals. Pedal effects include Drive, Distortion, Fuzz, Delay, Reverb, Pitch Shift, Chorus, Vibrato, Tremolo and more. You can easily shop by using the handy table, which includes our picks, prices and if you're viewing *Mix* in digital form, a hyperlink to the company's Website.



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<b>Catalinbread</b>	Talisman Plate Reverb (\$209.99); Belle Epoch Tape Echo (\$199.99)
<b>Earthquaker Devices</b>	Hoof Germanium/Silicon Fuzz (\$165); Rainbow Pitch Effects (\$225)
<b>Lotus</b>	Snowjob Dual Mode Underdrive (\$149); THD+N Lo-fi Fuzz (\$139)
<b>Fulltone</b>	Plimsoul Hi-gain Distortion/Overdrive (\$144); OCD Overdrive (\$128)
<b>Boss</b>	DD-500 Delay (\$299); RV-6 Reverb (\$149)
<b>Radial Engineering</b>	Plexitube 12AX7 Tube Distortion (\$299); Vienna Dual Mode Analog Chorus (\$159)
<b>Outlaw</b>	Boilermaker Boost (\$49); Lock, Stock & Barrel 3-mode Distortion (\$49)
<b>Empress</b>	Nebulus Chorus, Flanger, Vibrato (\$299); Heavy Gain Tone (\$299)
<b>Strymon</b>	Deco Tape Emulator/Saturator/Double-Tracker (\$299); Ola dBucket Chorus/Vibrato (\$299)
<b>Chandler Limited</b>	Germanium Drive Distortion (\$335); Little Devil Colored Boost (\$335)
<b>JHS</b>	Kilt Dirt Box / Boost (\$279); Colour Box Analog Console Simulator (\$399)
<b>Caroline</b>	Kilobyte Lo-fi Delay Pedal (\$199.99); Olympia Fuzz (\$145)
<b>Voodoo Labs</b>	Micro Vibe Rotating Speaker Simulator (\$149); Sparkle Drive (\$129)
<b>Electro Harmonix</b>	Pitchfork Tranposer w/Expression (\$158); Stereo Electric Mistress Flanger/Chorus (\$118)
<b>Eventide</b>	H9 Core Multi-Effects (\$399); Harmonizer Pitch Factor (\$579)
<b>TC Electronic</b>	ND-1 Nova Delay (\$169.99); T2 Reverb (\$149.99)
<b>Digitech</b>	Obscura Altered Delay (\$149); Polara Reverb (\$149)
<b>Jetter</b>	BR 1200 Amp Simulator (\$249); Jetdrive (\$259)
<b>Analog Alien</b>	Fuzzbubble-45 Overdrive/Fuzz (\$249); Rumble Seat Analog Multi-effects (\$389)
<b>BBE</b>	Tremor TR-63B Optical Tremolo (\$119.95); Sonic Stomp SS-92 (\$99.99)
<b>Blakemore</b>	R.O.U.S. Distortion (\$149); Dreamsicle Fuzz (\$159)
<b>Circus Freak</b>	Lion Tamer Compressor (\$179.95); Bearded Lady Fuzz (\$179.95)
<b>Pigtronix</b>	Keymaster 2-Channel Balanced to Unbalanced Looper (\$275); Rototron Rotary Speaker Simulator (\$319)
<b>Origin Effects</b>	Cali 76-TX-L Limiting Amplifier w/Lundahl Transformer (\$564); Slide Rig Compact Deluxe Parallel Compressor (\$379)
<b>Neunaber</b>	Seraphim Stereo Shimmer (\$239); Chroma Stereo Chorus (\$239)
<b>Xotic Effects</b>	SP Compressor (\$148.50); BB Preamp (\$189)
<b>Pettyjohn Electronics</b>	PreDrive (Standard \$399 / Deluxe \$599); PettyDrive (Standard #317 / \$399)
<b>T-Rex</b>	Replicator (\$899); MudHoney II (\$369)





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# SEVEN SOURCES OF SUPERB PORTABLE P.A.

BY STROTHER BULLINS

Over the past 18 months, I've reviewed the following portable P.A. products in a variety of applications and environments, such as small- to medium-size clubs/music venues, outdoor/amphitheater environments, street festivals, old creaky wooden theaters, low-key coffee shops and restaurants, houses-of-worship, schools/municipal environments, and literally on the side of the road.

Here are those I'd recommend, categorized per manufacturer and in alphabetical order.

**Alto Professional's Black Series** range includes the Black 12 two-way full-range pair (\$599 street, each) with 12-inch LF transducer and 1.75-inch HF driver, and accompanying Black 15 SUB subwoofer with 15-inch long-excursion LF driver (\$1,099 street). Built of 18mm plywood and adorned with various beefy custom-molded handles, stand and pole mounts and rigging points with a steel speaker grille, this is not a lightweight P.A. It sounds great and offers a noted 1,200 watts of continuous power.

All Black Series components are ready to work with Alto Pro's Live Drive wireless speaker app for iOS, allowing for level matching, EQ adjustment, compression, time-alignment, and more. Also included per component is an extended-range (up to 100 feet) Bluetooth antenna for wireless device pairing.

In review, I immediately noticed the smooth HF response of the Black 12 tops; it reminded me more of a refined studio monitor than a portable P.A. speaker. Musicians commented that it sounded "classic," "full," and "not hyped." Most



Alto Professional Black 12

importantly, the Black Series stands up performance-wise next to competition costing literally hundreds of dollars more per component.

**Bose's F1 Flexible Array Loudspeaker System** is a simple, yet very real line array for Portable P.A. (PPA) applications: a front-of-house sound reinforcement rig covering a range of audience sizes and types with proprietary Bose FLEX array technology, and as easy to position and carry as any typical "black box" gear. For two months, I used an F1 rig (two full-range cabinets and two accompanying subwoofers) in various live sound applications and am sold on its quality and impressive sound via its unique design, build quality and components.



Bose F1

At first glance, the self-powered 1000W Bose F1 Model 812 Flexible Array Loudspeaker looks much like other similarly sized PPA gear. It measures 26.1x13.1x14.6 inches (Hx-WxD) and weighs 44.5 pounds; its accompanying self-powered sub, the 1000W F1 Subwoofer, measures 27x16.1x17.6 inches (Hx-WxD) and weighs 57 pounds. Both are easy to carry and are notably scratch and impact-resistant thanks to a proprietary blend of polypropylene ingredients. Together, Model 812 and F1 Subwoofer system conjoin with the sub's unique built-in speaker stand, creating a sturdier-than-pole-cup, very attractive full-range/subwoofer tower. A standard pole cup is also





Cerwin-Vega P1000X

included on the bottom of the Model 812.

The Model 812's main appeal, however, lies in its simple-to-use Flexible Array technology, a first for the PPA market. Users can shape coverage patterns by manually moving its top and bottom array; in total, the Model 812 features a vertical line of eight small midrange/high frequency drivers plus a 12-inch woofer. Both the Model 812 and F1 Subwoofer have street prices of just under \$1,200 each.

**Cerwin-Vega's P-Series** is one of the company's two powered live loudspeaker lines, the other being C-V's flagship CVA Series—quite possibly the best all-around Portable P.A. gear I've ever used. The CVA is overbuilt in a "tour-grade" way and sounds incredible. The P-Series incorporates some notable CVA-influenced features, as well as a variety of unique and useful touches. For the P-Series review, I received a P1000X pair (at \$699 street, each), a two-way bi-amped full-range bass-reflex speaker featuring a 10-inch LF driver and a 1.75-inch HF driver; polypropylene cabinet with steel accents and handles incorporating a flush waveguide and 18 gauge perforated steel grille; and a Class-D amp providing 1000W of peak power.

After several months of use in a half-dozen gig applications—club/theater, outdoor

venue and rehearsal use—I found the P1000X to be a great stage monitor and main speaker when used as a pair coupled with a powered subwoofer. It's plenty powerful in most PPA applications and seems to be physically overbuilt in typical Cerwin-Vega fashion, with an overall better and thicker grade of polypropylene than I typically find in this category.

Electro-Voice, in my experience, is a no-brainer source of PPA options. One of my favorite "workhorse" lines of the last few years would have to be the **ZLX Series by Electro-Voice**. At \$349 street, the ZLX-12P powered two-way speaker is a true bargain that works incredibly well as a main, monitor or auxiliary speaker; especially handy is its 2-channel built-in mixer and 1/8-inch input for playback, making it ideal for singer/songwriter jobs and beyond.

The EKV Series, E-V's mid-level PPA, offers powerful-yet-efficient performance, unique and valuable DSP features, as well as road-worthy construction at an amazingly good value. To review, I received a pair of EKV-15P 15-inch two-way powered loudspeakers (\$799 each, street) and a pair of EKV-18SP 18-inch powered subwoofers (\$899 each, street), comprising a flexible PPA rig capable of handling a lot. Like all EKV Series components, this E-V review rig features QuickSmartDSP functionality, accessible via a one-knob interface and accompanying LCD screen for easy setup. Input-wise, the EKV Series is rather comprehensive.

The EKV-15P features a 1,500W Class-D power amp providing 134dB maximum SPL. Meanwhile, the well-matched EKV-18SP features a 1,300W Class-D power amp providing 134 dB maximum SPL. EKV's sub notably provides Cardioid Control Technology, which steers its delivery to the audience with a 35dB reduction on stage with multiple subs (as in at least a pair) deployed. Together, this rig creates what can best be described as a sculpted, waste-free sonic impact in use. The EKV Series is a modern tool in that it is efficient and seems to require less corrective EQ before input.

Visually, **Mackie's** black polymer-encased 9.5x17.8x9.1-inch **FreePlay Personal P.A.** chassis best resembles a new century "boom box." As a child of the '80s, I was thrilled to use it as such, too: outdoors on the beach, while camping, and at any potential perfor-



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Electro-Voice EKX-18SP



Mackie FreePlay Personal P.A.

mance location for both playback and performance. The quick scoop? FreePlay is my favorite boom box, ever.

Most importantly, Mackie's FreePlay is a perfectly capable small P.A., one that is ideal for coffee shop-style singer/songwriter uses, quick and easy sound reinforcement tasks, and so on. It boasts 150W (RMS) and 300W (Peak) of power. Its frequency response is an impressive and full-sounding 65 to 20k Hz. It's a stereo playback system: left and right high-frequency drivers with a shared, green-tinted 8-inch LF woofer. A built-in 4-channel digital mixer plus effects (featuring well-chosen minimalistic reverb settings, two delays, four stereo mix EQ settings and a Feedback Destroyer for open mics and DI'd inputs), two mic/line preamps, an 1/8-inch input and 1/4-inch monitor output comprise the FreePlay's simple I/O scheme.

Additionally, consider Bluetooth play-

back and the FreePlay becomes a real problem-solver. For example, it's a perfect solution for a restaurant patio's program music playback and its visiting singer/songwriter on Fridays; and, with battery-powered capabilities (standard D batteries or via optional rechargeable Lithium-ion), it can move anywhere necessary.

Having recently evaluated FreePlay, the subsequent arrival of a Reach PPA system for review made a lot of chronological sense. While FreePlay is the easiest PPA I've ever traveled with, one Reach enclosure will deliver both main and dual stage monitor duties quite well in many small- to medium-sized rooms.

Bluetooth features take Reach to an entirely different level than its closest competition. With the free Mackie Connect mixing app—allowing level, EQ, effects, monitoring and other adjustments—Reach is truly a tether-free system with the

simplest, most logical of touchscreen mixers I've had the benefit of using live. Usefully, it pairs with OSX and iOS as well as Android devices.

**Elite Acoustics Designs' Sunburst Gear M3BR8** could be the most useful multipurpose monitoring tool I've ever used. Is it a studio monitor, instrument monitor, sound reinforcement speaker, Bluetooth-ready portable DJ/KJ rig, remote-location battery powered portable P.A., or a 3-channel mixer with limited EQ? Actually, it's all of those and more.

Designed, built and tested in the U.S., the M3BR8 is notably well built and ideal for mobile artists/recordists, such as those who frequently find themselves performing and producing on the go. The magnetically shielded, front-ported M3BR8 features a 5.25-inch woofer and 1-inch tweeter; three input channels featuring XLR and TRS in-



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Elite Acoustics Sunburst Gear M3BR8



Yamaha DBR10

puts plus 1/8-inch auxiliary jack with volume knob; 3-band master EQ; long-lasting 15-plus hour rechargeable battery; AC/DC operation; Bluetooth playback-ready; separate USB input and charge ports; and 35 mm bottom pole mount with a very sturdy overall build quality and road-ready design. Dimensions are 9x9x14.5 inches (LxWxH); per cabinet weight is 23 pounds.

The M3BR8 surprised me with its studio monitor-level performance, as it's built to handle small sound reinforcement tasks, too. Trust me, this is no typical portable P.A.; I'd feel comfortable mixing on MM Series speakers as well as listening for enjoyment because they sound great and are relatively accurate. Solid as a brick, everything about the speaker feels very high quality—from its knurled aluminum pots, car-

bon fiber-look covering over thick wood cabinetry to its minimalistic, sleek steel handle. The look is a toss-up between modern-day design and lab coat-era recording products. Based on overall quality and flexibility alone, I predict a growing buzz around the Sunburst Gear brand in 2016 based on the MM Series in particular.

**Yamaha's DBR Series**—offering DSP, amp and speaker technologies pioneered in Yamaha's higher-end DSR and DXR Series PPA systems—comes in lightweight, affordable packages for lower-impact applications. For this review, I received a pair of DBR10 full-range powered loudspeakers (at \$399 street, each). Features include a 10-inch LF cone driver and 1-inch throat compression driver with ferrite magnets with 700W peak power/325W continuous (LF: 260 W, HF: 65 W). Dimensions are 12x19.4x11.4 inches and weight is a mere 23.2 pounds.

Processing-wise, the D-Contour switch offers frequency curves for FOH/Main, Monitor or off/bypass settings, plus two HPFs at 120 Hz and 100 Hz, respectively. The DBR Series isn't necessarily built to compete with the current "1k W club" of PPA powered enclo-

tures, yet it's powerful enough to offer what users need in many small-scale sound reinforcement applications.

This DBR10 pair shines as rehearsal wedges/monitors, auxiliary instrument speakers, sole singer/songwriter amplification, and more. For under \$400 each, I'd readily recommend the DBR10 as a solid PPA component to cover coffee shop-type gigs or musician-toting personal stage monitors—they're ideal for applications in which lighter weight is a necessity, yet both power and clarity are desired. ■

*Strother Bullins is Technology Editor for NewBay Media's AV/Pro Audio Group, active musician, recordist and small-venue sound reinforcement wrangler.*

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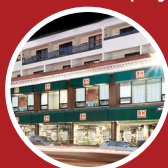
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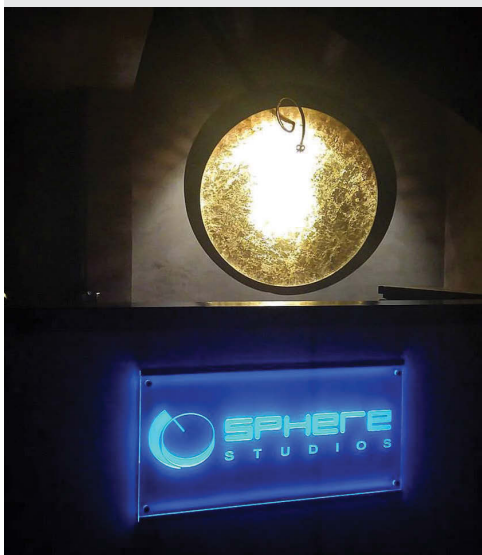
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# MIX REGIONAL: LOS ANGELES

## SPHERE STUDIOS GEARS UP FOR L.A. OPENING



After relocating last year from London to Los Angeles, Sphere Studios L.A. is poised to open its doors in February 2016. The former Kung-Fu Gardens in North Hollywood has undergone extensive upgrades and remodeling.

Owner/producer/multi-award-winning engineer Francesco Cameli says, “I always strive for perfection in my work, and I’m doing the same with the studio. I want people

to walk in here and feel it’s the best studio they’ve ever been to.”

Sphere L.A. consists of two large control rooms, one with a lovingly restored Neve 8078 and the other with a beautiful SSL 4072 G+, each with Pro Tools HDX2 loaded with Prism ADA 8XR conversion (48 I/O and 24 in/72 out, respectively).

A private lounge, 50 x 35-foot live room and four booths complete the Neve studio, with three further recording spaces dedicated to the SSL suite. There’s also a separate writing room, full dining facilities and private courtyard.

Sphere has an extensive equipment list; highlights include PMC BB5-XBD active monitoring in both control rooms, Studer and Ampex tape machines, a separate print rig with Lavry Gold AD/DA in the SSL room and an extremely comprehensive mic collection.

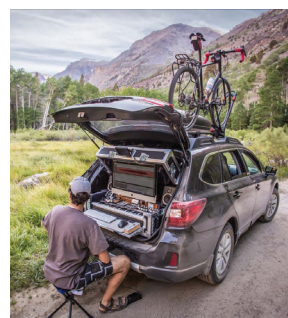
Each control room is loaded with large racks of carefully selected outboard. The collections include Fairchild, Pultec, Neve, GML, UREI, Bricasti, API, Manley, Avalon Chandler and much more.

The studio is also home to a variety of instruments such as multiple drum kits and snares; Steinway models D, B and upright; a Wurlitzer; Hammond B3 with Leslie; Stage and Suitcase Rhodes; Yamaha CP70; and a large selection of guitars and basses, plus amps from Diezel, Mesa, Marshall, Friedman, Ampeg, Vox, Lazy J and SWR.—Lori Kennedy

## Composer Turns Subaru Into Mobile Recording Rig



Cody Westheimer working in his mobile Subaru rig.



When composer Cody Westheimer wanted to untether from his home studio (New West Studios) in Los Angeles and record projects out in the field, he decided to build himself a mobile recording studio... in his Subaru. “The main idea behind the portable studio is it acts as a sketch machine—to get the nuts and bolts of a track or cue laid out,” Westheimer says. “But I’ve discovered it’s not a bad full-production machine! It’s built around a maxed-out iMac with SSDs, and the audio interface is an Apogee Duet. I use Focals for monitoring, and just bring old/cheap microphones with me on the road since I’m likely just recording for reference—think ‘wind noise.’ For guitar, though, I usually record direct, and the Duet is great for that.”

Westheimer powers his studio using a tiny generator, but he hopes to eventually get a lithium battery/solar solution going.

He says the iMac allows him to boot his whole template while he’s away from his rig. Both the mobile studio and his home studio are based around MOTU Digital Performer. “The studios needed to be fairly seamless from going from one to the other,” Westheimer says.

Back at his home studio, for mics, Westheimer favors the Audio-Technica AT 4060 with Millennia pre’s and the AEA R88 for anything stereo—either with Millennia or the AEA pre’s. “I run it through a dinosaur known as the Panasonic DA7,” he says. “I keep wanting to get rid of the monster console, but I am just in love with the AD/DA converters! I monitor through a JBL LSR 5.1 system and my custom-made—by me, designed by Jim Holtz—Statement Monitors. They’re really special speakers—I’ve never heard a clearer mid-range. I use Digital Performer, Pro Tools and VEPro all on my Mac Pro. This is mostly duplicated in my wife’s [Julia Newmann] studio upstairs—she writes for the Fox show *Bones*.”

Recently, Westheimer scored the IMAX film *Journey to Space*, which premiered in Los Angeles in October. “I had the opportunity to conduct an orchestra under the Space Shuttle Endeavor!” Westheimer says. “That was a really spectacular experience.”

—Lori Kennedy



## Infrasonic Sound Welcomes Engineer Dave Gardner

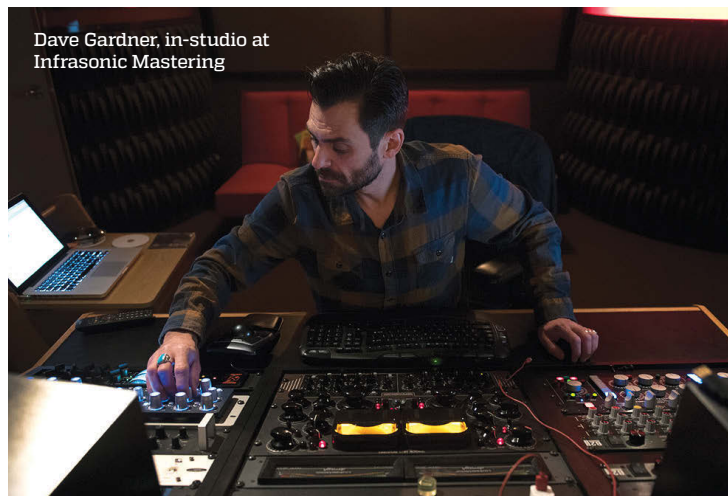
Infrasonic Sound, an audio and vinyl mastering studio in Los Angeles, has announced that engineer Dave Gardner will join the studio's staff beginning this month. Gardner, the founder of Magneto Mastering in Minneapolis, brings more than 17 years of experience to his new position at Infrasonic Sound.

Gardner will join Principal Mastering Engineer Pete Lyman and engineers Phillip Rodriguez and Nick Townsend as a full-time member of the studio's staff. Infrasonic is co-owned by Lyman and Jeffrey Ehrenberg.

"Dave's approach to mastering really aligns with Infrasonic's ethos," says co-owner Pete Lyman. "His client roster is equally as diverse, from punk to Americana to jazz, and he thinks of the mastering process not as a one-way experience for the client, but as a collaborative one. We're really looking forward to joining forces and utilizing the talent—and the collection of vintage Ampex tape machines!—that Dave will contribute."

Gardner will integrate his existing mastering setup into the studio at Infrasonic, including his ATC SCM 100A speakers. While on staff, he will continue working as Audio Consultant for Noiseland Industries, coordinating the audio components of the company's vinyl manufacturing process. The position complements Infrasonic's thriving vinyl mastering department.

"Coming to Infrasonic feels, both from a facility standpoint and a client standpoint, like everything is coming together in exactly the right fit,"



Dave Gardner, in-studio at Infrasonic Mastering

Photo: Will Carnahan

Gardner says. "Everything I do as a digital mastering engineer keeps an eye toward vinyl as the end-format. This approach has really dictated my creative decisions and informed the way that I handle audio."

Some of Gardner's recent projects include upcoming releases for Pkew Pkew Pkew (Gunshots), the forthcoming release from Mrs. Magician, Mean Jeans for Fat Wreck Chords, and Ceremony's *The L-Shaped Man*. Gardner has also mastered projects for The Hold Steady, Black Lips, Rocket from the Crypt, Hot Snakes, Trampled by Turtles and Drive Like Jehu.

## Morgan Mallory Records Crowd-funded Album at Hybrid Studios

Like legions of other artists do for their first recording, Morgan Mallory could have set up shop in a spare bedroom and record a decent-quality product. But his ultimate goal was to work in an inspiring recording studio, surrounded by the best gear and trained professional ears to produce an album of major-label quality. For Mallory, Hybrid Studios fit the bill perfectly.

When it came to the matter of how to finance a commercial recording in a world-class studio, Mallory had another goal: He wanted the album to be 100 percent crowdfunded. After raising \$8,000 from 150 donors over six months through a GoFundMe account, Mallory's debut studio album, *Manifesto*, was recorded, mixed and produced at Hybrid Studios by Grammy Award-winning producer/engineer Philip Allen and mastered by Hybrid's Billy Klein.

"Making this album at Hybrid Studios with this talented team of peo-



ple was really a dream come true," Mallory says. "I am completely blown away at the sound quality, the depth, and the dynamics of the recordings and know that I could have never come close to bringing this project to life the right way without the Hybrid Studios team and Hitstorm."

Backing Mallory in the studio was the band The Hitstorm; Justin Norman on guitar, Ryan Smith on drums and Phil Allen on bass, who tracked the songs together in Hybrid's 1,000-square-foot live room.

"Morgan is an incredible talent, so it's no surprise that he made an incredible album here at Hybrid," says Studio Manager Mike Miller. "I think the amazing fans that crowd-

funded this project are going to be blown away when they hear *Manifesto*; you can really hear the dedication that Morgan, Phil and the Hitstorm put into every track."

Mallory believes that the fact that so many people came out of the woodwork to support *Manifesto* is a testament of the importance of community. "This project is a message to young, budding artists that they should dream bigger, plan farther and forge their own path towards making themselves heard."

# SESSIONS: LOS ANGELES



The Arcs at The Village

Audio Engineer Maxime le Guil a nomination as well...Queen Latifah and Neophonic tracked music for the HBO TV film *Bessie* in Studio A. The project was engineered by The Village's own Ed Cherney, who went on to win an Emmy for Outstanding Sound Mixing for a Limited Series or a Movie...Miguel tracked much of his latest album *Wildheart* in Studio B, which received a Grammy nomination for Best Urban Contemporary Album, and his song "Coffee" is nominated for Best R&B Song...The Arcs, Dan Auerbach's (of The Black Keys) newest side project, recorded their first official media appearance in Studio D. They tracked three of their songs live for KCRW Morning Becomes Eclectic and several other broadcasting programs.



Best Coast performs live atop the Capitol Studios tower.

neer Shawn Everett and assistant Steve Genewick in Studio A...Dwight Yoakam was with engineer Marc DeSisto in Studio A and B (Yoakam also produced)...D. A. Wallach worked on a live performance for Capitol Music Group's *One Mic, One Take* series in Studio B, which was produced by Possum Hill and engineered by Mick Guzaski...On November 30, Best Coast performed on the rooftop of the Capitol Tower, a 360-degree virtual reality broadcast of a concert. Capitol Studios was able to do that thanks to a newly installed high-speed fiber network, which connects the roof to all the studios for audio and video delivery. The performance was shot on the Nokia OZO virtual-reality camera and simultaneously mixed in Capitol Studios, while streamed to an audience at L.A. Live. Prasad Balasubramanian produced and Steve Genewick engineered, with Art Kelm serving as chief technical director...In studio news, Capitol has two brand new writers' rooms with Avid S6 consoles. The studio also has a new Neve 88-R console for Studio C to match Studio A's console.



Studio 1 at EastWest

## THE VILLAGE

Melody Gardot's *Currency of Man* was tracked in Studio D, and earned producer Larry Klein a Producer of the Year Grammy nomination. The album was mixed in Studio F on the studio's new Avid S6 control surface, earning

## CAPITOL STUDIOS

Adele worked in Studio D with producer Greg Kurstin and engineer Tom Elmhirst...LeAnn Rimes worked on *Today Is Christmas* in Studio B with producer Darrell Brown and engineer Niko Bolas...Alabama Shakes worked on a video with producer Michael Murphy, director Danny Clinch, engi-

## EASTWEST STUDIOS

In Studio 1, Chris Isaak was with engineer Mark Needham (Isaak also produced); Neil Young was with engineers Al Schmitt and Niko Bolas (Young also produced); Michael Bublé was with producer Bob Rock and engi-

neer Eric Helmkamp; Richie Sambora and Orianthi were with engineer Helmkamp (Sambora, Orianthi, Rock and Michael Bearden produced); producer Julian Raymond and engineer Bryan Cook worked on the current season of *American Idol*; producer/engineer Johnny K worked on indie film *Hired Gun*; production continues on the new *Lion King* movie, *Lion Guard*; and Nas and SNOH worked on performance video shoots, and Samsung, Nike and Intel worked on commercial shoots...In Studio 2, Rick Springfield was with co-producer/engineer Matty Spindell (Springfield also produced); Stephen Stills/The Rides were with engineer Ed Cherney (Stills also produced); Vintage Trouble was with producer Don Was and engineer Howard Willing; J.R. Richards (formerly of Dishwalla) was with engineer Brian Scheuble (Richards also produced); Weezer was with engineer Jake Sinclair (Weezer also produced); LeMar was with producer Larry Klein and engineer Lynn Earles; Andra Day was with producer Adrian Gurwitz and engineer Ken Sluiter; and Iration was with engineer Will Brierre (Iration also produced)...In Studio 3, James Blake was with producer Rick Rubin and engineer Jason Lader; Steve Angello (of Swedish House Mafia) was in the studio working on new material; Glen Danzig was with engineer Chris Rakestraw (Danzig also produced); Jamie Wyatt (featuring Slash) was with producer/engineer Mike Clink; and Animal Collective was with producer/engineer Sonny Di Perry...In Studio 5, Justin Bieber was in the studio working on "Where Are Ü Now" with Skrillex and Diplo; Martin Garrix worked with various producers, including Skrillex and Diplo; Krewella was with engineer David Davis (Krewella also produced); PSY was in the studio working on new material (PSY also produced and engineered); and Frank Ocean was in the studio with various producers, including Rick Rubin, and engineer Jeff Ellis.



BJ The Chicago Kid recording backtracking vocals in Studio A for his live performance right before heading out on the Critically Acclaimed Tour with artist Big K.R.I.T.

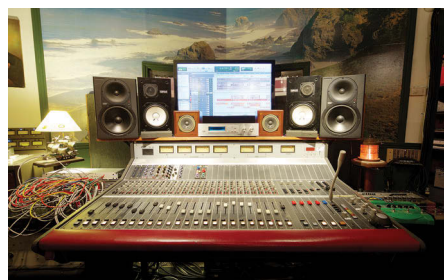
Austin...London Souls worked with engineer Ablaev, with Sanchez assisting...Kevin Federline worked with engineers Ablaev and Sanchez...Crichy Crich worked with engineers Sanchez and Ablaev...Orgy worked with engineer Jay Gordon...Kehlani worked with engineer Oak Fedler...Rocky Kramer worked with engineer Olmon...Angie Fisher worked with engineer Jacob Quetant...Artists K Michelle, Ace Hood and Ceelo Green were also in the studio working on new material.

## 17 HERTZ STUDIO

Engineer Ervin Ablaev worked on projects with the following artists: Omarion, Sean Kingston, Detail Fisher, Daniel Gibson and Eddie Kramer...Engineer Luke Sanchez worked on projects with the following artists: Halsey, Lido and MØ...BJ The Chicago Kid worked with engineer Ablaev, with Steve Olmon assisting...Goapele worked with engineer Cornelio

## THE SHIP

Jason Lytle and Aaron Espinoza worked on the *This Is Your Day* soundtrack. Lytle and Espinoza both produced, and Espinoza also engineered. They used a Korg Monotribe, Electro-Harmonix DRM 15 and a Yamaha



Continued on p. 69



Continued from p. 34

of sound are very strong for him. Everything that happens in sound has a natural correlation with the image, but it's not isolated. In many ways, it is one and the same thing."

Iñárritu put tremendous effort into visually presenting a cold, raw reality in *The Revenant* by shooting outdoors in harsh conditions and only using natural light. That passion for realism carried over to the sound. He sought out Thom, who specializes in creature vocals, to craft a realistic bear attack that comes from an entirely CG bear. "There was never any real bear that was being photographed. ILM (Industrial Light & Magic) did a wonderful job on the visuals, making the bear believable visually. It looked dirty, and leaf covered and grimy, as a bear would be roaming around in a wet forest," says Thom. "The challenge for us was to do something on the same level with sound. It had to be all organic, and we had to be careful the bear attack didn't sound 'Hollywood,' not overdone and exaggerated."

The bear displays a range of emotion, from being nurturing with her cubs, to being aggressive during the attack, and afterwards, being injured. Starting with Skywalker's extensive sound library, Thom pulled a variety of bear vocalizations. For the injured bear sounds, Thom built its heavy breathing using recordings of horses with respiratory problems. And since the library didn't have recordings of a bear attack, Thom admits, "I had to resort to using my own voice a couple of times, too. Luckily I'm a big guy with a big voice and so I can pass as a 400-pound bear if necessary." He used Serato's Pitch 'n Time Pro to help make the separate elements sound as if they're coming from the same animal. "Creature vocalizations are the hardest kind of sound design to do, and the bear attack sequence is fairly long. I had to make it dynamic, and run the gamut of emotions the bear goes through."

*The Revenant* was mixed in 7.1 on a Harrison MPC4-D console in the Hitchcock Theatre at Universal Studios in Universal City, Calif., by re-recording mixers Frank A. Montañó and Jon Taylor. Additional sound effects mixing was handled by Thom and Montañó on Universal's Stage 6. After the final 7.1 mix was crafted, a Dolby Atmos mix was built based on the 7.1 mix automation, as well as a 12-channel and a 5.0 IMAX mix. Montañó, who mixed Iñárritu's *Birdman* with Taylor last year, notes *The Revenant*'s soundtrack is a delicate blend of dialog, music, and nature that all move in a non-traditional way.

"The camera is always moving to some degree, and sound follows," Montano says. "Our goal was to always have enough movement without being distracting and having the audience lose focus on the story. Alejandro is always exploring how picture and sound feel together; it may be a literal-sounding scene or a subjective-sounding scene that has the correct impact to create the right feeling for that moment, and that's when he says, 'We got it.'"

Taylor, who handled the dialog, ADR, walla and music, says the challenge on his side of the board was incorporating the countless lines of ADR into the production dialog. According to Taylor, director Iñár-



Re-recording mixers Jon Taylor and Frank Montañó.

ritu wanted to be extremely accurate with the different Native American languages, which actually change from the past and present in the film. "This meant lots of ADR throughout the mix," says Taylor. "Nothing about this film is standard and no single sound just went by. Every possibility was explored."

"Alejandro is making a very different film," Hernandez concludes. "It's very different from *Birdman*, and it's very different from his other films. So for him it is a discovery process and it's an ongoing process that's still changing. Being a part of that discovery process is very satisfying, but it can be very challenging. When something you did feels like it belongs and really helps to tell the story that Alejandro wanted, that is very satisfying. It really pays off for all the hours you put in." ■

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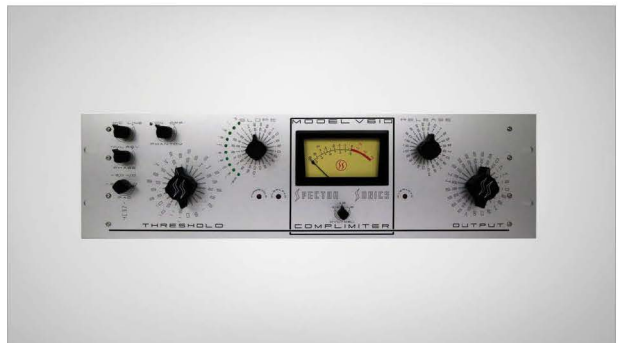
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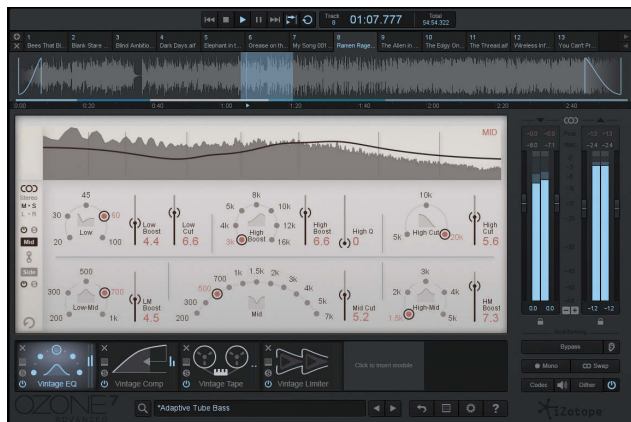


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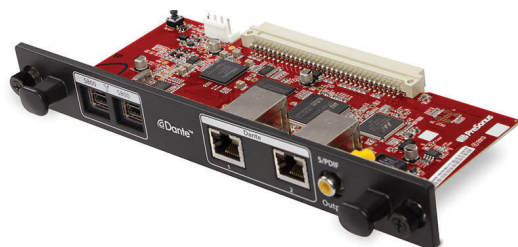


## IZOTOPE OZONE 7 MASTERING TOOLS

### Vintage-Inspired Processors

Ozone 7 brings a new set of features aimed at professionals looking to add precise final touches to any audio production. Processors include a Vintage Limiter, Vintage Tape (Advanced only), Vintage Compressor, Vintage EQ and a Dynamic EQ. Also included is a Maximizer with a new IRC IV mode that increases perceived loudness without negative artifacts and new export options including MP3 and

AAC encode formats. Ozone 7 runs as a stand-alone application or as a plug-in in your audio editing software. Ozone 7 Advanced includes 10 additional component plug-ins providing direct access to individual Ozone modules in your host. The software comes in two versions: Ozone 7 (\$249) and Ozone 7 Advanced (\$499).



## PRESONUS SL-DANTE-MIX OPTION CARD

### Networking for Mixers and Loudspeakers

PreSonus has shipped the SL-Dante-MIX option card for StudioLive AI mixers (\$599.95). Dante-enabled StudioLive Active Integration mixers allow users to create a complete, networked audio system with any Dante-enabled audio device, using a standard 1 GB Ethernet switch and Audinate's Dante digital-media networking technology, which also includes Dante Virtual Sound Card for Mac and Windows. The Dante option is also now available for the WorxAudio TrueLine powered line arrays and WaveSeries loudspeakers with PDA1000 and PDA2000 amplifiers.



## SONIFEX AVN-GMCS GRANDMASTER CLOCK

### Sync for Ravenna Networks

The new Sonifex AVN-GMCS grandmaster clock (\$1,995) is used to synchronize all the nodes within a Ravenna network. Ravenna (of which AES67 is a subset) allows for the distribution of audio across a network. The AVN-GMCS uses a combination of a GPS receiver, a PLL (phase lock loop) and a specialist onboard clock device to create the precise, low-jitter clock signals required to drive the physical transceiver's time-stamping circuitry, also providing holdover if the GPS signal is lost. The specialist onboard clock is available in three different types: TCXO (Temp controlled), OXCO (Oven controlled) and CSAC (Chip scale caesium atomic clock), which provide between 1 part per million and 0.00050 parts per million accuracy if the GPS signal should be temporarily lost. The unit has a front panel power button and dual power connectors—an IEC mains input and a 12VDC input, which allows the AVN-GMCS to be used for both studio and mobile installations.



## GENELEC 1236 SMART ACTIVE MONITOR

### Class-D Power, Dual-Woofer Design

Genelec's flagship 1236 system and accompanying RAM-XL Remote Amplifier Module (\$40,000 to \$45,000/each) is a new design based on the high-efficiency proprietary double-18-inch bass driver design of the company's 1036 monitor. The 1236's frequency response extends from 17 Hz to 26 kHz, and is capable of delivering 130 dB SPL at 1 meter through a combination of modern digital signal processing and efficient Class-D amplifiers. The 37.75x46.5x25.625-inch (HxWxD) enclosure features two 18-inch high-linearity woofers, with two Genelec proprietary high-efficiency 5-inch midrange drivers, as well as a 2-inch high-compression tweeter, mounted in a very large Directivity Control Waveguide (DCW) enclosure.





## UNIVERSAL AUDIO UAD SOFTWARE VERSION 8.4

### New Plug-ins and More

The UAD Version 8.4 upgrade from Universal Audio for UAD hardware and Apollo Interfaces features four exclusive new plug-ins—including the Eventide H910 Harmonizer, Marshall Bluesbreaker 1962 and Silver Jubilee 2555 amplifiers—and UA's own Oxide Tape Recorder (\$399 for all or \$199 upgrade price for current owners of the Marshall Plexi Super Lead Plug-In). The H910 Harmonizer plug-in models the H910's entire analog/digital circuit, including its custom-built A/D converter. The Marshall Bluesbreaker features three different virtual microphone combinations—FET, Valve and Dynamic. Developed by Softube, the Marshall Silver Jubilee 2555 plug-in offers a three-mode pre-amp section and dynamic distortion. The Oxide Tape Recorder plug-in provides the warmth, color and punchy low-end response of large-format analog tape machines.



## FLUID AUDIO F5 AND F8 MONITORS

### Active Close-field Studio Speakers

The F5 and FX8 monitors from Fluid audio feature bi-amped, Class-A/B power and included isolation pads. The F5 (\$399.99 a pair) offers 5-inch low-frequency drivers with composite paper cones and a 1-inch treaded silk-dome high-frequency driver. The front-ported cabinet is magnetically shielded and has XLR balanced, 1/4-inch balanced and RCA unbalanced inputs. The FX8 (\$349.99 each) is bi-amped at 130 watts and features an 8-inch low-frequency and 1.2-inch treaded silk-dome drivers. Like the F5, the FX8 features a fader volume control on front baffle and an amplifier standby mode that powers down the amp when no input signal is detected.



## BAREFOOT MICROMAIN26 MONITOR

### Four Listening Modes, 3-D Printed Waveguide

The MicroMain26 (\$12,495 a pair) is a 4-way active system with six drive units spanning 30 Hz to 45 kHz housed in sealed enclosures. The MM26's 2.5-inch aluminum-cone midrange is housed in a cutting-edge 3-D-printed waveguide enclosure while the 5.25-inch woofers promise exemplary upper bass and lower midrange detail. The 1-inch ring radiator tweeter is powered at 180 watts and features an advanced geometry motor and rear waveguide chamber. The MM26 provides four modes: a revealing "Flat" response, a warmer "Hi-Fi" setting, an "Old School" setting that emulates the sound of the NS10M near-field, and a "Cube" setting that emulates the mid-centric sound of classic mix cubes.

## SOFTUBE FIX FLANGER AND DOUBLER PLUG-IN

### Processor Emulates Classic Hardware Design

Created by Softube from the mind of original hardware designer Paul Wolff comes the new Fix Flanger and Doubler (\$149). The plug-in package provides hands-on flanging with unique stereo widening methods, as well as vocal doubling with lush chorus and rich textures. The plug-in offers classic auto-sweep flanging, VSO flange control, with servo motor bounce emulation and 'Auto Double' with accurate flange effect cancellation for natural-sounding doubler effects.



# New Sound Reinforcement Products



## WORXAUDIO TRUELINE XQ10 SUBWOOFER

### Easy-to-Transport Extended Bass System

The TrueLine XQ10-P features four direct-radiating, 10-inch, 500-watt cone drivers with 2.5-inch voice coils in a tuned enclosure. This enclosure is made from highly braced, tour-tested, 15-ply Baltic Birch with 18mm thick baffle board construction that provides unsurpassed rigidity and strength. The XQ10 subwoofer is available in both touring and install configurations: XQ10i-P (install—powered), XQ10i-BA (install—biamped), XQ10T-P (touring—powered), and XQ10 (passive). The powered versions include WorxAudio's acclaimed PDA-2000 power amplifier, which is available with Dante and AVB audio networking options, onboard DSP, and WorxAudio's AllControl software integration. The PDA-2000A and PDA-2000D are 2,000W, 4-channel amplifiers (500W per channel 1,000W peak) with internal DSP. The PDA-2000A includes the AVB card, while the PDA-2000D incorporates the Dante card. Networking provisions of the PDA-2000D include onboard etherCON. Units are priced per configuration.



## MARTIN AUDIO MA5.0Q AMPLIFIER

### Lightweight, 4-Channel Power

The MA5.0Q amplifier from Martin Audio (\$TBA) delivers features four channels in a single rackspace, up to 5,000 watts switch-mode power supply, and patented amplifier output filters with ripple cancellation network. The amp is optimized for 4Ω loads, ideally matching real-world scenarios in targeted applications. Other features include AC protection, a clip limiter, short-circuit protection, thermal protection, temperature control, a continuous variable speed fan, and front to rear airflow. The MA5.0Q is targeted for stage monitoring; hotels, restaurants and bars; visitor attractions; houses of worship; auditoriums; educational facilities; live sound and night clubs.



## BOSE PANARAY SERIES IV LOUDSPEAKERS

### Easily Installable Line Arrays

All Bose Professional Panaray installed sound-reinforcement loudspeakers feature full-range driver arrays, rear-threaded inserts with industry-standard mounting, and side-threaded inserts and an optional U-Bracket to make installations simple, fast and cost-effective. Drivers are set at precise angles to provide wide, even coverage, reducing the number of loudspeakers required for many installations. The lightweight Panaray 802 Series IV loudspeaker features a wide 120x100-degree (VxH) Articulated Array design with a 52Hz low-frequency response, eliminating the need for subwoofers. The smaller Panaray 402 Series IV indoor/outdoor installed sound-reinforcement loudspeaker features a wide 120x60-degree (VxH) Bose Articulated Array design, while the 73Hz low-frequency response covers the entire vocal range.



## ZOOM F8 MULTITRACK FIELD RECORDER

### Eight Preamps, iOS Control

Designed for filmmakers and sound designers, the F8 recorder from Zoom (\$999.99) is equipped with eight XLR/TRS combo inputs using Zoom's low noise (-127 dBu EIN) and high input gain (up to 75 dB) preamps. The unit records at up to 24-bit/192kHz resolution, weighs just more than 2 pounds and features timecode sync and dual SD Card slots, each compatible with SD/SDHC/SDXC cards of up to 512 GB. Also included is wireless Bluetooth control and the Zoom F8 Control app, providing remote control of the F8 from your iOS device and offering transport controls, level monitoring and metadata editing.



# SESSIONS: LOS ANGELES

Continued from p. 62

U3 (which is brand new to the studio)...Kimbra & Friends worked on new material, with Kimbra also producing and Espinoza engineering. They used a Boss SP404, and employed live sampling and no isolation...Until The Ribbon Breaks was with engineer Espinoza (Until The Ribbon Breaks also produced). They employed a string quartet and used beyerdynamic M 160s...Crush DLX and Sean Lennon was with engineer Espinoza (Crush DLX and Sean Lennon also produced). They used a Juno 106, Yamaha VSS 200 sampling keyboard, and an Overstayer Stereo Field Effect Compressor...The Frights worked with producer Zac Carper and engineer Espinoza on *Afraid Of The Dark*. They used a Critter & Guitari Pocket Piano and an Overstayer Stereo Field Effect Compressor...Nav/Attack worked on a self-titled mix with producer Andrew Lynch and engineer Espinoza. They used a modified ADM console and an Overstayer Stereo Voltage Compressor.



Producer/engineer Joe Cardamone tracking guitars on the new Annie Hardy (vocalist/songwriter for Giant Drag) solo record.

that had an omni pattern on everything...Pink Mountaintops worked on new material with producer/engineer Cardamone. They used an ARP 2600 and ARP OMNI, as well as an Electro-Voice RE-15 on vocals...The 20th Anniversary *Permanent Midnight Audio Book Score* was recorded at the studio, with Cardamone producing and engineering. The entire 15-hour score was played live in two days, and every instrument in the room was miked up...In studio news, Cardamone's friend from Fu Manchu recently donated a perfect Hammond M-3 organ.



Left to right: Kenny Summit, Kraig Tyler and Jason Dragon.

producer/engineer O'D. They used Otari Sound Workshop Series 34 40-channel console, Universal Audio Apollo Quad, UAD-2 Quad, and Blue microphones...Kirsten Opstad was with producer/engineer Jason Dragon. They used an Otari Sound Workshop Series 34 40 channel console, Universal Audio Apollo Quad, UAD-2 Quad, UA

## VALLEY RECORDING COMPANY

The Cult was with producer Bob Rock working on new material...James Williamson with The Stooges was with engineer Chris Claypool (Williamson also produced). Williamson brought in his Neve 1073s to use...Destruction Unit was with producer Joe Cardamone and engineer Greg Gordon. They used an old Revox reel-to-reel for flanging and phasing the entire mixes, as well as a Pigtronix Keymaster to use stompboxes on vocals...The Icarus Line worked with producer/engineer Cardamone on new material. Cardamone noted that almost every mic

## SKELETON STUDIOS

Kenny Summit worked with producer/engineer Kraig Tyler. They used an Otari Sound Workshop Series 34 40-channel console, Universal Audio Apollo Quad, UAD-2 Quad, Ace Tone Rhythm Ace FR-1, Native Instruments Komplete 10 Ultimate, Sugar Bytes, and IK Multimedia...Maxine Ashley worked with

LA-610, Akai A-DAM, Neumann and Blue mics, and Ableton Live 9 Suite. They layered, reversed and re-recorded the Fender Stratocaster and Kurzweil K-250, and the Yamaha G2 grand piano in Culver City auditorium was recorded with six Blue mics...Rama Duke was with producer/engineer Tyler. They used the Otari Sound Workshop Series 34 40-channel console, Universal Audio Apollo Quad, UAD-2 Quad, Native Instruments Komplete 10 Ultimate, Sugar Bytes, IK Multimedia, and various vintage drum machines...Blooming Fire worked with producer/engineer Tyler. They used the Rupert Neve Portico 5060 Centerpiece, Otari Sound Workshop Series 34 40-channel console, Universal Audio Apollo Quad, UAD-2 Quad, Pro Tools 10 HD3, API 560B, API 512 C, API 3124+ 4-Channel Mic Preamp, Neve 1073 Vintage Original, Neve 1064a, Vintech VA573, and Roland TR-77. The project was recorded in real time over a weekend. Six musicians performed live together...Liquid Giraffe was with producer/engineer Tyler. They used the Otari Sound Workshop Series 34 40-channel console, Pro Tools 10 HD3, Universal Audio Apollo Quad, UAD-2 Quad, Akai A-DAM, Native Instruments Komplete 10 Ultimate, Sugar Bytes, and IK Multimedia...In studio news, Skeleton has just launched its record label, Teleportation Records. The first album release is *Stay Strangers* by Kirsten Opstad. Several more albums are scheduled for release, including music by Liquid Giraffe and Zib Zeptumnn.



United Recording Studio B

## UNITED RECORDING

Andrew Lloyd Webber and Rob Cavallo worked in Studio A and Studio B on *School of Rock* with engineer Doug McKean and assistant engineer Wesley Seidman. They used the Neve 8088.



Engineer/producer Josh Gudwin

## RECORD PLANT

Engineer/producer Josh Gudwin spent most of 2015 in SSL3, working on Justin Bieber's *Purpose* album and projects with Rita Ora and Carly Rae Jepsen. Henrique Andrade was assistant engineer on all of these sessions.



Peter Erskine, Alan Pasqua and Maurice Gainen

## MAURICE GAINEN PRODUCTIONS

Mastering engineer Maurice Gainen has mastered more than 180 Starbucks compilations. He recently completed a project for Japanese composer "Hassy" Hashimoto, featuring Peter Erskine, Alan Pasqua, Damian Erskine, Nori Tani, Koto soloist Tomoko Kihara and live strings...Gainen worked with Argentinian guitar virtuoso Marcelo Berestovoy, on Darek Oles' tribute to Charlie Haden, and the third CD for British artist James Webber, which had three songs placed in Weinstein Bros. films...A very special project was the "Mighty Mo" Rodgers benefit song for victims of the Nov. 13, 2015 attacks in Paris. The song is called "Postcards From Paris." Gainen tours Europe two times a year, and happened to be in France on that day...Gainen also started his seventh CD as a woodwind artist/composer, featuring his international cast of musicians.

# Tech // reviews

## FABFILTER PRO-C 2

### Powerful New Controls and Compression Styles

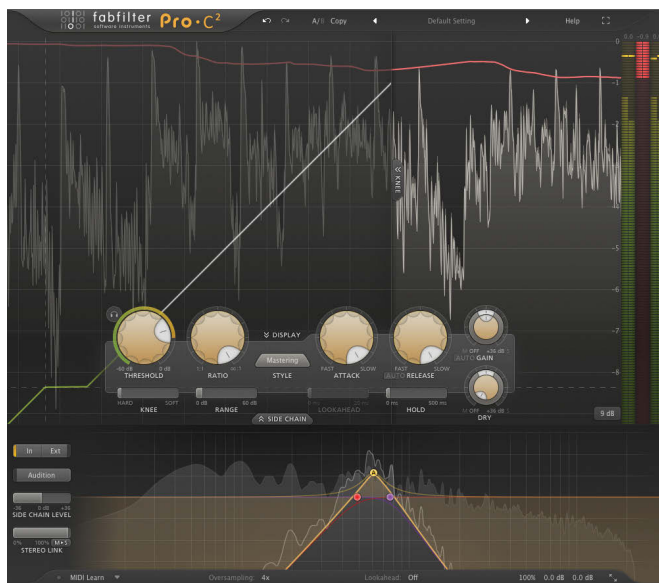


Fig. 1: Pro-C 2's fully expanded GUI: A gain-reduction trace, spectral display and graphic of the current knee show in the top half; gain-reduction controls populate the middle section; and powerful controls for channel linking and sidechain filtering are situated in the bottom pane.

**F**eaturing mid-side processing, parallel compression capability and advanced sidechain functionality, FabFilter's original Pro-C was an effective wideband compressor plug-in in a crowded field. Its new version, Pro-C 2 (\$179), adds five new compression "styles" and extremely powerful new controls. Now it's a force to be reckoned with.

#### AHEAD OF THE CURVE

Five new compression curves join Pro-C 2's legacy Clean (feed-forward), Classic (feedback) and Opto selections, all accessed from the Style menu in the extensively redesigned GUI (see Fig. 1). The Vocal algorithm uses automatic ratio and knee settings to move the money track forward in the mix. The Mastering compression style is designed to be as pristine as possible but fast enough to attenuate transients. The Bus selection adds glue to full mixes and subgroups. Selecting Punch reportedly yields analog-like compression. The Pumping selection suggests use on drums and EDM productions.

You can dial in up to 20ms look-ahead detection. An inno-

vative Audition Triggering function helps you set the optimal threshold by passing to the output only those portions of the audio that are being compressed.

Pro-C 2 provides a continuously variable slider that adjusts the knee from 0 (hard knee) to 72 dB (soft knee); very high settings and fast attack times produce saturation-like effects. The new Range slider sets maximal gain reduction from 0 to 60 dB, and the new Hold slider maintains peak gain reduction for up to 500 ms before the compressor's release phase kicks in. Pro-C 2's Mix control can be set as high as 200 percent to double the amount of dynamics processing compared to the nominal amount.

#### POWERFUL SIDECCHAIN FEATURES

As in the original Pro-C, Pro-C 2 provides internal and external sidechain inputs and an audition function that lets you hear the detection signal (after any internal filtering or channel-linking adjustments are applied). Pro-C 2's other sidechain controls have been streamlined. Gone are the separate (and confusing) gain and pan controls for each channel (left and right, or mid and side) that adjusted respective levels and trigger sources for channel linking. Instead, one gain control adjusts the level of the sidechain signal—no matter its source—that feeds the detector.

In the first half of its range, the horizontal Stereo Link slider progressively increases (in percentage terms) the degree to which left and right channels are linked. The second (right) half of the slider's range controls how much the mid and side channels are compressed in relation to one another, which varies depending on which of four associated buttons (labeled Mid, Side, M>S, and S>M) you select. You get one of the following results when the slider is set to its maximum value (dragged fully to the right): The mid channel provides the trigger and is solely compressed (the Mid button is selected), the side channel provides the trigger and is solely compressed (Side selected), the mid channel provides the trigger for compressing only the side channel (M>S selected), or the side channel provides the trigger for compressing only the mid channel (S>M selected).

The selection of internal sidechain filters has been greatly expanded in the new release. In addition to the legacy HPF and LPF, a new mid-band filter can be configured to provide bell, low-shelf, high-shelf, bandpass, notch or tilt equalization. When the mid-band filter is set to Auto mode, it automatically and progressively provides boost between the LPF and HPF as their corner frequencies approach each other. With the LPF and HPF corner



frequencies nearly on top of one another, this creates an equalization curve reminiscent of the Matterhorn's profile; as you can imagine, such a setup makes Pro-C 2 much more responsive to triggering at a very specific frequency of your choosing. The HPF and LPF have also been updated to offer independent bypasses and a selection of nine different slopes, ranging from 6 to 96 dB/octave. Pro-C 2's GUI can be collapsed to hide all sidechain controls, and doing so bypasses their effect (preventing hidden settings from unintentionally shaping compression).

The plug-in's I/O and gain-reduction meters have a much wider range, are much easier to read and show both peak and loudness levels; the loudness levels comply with the Momentary mode of the EBU R128/ITU-R 1770 standards. You can limit the meters' range to as little as 9 dB for mastering. The GUI offers three interface sizes and a beautiful full-screen mode. Retina (for OS X) and high DPI (Windows) displays are supported.

### AT THE CONTROLS

My most ambitious test of Pro-C 2 was on a rock mix that had explosive reverb on the snare drum track. The reverb competed too much with lead vocals but sounded appropriately loud during all the instrumental breaks. The solution was to use Pro-C 2's M>S sidechain mode (linked 100-percent) to make the vocal in the mid channel trigger compression in the side channel (thus lowering the reverb's level only when the vocalist sang). Guitars and dry snare drum—almost as loud as vocals in the mid channel—made it a challenge to ensure only the vocal would trigger compression. Auditioning

the sidechain signal helped immensely with fashioning the precise threshold and sidechain filtering required to accomplish the task: Boosting 600 Hz over a narrow 300Hz bandwidth and rolling off all other frequencies—and using a 250ms attack time—kept snare (and kick) hits from triggering compression, while passing vocal signal in the sidechain. I used Pro-C 2's new Mastering style, a very hard knee (to define precisely the threshold and weed out guitars), and infinity:1 ratio and 1dB range (to produce consistently mild gain reduction). A 2.5-second release time kept the side channel's level from pumping during short gaps in singing. Problem solved! Just remember always to consider the tradeoffs—potential collateral damage to other stereo content and imaging instability—when using M/S techniques such as this.

On stereo room mics for drums, the new Pumping compression style produced explosive, hyperventilating tracks. I first dialed in the hardest knee and highest ratio and range possible. I unlinked the left and right channels to deliberately destabilize the stereo image and applied over 13 dB of tilt equalization in the sidechain—boosting below and cutting above 840 Hz. A 0.005ms attack time and 100ms release made the drums pump like a jackhammer!

These are just some of the many applications where the highly versatile Pro-C 2 excels. The most full-featured and powerful wideband compressor plug-in available today, Pro-C 2 is a terrific product. And the price is right! ■

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



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# SHURE PGA181 CONDENSER MICROPHONE

## Reasonably Priced, Great-Sounding Condenser

**S**hure's PG Alta Series of microphones was designed to bring pro-quality sound down to reasonable price points. The Alta line comprises a variety of vocal and instrument microphones, the PGA181 being one of the more recent introductions. A side-address, cardioid condenser microphone, the PGA181 (\$99) was designed for use on acoustic instruments and vocals, as well as amplified instruments. Shure sent *Mix* a pair of PGA181s so we could put them through their paces.

### BASIC AND BLACK

The PGA181 is a very unassuming microphone: all black with a lollipop-type head mounted atop a sturdy, cast-zinc conical body. Construction feels solid and inspires confidence. Included with the mic are a stand holder, a soft carry case and an instruction booklet. The stand holder was cleverly designed with soft plastic ribs on the interior to prevent the mic from slipping—a smart move on the part of Shure's engineers as the PGA181 weighs in at 13.5 ounces. The PGA181's element is an electret condenser requiring 48-volt phantom power. Frequency response is specified as 50 to 20,000 Hz ( $\pm 5$  dB), and the capsule is rated to handle SPLs up to 138 dB.

Setting up the PGA181 was about as easy as you can get, but I'll get my one gripe out of the way now: Because the PGA181 is side-address, its front is indicated with a cardioid graphic that is nearly impossible to see under normal lighting. I found it easier to remember that the side of the grille with the screws was the front.

I used the PGA181s live and in the studio for a wide variety of instruments and vocals. To get a feel for the sonic signature of the PGA181s, I started by connecting them to a Grace 201 preamplifier, a preamp that I know well for its transparency and extended frequency response at both ends of the spectrum. I placed the PGA181s in a spaced pair roughly four feet apart, six feet high over a drum kit. The recording was very natural and well balanced with a faithful sense of the room sound. Cymbals were clear without being splashy or spitty and, although the PGA181s were not super-extended on the bottom, kick and toms were well represented. When I tried a similar arrangement live, I was pleasantly surprised at the pattern control of the PGA181. In spite of the fact that there was quite a bit happen-



The PGA181 weighs just 13.5 ounces and requires 48-volt phantom power.

ing on stage (two guitars, bass, keys and vocals), the microphones picked up a minimal amount of bleed from the other instruments.

### VERSATILE OPERATOR

While auditioning the PGA181s on drums, I also tried them close-up on the kick, snare and toms. The microphone easily handled the SPL when placed in front of a kick drum, but the resultant sound was a bit on the rubbery side. As an "out" kick mic, the PGA181 fared a bit better, reducing the rubbery-ness of the close position and delivering more smack in the upper midrange—but let's say that kick is not a great strength of this mic, nor was it meant to be. When used close-up on toms, the PGA181s absolutely slammed. Rack and floor toms had just the right amount of attack from stick on the head to give them presence, plus a fat, round bottom end and a really nice "dooooom" on the decay. Close-up on a snare drum, the PGA181 avoided the usual splashy condenser mic leakage from the hi-hat, behaving more like a dynamic mic and sounding a hair thinner than, say, a Shure SM57 or Audix i5.

Next it was time to try the PGA181 on a solo violin, this time plugged into an Avalon AD2022 pre-amp. I placed the PGA181 about 18 inches over the

violinist's shoulder (roughly 5.5 feet high) pointing down toward the body of the instrument and slightly off-axis. The overall tone was very natural, though there was a hint of "boxiness" to the body of the violin and a bit more bow "scrape" than I'd care to hear. A few dB of EQ (cut) centered at 5 kHz made this disappear.

Used on a session for electric guitar, the PGA181 excelled. The guitarist was playing a Fender Strat through an old Acoustic G120 solid-state guitar amplifier. I placed the PGA181 four inches from the grille, halfway between the dust cap and the edge of one of the

### TRY THIS

The Shure PGA181 makes an excellent microphone for recording acoustic guitar. Start with the microphone placed approximately one foot to 18 inches from the body of the guitar, directly facing where the neck meets the body. If the guitar sounds thin and requires more body, aim the microphone slightly toward the sound hole; if it requires less low end, aim the mic more toward the fretboard. Some large body acoustic guitars may produce excessive low end when close-miked. If that is the case, then moving the PGA181 back to a distance of 24 to 30 inches can help reduce proximity effect, and tighten up the bottom.



12-inch speakers, about 30 degrees off-axis. The guitar player set the amp for just a bit of crunch when he played louder passages, which the PGA181 translated very well without harshness. Low notes were round and full without sounding sloppy, and on a few sections when he played a slide, the recording sounded beautiful. I'm not a big fan of condenser mics on guitar amps, but this was a welcome exception.

I then tried the PGA181 on a Taylor acoustic guitar with the same Avalon AD2022 mic preamp (see the "Try This" sidebar for details on microphone placement). The AD2022 has a switch that changes the input impedance between several values as a means of matching impedance to the microphone, and also as a way to color the response. Tonal differences between the impedance settings were subtle, but I felt that the PGA181 sounded best for acoustic guitar on the "Mic" setting. Signal level differences were more pronounced, with the PGA181's level varying roughly 6 to 8 dB across the range of input impedance settings—the lowest output level resulting when the AD2022 was set to 50 ohms, and the highest output when set to "Mic." This is typical of what happens when the input impedance is changed.

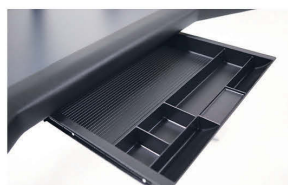
Because the timbre of the mic remained fairly consistent regardless of preamp impedance, I think it's safe to say that the PGA181's character will remain consistent when used with a variety of mic preamps. When the guitar was fingerpicked very softly, the PGA181 delivered crystal clear reproduction of fingernails on strings, though it lacked that sense of "air" produced by more expensive condenser microphones. I've noticed that the self-noise of some condenser microphones becomes apparent when recording quiet

guitar tracks, but not so with the PGA181. Its self-noise was never evident. One thing to be aware of when considering the PGA181 is that your mic preamp needs to have a highpass filter because the microphone can transmit mechanical noise from a mic stand or even through movement of the cable.

Recording male lead vocals on a rock song with the Shure PGA181 proved interesting. It might not be the most flattering microphone for male vocals, especially when used at a distance of more than a foot. Proximity effect is subtle and "blooms" when the singer moved to within about 4 inches of the mic, but even at that distance the proximity effect is not overbearing. The singer didn't love the way his voice sounded (how unusual). He felt that there was a bit of a peak in the midrange that made him sound nasal-y, but I felt that same characteristic helped his lead vocal track easily sit in front of a very busy mix. It also helped the vocal track stand up to some fairly aggressive compression that was added during both the tracking and mixing processes.

### ALL-AROUND GREAT VALUE

One of the questions I hear most frequently from my audio students is: "I'm on a tight budget, and I need a pair of condenser microphones. What should I buy?" Given the general sound quality level (or lack thereof) exhibited by most inexpensive condenser mics, my response is often, "Don't waste your money buying something that's going in the garbage in a few years. Save up for a good pair." Now I have a more realistic answer for them: "Get a pair of Shure PGA181s. You won't regret it." The PGA181 is an excellent all-around microphone that is so reasonably priced, it's a no-brainer. ■



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## RADIAL EXTC AND TOSSEVER 500 SERIES UNITS

### Guitar Effects Send/Return and Frequency Divider

I love it when gear makes me think in new ways. The 500 Series Radial Tossover and EXTC do just that by offering HPF and LPF splitting of a track and the ability to port +4dBu audio to and from unbalanced, instrument-level effects, also known as guitar pedals. While these two can be used separately, in the spirit of NAMM and alignment with our guitar pedal roundup in this issue, I'm pairing them together and aiming them toward new sonic horizons. For this review, I had a Tossover, two EXTCs, a Radial Vienna Chorus, Tonebone Trimode tube distortion and other effects pedals from the Blackbird Studio collection.

Radial's Tossover is a variable frequency divider—it splits a signal into highpass and lowpass filtered stems that can be sent to two separate outs, provided you have a Radial 500 Series rack unit with the Omniport feature. Front panel controls include gain, filter sweep (140 to 7k Hz and 80 to 4k Hz), filter slope (12, 18, and 24 dB/octave), on/off button, bandpass button, and a rear-mounted slider switch for choosing which filter leaves the output of a standard (non-Radial) 500 Series rack. However, if you use a Radial Workhorse with an Omniport, then you get both HPF and LPF outputs separately—one from the XLR out, and the other out of the balanced, TRS Omniport out at the back of the unit.

The EXTC provides a transformer-balanced send/receive to ¼-inch, TS (unbalanced) pedals like a wah-wah, distortion, phaser—you name it. Front panel controls include send and receive gain, polarity flip, wet/dry balance, send/receive I/O, and an Omni Insert button allowing access to pro level gear from the rear of a Radial Workhorse 500 Series host unit.

#### MIX AND MASH IT UP

As this review is a mash-up of both units, I'll explain my signal flow. In my Radial Six Pack host unit, I mounted the Tossover in the first slot, and then the two EXTCs followed. This way I could use the Feed button on the back of the first slot's output to send my HPF split of the Tossover to the first EXTC without using a cable. I fed the LPF split from the Tossover's Omniport



The Radial EXTC offers a way to send balanced, +4dBu audio to guitar effects and back.

out to the second EXTC's XLR input by using a TRS (M) to XLR (M) cable at the back of the unit. This arrangement kept cable clutter manageable, especially considering that I was going to be patching various guitar pedals into the front of the EXTCs. Of course, you can use these units in the traditional way, going to and from a patch bay from your DAW, but for this review I had them strung together so I could quickly jump between setups.

My first step was to take a mult of my recorded bass track, patch it to the Tossover, then use the highpass and lowpass filter optionally to carve up the track and send it to a couple of pedals. While the sky may not be the limit here, it certainly gets you thinking in exciting ways about how to take the bass in

new directions. I first sent just the low end of the bass at 24 dB/octave rolled off above 140 Hz to the Tonebone while leaving the high end completely open. This arrangement offered a dark distortion that drove the track nicely when mixed with the untouched midrange and high-midrange. I mixed that in parallel with the existing bass that I warmed with an EQ bump at 100 Hz using the Bettermaker 502P EQ. The Bettermaker's Pultec-style EQ at the bottom paired with the grungy grind of the Tonebone made for a unique recipe of bass sounds, all from a single track recorded from a Rupert Neve DI box.

#### PRODUCT SUMMARY

**COMPANY:** Radial Engineering

**PRODUCT:** Tossover

**WEBSITE:** Radialeng.com

**PRICE:** \$299.99

**PROS:** Amplitude and frequency split controls

**CONS:** Frequency split choice for non-Radial host on rear of unit

#### TRY THIS

Take a vocal track from your DAW, send it to the Tossover and split it high and low. Take the LPF half of the signal and feed it to a delay such as the Eventide DDL-500. Run the delay back to your mix with the other split (HPF) from the Tossover going to another delay. Vary the delay times slightly and listen to the complexity of the result. You can widen the vocal slightly with 60ms and 90ms delay times or widen it more by altering the delays farther apart. Add some distortion, feedback and LPF with the DDL-500 and you've got something you've never heard before.





The Toss Over is a sophisticated HPF/LPF splitter allowing two outs when using Radial host 500 rack units.

## PRODUCT SUMMARY

**COMPANY:** Radial Engineering

**PRODUCT:** EXTC

**WEBSITE:** radialeng.com

**PRICE:** \$299.99

**PROS:** Polarity switch controls and transformer balanced outs

**CONS:** You'll want at least two

## TRY THIS

When using the EXTC, you can gang effects just like a guitar player. Send your signal from the out of the EXTC to the first pedal, and then a second. Then feed the pedals to the EXTC's return. Once you're back to the EXTC, send your effected track to a Toss Over, split it high and low and heavily compress one of the feeds; experiment with what sounds better when crushed, HPF or LPF. This way you can turn a potentially one-dimensional effected track into something unique.

Once I got my head around the possibilities, I started experimenting with some odd splits from other tracks. One thing I'll do when recording vocals is put up two mics side by side, a traditional vocal mic like a U 47 or even an SM7, and right next to it, a Shure 520DX Green Bullet. I'll send the "clean" mic directly to a preamp, compressor, then Pro Tools, but the Bullet goes to a guitar amp that is recorded through another mic to another chain that ends up alongside the clean signal in the mix. But if you didn't happen to do that, you can make a nice representation of that with the Toss Over/EXTC combo. What I like about adding the filtering is that you can experiment with the range of distortion after the fact.

The setup is similar to the arrangement I used with the bass. I sent the vocal to the Toss Over, arranged the filter in the bandpass mode, so the high and low was scooped. I then sent this to a single EXTC and then an Earthquaker Devices Hoof fuzz pedal. I played with various settings until the vocal was mangled, then mixed it back with the original track in Pro Tools, which I had compressed with a UAD 1176 plug-in. While it wasn't exactly a Fender Vibrolux, the fuzz broke up the vocal in a way that worked very well when tucked in with the clean, original track.

Next, I experimented with chorded and picked guitar tracks, splitting them up, splitting them to a chorus and compressor, fuzz and chorus, compressor and phaser; it's never-ending. As I said at the start, having these units in your rack gets you thinking in new ways, such as splitting up a track high and low, then treating them as separates to be mixed back 100 percent, or blended in parallel with unaffected tracks. The Radial EXTC and Toss Over are two great tools that won't break the bank, and they give you a wide range of options for adding interesting and affordable guitar effects into your mixing and tracking workflow. ■

# PRO ON-THE-GO

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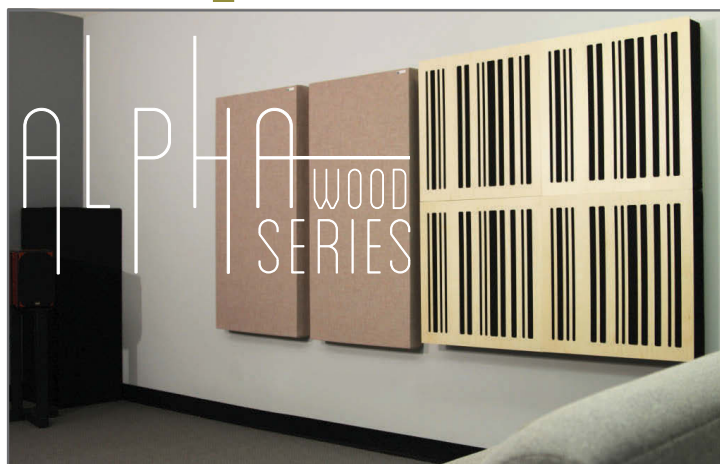
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Photo by Peter Ellenby

"Last year Tiny Telephone partnered with Minna Choi and her Magik\*Magik Orchestra, a modular group of symphonic players that can be ordered up as needed, from a single bass clarinet, to a 60-piece ensemble.

The enormous amount of string and orchestral work we started doing revealed startling flaws in our vintage mic collection: between problems of self-noise, variations within pairs, and issues of fidelity, we just couldn't rely on 60 year-old microphones to get us through a live chamber ensemble.

Then I discovered Josephson Engineering. I was blown away. It was like summer love. After a decade of collecting tube mics, I quickly auctioned them off and bought everything Josephson Engineering made."

- John Vanderslice  
(Owner, Tiny Telephone - recording studio)



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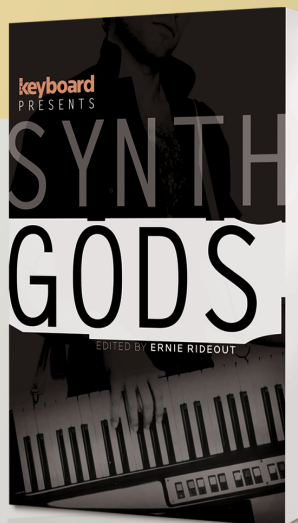
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## The New High End



By Kevin Becka

I'm a tech-loving geek—my ceiling fan talks to my thermostat and coordinates my house temp. But high-end tech doesn't need to be that crazy, or expensive. Take digital recording, for example: You can use plug-ins for all kinds of great sounding effects, EQ, compression and more. They are affordable, easy to use and recall, and they dominate processing and composition inside the box.

But new generations of writers, producers and engineers want more, and different. I see it all the time in my teaching gig. The bands that come in want to play live, rarely bringing pre-production tracks made inside a DAW. On the engineering side, students drool over real Fairchilds, 480Ls, 4038s, U 47s, 251s, and the newer high-end originals and emulations of vintage hardware from Manley, Chandler, Mercury, Retro Instruments and others. And while they appreciate the history and love the sonic benefits of all this great gear, few can afford these analog gems.

Enter the new, reasonably priced, and simpler high end—guitar pedals for one, which can easily be integrated into a desktop studio's workflow. In putting this month's roundup of guitar pedals together (see p. 50), I found some versatile and sophisticated products. For under \$220 you can get the Wampler Faux Tape Echo. It's an analog signal path with digitally created delays. It's got all the basics including tap tempo, a LPF to shape the delay tone, and other tweaks named movement and sway that emulates the random modulation you'd get from a tape machine. If that's not real enough for you, check out the T-Rex Replicator analog tape delay (\$899). It's handmade in Denmark and uses real tape (gasp!) to create its delays. Features include two heads, tap tempo, saturation, feedback, up to 3 seconds of delay and tape modulation (chorus); and it's powered at 24VDC, which provides more than +20dBu of headroom, in a guitar pedal!

My current favorite distortion pedal is the EarthQuaker Devices Hoof (\$165). It offers some excellent controls, including a high/low tilt EQ, mid-band boost and cut, Fuzz boost/cut, and level. And it sounds great pretty much however you set it. It's just a matter of whether you like the tone for your application. For the price, it's a must-have if you're looking for an easy way to bring flavor to a bass, guitar or even a vocal. The Rainbow Machine (\$225), also from

EarthQuaker, takes you back to a time when sending BGVs or a guitar through a Leslie was cool. You can quickly leave the planet with some of the settings, but with a bit of tweaking, you can get add something beautiful and unique to your tracks. The RM's controls include Pitch (with an input for an expression pedal), controls for the primary and secondary pitches, lag control between the dry and wet signals, and "Magic," which is explained in EQ's literature as "a regeneration control that creates aliasing between a mix of the primary and secondary functions feeding back against each other."

If you're looking for 500 Series magic, check out the Eventide DDL 500 (\$899). As you'd expect from the company that has dominated studio effects for decades, this unit re-defines the 500 Series delay. I've been playing with this one for a while now, and it never

fails to impress me. All the sound shaping takes place in the analog domain; the chips are there just for the delay. Features include the basics like tap tempo and feedback, as well as GUI treats like coarse and fine rotary controls (press and turn for coarse), and a remote input so that short delays can be used for filtering and flanging effects. Other goodies include 20dB of boost, soft, analog clipping, HPF, Infinite delay, delay times up to 10 seconds (192 kHz), and 60 seconds (12

kHz), adjustment of delays from note values, and a relay bypass.

Another impressive 500 Series unit that takes it to the next level is the Sonic Farm Silkworm Mic Pre/DI. It sounds great and squeezes a lot into narrow vertical space. You've got gain and a ¼-inch input, plus polarity, phantom power, and mic/instrument switches. Add solid-state or transformer drive signal paths, a High, Low and Medium gain switch, Vibe settings that offer smooth, present, or resonant sonic options, and you have a unique preamp that goes where others seldom do. I've used the Silkworm on bass, guitar and vocals, and you can get a lot of sonic variances very easily.

So, while I'm writing this, we were having an unusually warm Nashville day in December. My network went down, and my thermostat and fan went offline. To get some fresh air in the house, I just opened the door. High-end tech is great, but sometimes you just need to downscale and get back to the good old/new stuff that works—like all this great and affordable gear that brings new sound tools to musical content creators who are yearning to be unique and break the mold. ■

***Students drool over real Fairchilds, 480Ls, 4038s, U 47s, 251s, and the newer high-end originals and emulations...***





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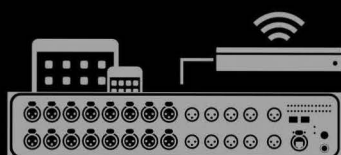
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