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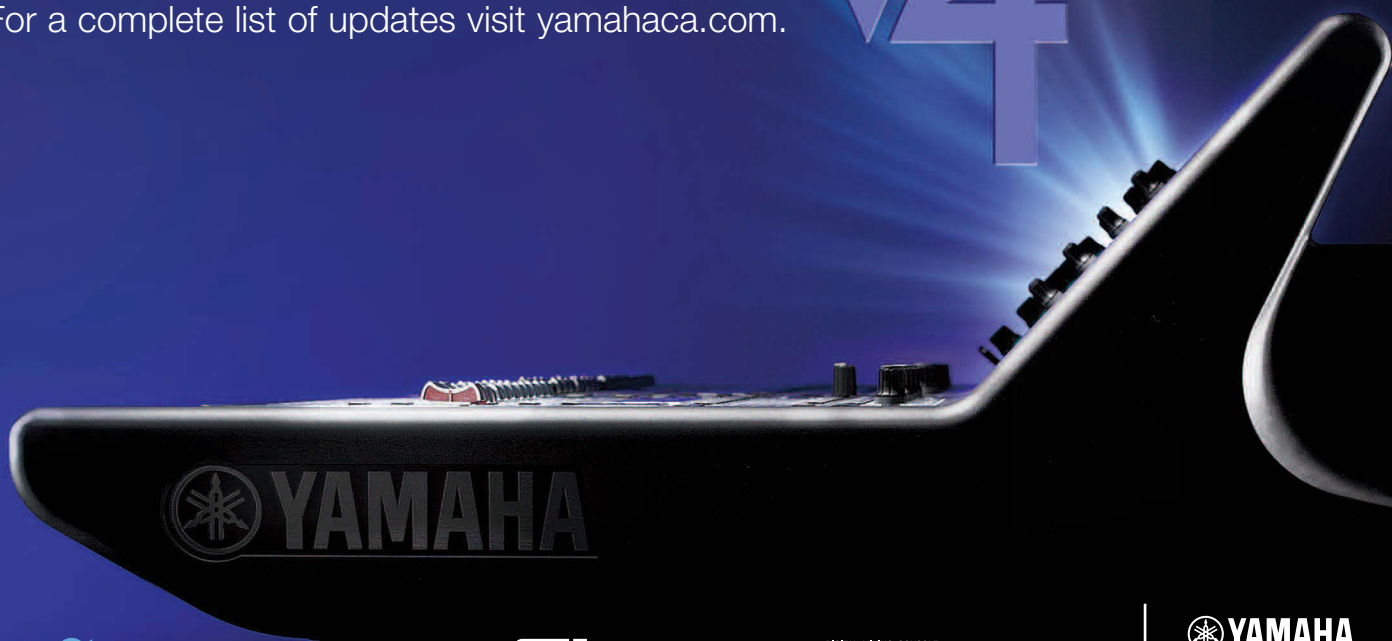


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**On the Cover:** ELBO Studios, the new home base for composer Theodore Shapiro, was designed by Peter Gruencisen of nonzero|architecture. **Photo:** Juergen Nogai Photography.

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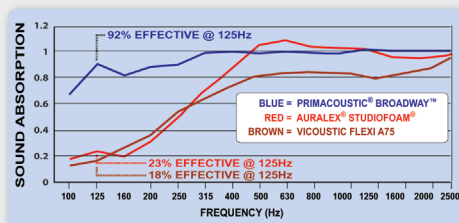
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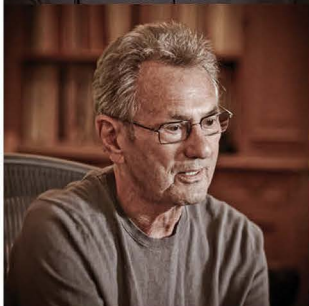
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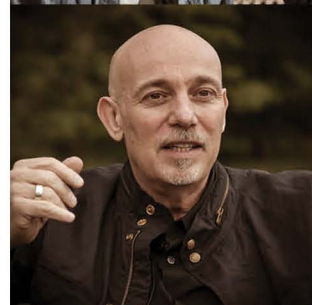
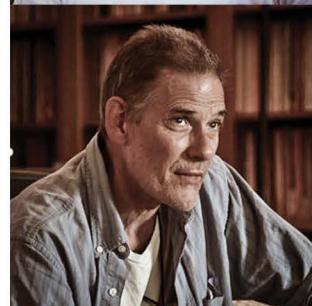
# MIX WITH THE MASTERS

The Mix With The Masters Program offers the unique opportunity to work closely with the world's top music mixers, producers and engineers and to improve one's skills in music production. Since its successful debut in 2010, it has hosted over 900 participants and 70 seminars.

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

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

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



## UPCOMING 2016 SEMINARS

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ANDREW SCHEPS // JULY 29-AUG 4

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## From the Editor

---

### SFMOMA: SOUND IN A SPACE

I spent more time in museums, and thinking about museums, over the past month than I typically do. First, there was a press opening in advance of the public opening of the stunning new SFMOMA, following its three-year, 10-story, triple-the-square-footage expansion, making it the largest institution devoted to modern art in North America. Pop art, op art, photography, sculpture and everything you might expect in a thoroughly open and airy series of gallery and public spaces.

Then the following week I was off to Boulder, Colo., for my daughter Jesse's graduation with a master's of science degree in anthropology/museum studies. The ceremony took place amid the famed Triceratops skull and dinosaur fossils in a room of the Colorado Museum of Natural History, not far from the newly discovered Mahaffey Cache of Clovis man and the interactive, family-friendly room of Butterflies. Downstairs is my daughter's own curated display of tiny baskets of the Northern California tribes. Artifacts and art and education and everything else you might expect in a more tightly packed and closed series of gallery and public spaces.

Two very different experiences, in two very different environments, each fulfilling their purpose and intent. Now back to SFMOMA.

The scope and scale of the new addition is both aesthetically and functionally magnificent. It was designed by the internationally acclaimed Norwegian firm Snøhetta, and you can read all about it in any number of stories; there was no lack of advance press. But we were there as guests of Meyer Sound, to view the audio-video infrastructure that feed its theater, performance and educational spaces. Sound and vision, and the way the public interacts with them, were part of the design from the beginning.

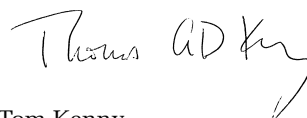
The 275-seat Phyllis Wattis Theater, with lead design by Duncan Ballash of local firm EHDD, incorporates three different Meyer Sound playback systems—Constellation, Acheron cinema, and full sound reinforcement P.A.—so that audio for any type of program can be optimized for that audience. That's not simple to implement. The theater is not large; there are a lot of speakers and microphones in the walls and ceilings. But there will be lectures, film screenings, musical performances, and they're still figuring

out what else. Sound was a priority. And Meyer Sound certainly has a reputation for bringing quality audio to high-end event spaces, from aquariums and exploratoriums to concert halls and, of course, studios.

There is much more at SFMOMA, including a Meyer-equipped White Box multipurpose performance space, the Koret K-12 Education Center, and a CAL columnar line array for the massive glass and stone lobby. Those are the dedicated sound spaces, the details of which are common throughout our industry. But there's also the idea of sound in a space, the way that architects think, as I've learned over the years in numerous talks with studio designers and found reinforced in a brief discussion with Ballash. It's not just the absorption and diffusion and isolation that they deal with; it's the way that sound interacts with the audience, in every space throughout the building, from the murmurs in the galleries to the string quartet on stage.

This is what the talented studio designers featured in this month's issue of *Mix* do: They work with sound in a space. Whether it's a two-story tracking room for a composer who needs to record string sections, or a compact, gear-infused Atmos production room for deadmau5, each is about the right sound for the right space. The audience, in this case, is the engineer, producer and musician. For each and every one of them, it's about how they work with sound, in their space, to make great music.

The interaction of sound and music in a studio is not all that different from the interaction of sound and audio in the real world. It is more controlled, built to a higher standard, tailored in general to be flat across all frequencies—but the concept and approach is the same as when you walk through a museum, visit a concert hall or take in a Broadway show: It's all about working with sound in a space.



Tom Kenny,  
Editor

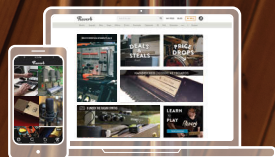


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# Grammy Museum Mississippi Opens

By Jim Beaugez



When The Recording Academy's Grammy Museum decided to extend its educational mission outside of its Los Angeles home base, it aimed straight for a place that many consider to be the heart of American music: the Mississippi Delta.

Those vast and fertile lowlands gave rise to bluesmen from Robert Johnson to B.B. King, who in turn inspired and

informed much of the popular music that defined the 20th century—especially the rock 'n' roll explosion that began in the 1950s and '60s.

On April 30, recording engineer Geoff Emerick represented that movement at the museum's inaugural public presentation with a discussion of the recording techniques that helped cement The Beatles as pop music's original innovators.

The event was held in the intimate Sanders Soundstage at the new museum's Delta State University digs in Cleveland, Miss. Jon Hornyak, host and senior executive director of The Recording Academy's Memphis chapter, walked Emerick through his accomplishments with The Beatles and beyond, including landmarks *Revolver*, *Sgt. Pepper's Lonely Hearts Club Band* and *Abbey Road*.

"The songs of Chuck Berry, Carl Perkins, Little Richard and Motown—artists that had a major impact on The Beatles—were based on the blues," Hornyak says. "And of course, Elvis was one of The Beatles' musical idols. I think it was John who said, 'Without Elvis there would be no Beatles.'"

The Grammy Museum Mississippi is closely aligned with the Delta Music Institute at the university, where aspiring industry pros study audio recording and the entertainment industry. The pairing provides students with opportunities to hone their crafts in real-world settings such as Emerick's talk, where they operated the audio and lighting systems. For the past five years, students have also performed at Mississippi Night at L.A. Live during Grammy Week. The partnership is a two-way street, with many participating artists giving back to L.A. schools.

"Mississippi artists from the North Mississippi Allstars to Bobby Rush to Cedric Burnside have performed [at Mississippi Night]," says Hornyak, "but they also do a class for local students. It enables students there to engage blues artists, an opportunity they wouldn't normally have in Los Angeles."

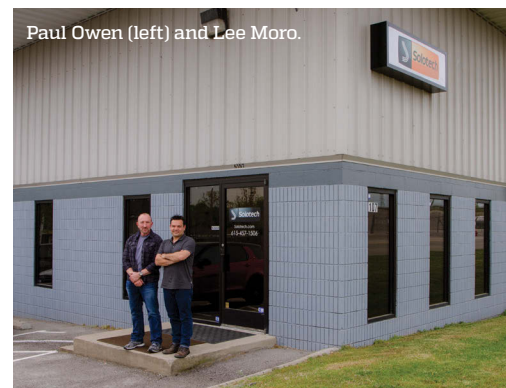
Although the museum's educational mission is modeled after the original museum in L.A., how they pull it off is unique. Grammy Museum Mississippi aims to reach the next generation of musicians and industry professionals with interactive exhibits such as a songwriting pod with Keb' Mo'. Students can interact virtually with the blues artist by dragging and dropping pre-recorded segments of music and lyrics to create a song.

"They write the song and then send it to the producers' pod, where they add backline and different instruments," says Emily Havens, executive director of the museum. "Then they can edit and produce it and have a great takeaway from the museum. We have had kids who frequent the museum every week to write songs."

A centerpiece of the museum is the Mississippi Music Table, where visitors are able to hear Mississippi-born artists while seeing the connections they have to the larger industry in an interactive, touchscreen format. Visitors can see the artists' accomplishments, as well as where they fit into the cultural and historical context.

"The Mississippi Delta is widely acknowledged as the birthplace of America's music," says Hornyak. "The Delta is the heart of the blues for musicians from many genres and fans from around the world." ■

# Solotech Opens Office in Nashville



Solotech recently opened an office in Nashville. Led by Paul Owen, the office will develop new business opportunities in international touring and special events. In addition to serving its existing customers, the Solotech Nashville office offers turnkey solutions to international tours and special events customers, specifically in the rental of audio, lighting, video and rigging equipment.

"Nashville is the Music City," says Martin Chouinard, Executive Vice President of Solotech's rental division. "We have several clients in this city and it was important for us to have a storefront there, to be closer to their reality."

Owen acts as Managing Director of the Nashville Solotech office. Owen has more than 35 years of experience in touring. During his career, he worked as vice president of Thunder Audio, and monitor engineer and production manager.

"I am delighted to have the opportunity to work for a company of this size," Owen says. "I have always admired Solotech's work, and I intend to lead the Nashville office towards unprecedented success."

Owen will work jointly with Lee Moro, who joined Solotech in September 2014 as Senior Project Director for tours and special events. Moro has been based in Nashville for the past 10 years and has worked with many renowned international touring artists. Diana Mariotti is also part of the Solotech team in Nashville, as an administrative assistant.

"Paul and I bring years and years of real-world experience to our clients," Moro says. "We have been in their shoes and we know what they expect. That's why we make sure we have the best staff. Our people are some of the best on the market. They are proud and take their job seriously. They work together and are passionate about what they do." ■



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The month of June kicks off with InfoComm 2016, which takes place June 4-10 (exhibits take place from June 8-10) at the Las Vegas Convention Center.

InfoComm 2016 focuses on the professional A/V industry and reports more than 950 exhibitors, thousands of products, and 40,000 attendees from more than 100 countries. The InfoComm show is a once-a-year opportunity for attendees to see the latest audio-visual technology, learn skills that will advance careers, and expand professional networks.

The show floor pavilions will offer important audio, digital signage, unified communications and collaboration, live events and security solutions. In terms of pro audio, InfoComm will present more than 250 leading exhibitors of all facets of audio technology solutions for both live events and fixed installations.

In the Audio Pavilion, products on exhibit will include loudspeakers, amplifiers, mixers, microphones, headphones, headsets, signal processing, wireless equipment and sound reinforcement systems. Plus, dedicated Audio Demo Rooms, located in the North Hall of the Convention Center, are open Tuesday through Friday, where attendees can hear the latest products from exhibiting audio manufacturers. Manufacturers that are hosting Audio Demo Rooms include Bosch (Electro-Voice), Community, d&b audiotechnik, D.A.S. Audio, Danley Sound Labs, Harman, L-Acoustics, Martin

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have the opportunity to mix sound for a live band onstage, attend free sessions in InfoComm's microphone and lighting console labs, and get the latest tips on rigging safety from IATSE.

Register for the new Seminar Package to attend your choice of more than 80 InfoComm University seminars and workshops on Wednesday, Thursday and Friday. The package is \$189 for InfoComm International members (\$279 for non-members). Also new this year, the Internet of Things (IoT) Education Program and Pavilion will examine the implications and opportunities of IoT for the A/V industry. Additionally, Live, Loud and Local comes to InfoComm 2016. This networking event makes a stop in Las Vegas at the Cosmopolitan for a behind-the-scenes look at their new A/V installation, followed by cocktails.

Be sure to keep up with new product announcements and all relevant news about InfoComm by reading the 2016 InfoComm Show Daily, published by NewBay Media.

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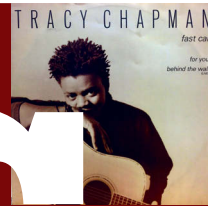
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# Music



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Photo: Joseph Culicco

## FITZ AND THE TANTRUMS

Capturing a Signature Sound, Starting With Drums By Lily Moayeri

**F**or Fitz and the Tantrums' self-titled third album, Michael "Fitz" Fitzpatrick's songwriting and recording experience was nothing like the Los Angeles group's first two full-lengths. The recording processes were very different from each other the first two times around, but the songwriting, albeit with contrasting central instruments, was not that far removed from one to the next. Fitzpatrick expected more or less the same experience for *Fitz and the Tantrums*, but was instead met with a series of failed attempts.

"We got off of however many years of

touring after *Pickin' Up the Pieces*, took literally one day off and started recording *More Than Just A Dream*," says Fitzpatrick, sitting in his expansive home studio, which has the luxury of not only housing his famed Conn organ and his upright piano, but also myriad synthesizers, outboard compressors and EQs, as well as drum machines and, of course, his computer; there's also a comfortable sectional sofa.

"We had this crazy output where we did 35 songs in 40 days, went into a week of pre-production, then in with Tony Hoffer for three weeks and the album was done," he recalls.

"Then we were on the road for three years. I had to have vocal surgery because of polyps I had developed from crazy overuse. When I healed from that, I thought, 'We'll just do what we did last time.' But it was a lot harder. I had a clearer sense of what progression was going to look like from album one to album two. On album three, I didn't know what that was going to be. I just knew my end goal is always to be evolving."

Songwriter Sam Hollander (Panic! at the Disco, Katy Perry, Pentatonix) proved to be Fitzpatrick's musical soulmate. At Hollander's home studio, not a huge leap from Fitzpatrick's

Photo: Lindsey Bynum

Producer Jesse Shaktin



setup, Hollander and his assistant, Grant Michaels, provided Fitzpatrick with a fresh space and a new batch of sounds. They meshed well with his, to quote, “frenetic, sloppy, and raw” style of working, and in the process, got his confidence back.

The first song they successfully completed is the sticky single and album opener, “Handclap,” which signals yet another change in direction for the band. With each album, the six-piece jumps forward 30 years in musical time. The ’50s Motown-inspired sound of their debut morphed into the ’80s R&B flavor of its successor, and now, *Fitz and the Tantrums* shifts into the present with a sound that is very characteristic of today—albeit, with nods to the past. Bright vocals and modern phrasing lead the songs that feature as much studio-generated sounds as they do live instruments. The album reaches as far as the reggae vibes of “Roll Up,” the energizing classic Hall and Oates-influenced “Get Right Back,” and the stuttering “Burn It Down,” which is equal parts pop and ballad.

Instead of an organic instrument, which drove the first two albums, it’s programmed beats that provide both the starting point and direction of *Fitz and the Tantrums*. Fitzpatrick flips between Native Instruments Maschine and XLN Audio Addictive Drums 2. The former has similar functionality (with infinitely more sounds) to an MPC, which Fitzpatrick had become comfortable with over the years, while the latter has every kind of drum kit and drum machine recorded in the best drum room possible onto 2-inch tape with near- and far-field miking. This is a dream for Fitzpatrick who is all about mixing an 808 drum kick, for instance, with a dry ’60s snare to create what he calls “a weird Frankenstein drum sound.” The group’s drummer, John Wicks, is also a fan of programmed drums and works with the medium that best serves the song.

The group spent some days recording drums and bass at Sunset Sound’s Studio A, where the custom API console was a huge attraction. Engineer Darrell Thorp had a Neumann U 47 FET on the kick, adding a

Yamaha NS10 monitor to create a subkick. Shure SM57s are on the top and bottom of the snare, with Neumann KM 54 on the hi-hat, and AKG C414s on the tom and on the floor. Overhead is a mono U 47 FET with 1176 on the insert, and Royer R-121 ribbons on the hi-hat and floor.

To keep the process fresh, Fitzpatrick employs new plug-ins, particular favorites being the Valhalla for its lengthy reverbs, VPS Phalanx for its modification capabilities, and Chris Lord-Alge’s vocal one for its speediness. Says Fitz, “Prior to this record, I would always open up a vocal chain, put a limiter, a compressor, an EQ, reverb, delay. CLA has all those within one plug-in. I adjust the levels and it became a huge part of what my vocal sounds like on this record, where there are a lot of top frequencies coming through. We went for a much more brilliant vocal treatment than in the past. CLA was an immediate, creative tool with an incredibly present sound and I wouldn’t have to work for it.”

For Noelle Scaggs’ vocals, Fitzpatrick uses a chain unique to her, particularly in terms of the compression rate and EQ. Additionally, Tony Maserati Waves plug-ins are used for Scaggs as they sit better with her vocals. Both Scaggs’ and Fitzpatrick’s vocals are recorded at his home studio, where he now has a new Neumann U 87 Ai Shockmount Set Z microphone with box and a full rack that includes a Teletronix tube compressor and BAE 1073 DMP single-channel EQ. Sessions are kept in MIDI for as long as possible. This way Fitzpatrick can change tempos and keys repeatedly until he finds the perfect place where his and Scaggs’ voices work best. When not in MIDI, the entire song had to be rerecorded, which on “A Place For Us,” happened three different times.

“I tried to use my voice as another instrument, chopped in Pro Tools and then pitch-shifted to sound robotic and weird,” Fitzpatrick says. “Or I would record my voice doing a ‘bomp,’ load it into Phalanx and play it as a keyboard sound. It has its own reverb, compressor, delay and limiter inside, plus a lot of amazing presets. To create some really unique keyboard sounds for this record, I chop my vocal, sample that, then play it and run it through a bunch of internal effects, then add another compressor or delay on top of it. That way I have a signature sound that nobody else has.”

This key element is one of the reasons Jesse Shaktin (Sia, Charlie Puth) is producer of eight of the 11 songs on *Fitz and the Tantrums*. Shaktin, who has been collecting sounds since his teens, has a library that appears unrivaled. This is developed with Phalanx, Logic EXS24 and iZotope Iris, as well as Spectrasonics Omnisphere, Native Instruments Massive, LennarDigital Sylenth, and NI Reaktor blocks. With what Fitzpatrick brought to him, Shaktin did layering of more sounds. Says Fitzpatrick, “On some songs the verse has four snares, two handclaps, three finger snaps, all blended, where we’ve changed the levels to find this truly unique sound for the backbeat.”

“For me, one way to make programmed drums not feel boring and repetitive is to add texture,” says Shaktin, also from a home studio similar to Fitzpatrick’s and Hollander’s. “There is the main snare made by two different snares [or three or four]. There is a subtle layer than happens on the second, or every eighth hit, to have emphasis and texture here and there. Some of them are reverb tail ambient textures, some of them are driving—to keep the soundscape moving. Oftentimes, it’s a few different types of textures that go on the backbeat. On an instrumental part, that could be a line from a Sylenth patch, but if that is not appropriate for a guitar or a horn, we layer it with something more pluck-y. If it’s not the right thing, we can add and subtract different textures and sounds. It’s a few layers, but it sounds like one part.” ■





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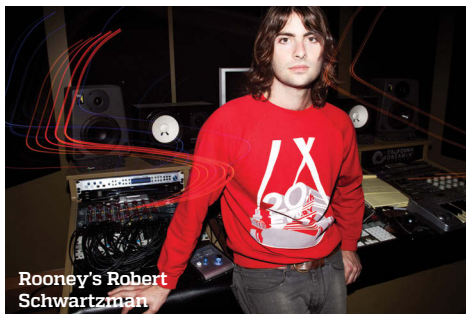
## ROONEY, 'WASHED AWAY'

Robert Schwartzman mixed and mastered the newest Rooney album, *Washed Away*, three times with three mastering engineers. The final version, mixed by Dave Trumfio at Kingsize Soundlabs, is first rebalanced with him adjusting Schwartzman's plug-ins, then run through Trumfio's outboard gear then printed into new Pro Tools sessions.

What Schwartzman (lead vocals, guitar) comes away with is stereo stems of all the parts, which he can rework in his own studio, Beachwood Park Recording.

"A big part of mixing *Washed Away* was letting it breathe for a long time and going back to it after many months, rethinking it and challenging it," says Schwartzman, who has a Quad Eight Pacific console he runs the mix through in order to give it color on the final output.

"I have to rebalance when I'm mixing in the box because things are going to be louder and hit the master bus harder," he says. "I have a master bus channel in my session with specific plug-ins: L3 Multimaximizer and Phoenix EQ. I'm



Rooney's Robert Schwartzman

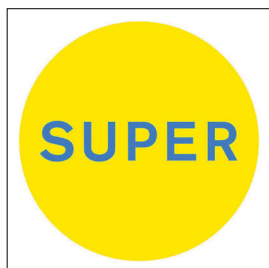
listening through the same master bus settings as I track to get a better perspective of how things will end up sounding, and constantly mixing, tweaking, and balancing before summing through the Quad Eight when I do my mixdown."

The Quad Eight changes the levels coming back into Pro Tools. Schwartzman sends it back on a new track so he can print a new stereo track, then exports it into Pro Tools through

the master bus. The level goes down a lot, adding headroom to the mixes, which gives space for the mastering engineer, Dave MacNair, to work.

Says Schwartzman of the Quad Eight, "I can hear the difference in the summing. Once I have my mix, I create 10 aux channels in stereo for the different parts. I route out of Pro Tools putting all the outputs at zero. That gives me the same mix I made in Pro Tools, but playing through the board. I do my rides and make my changes digitally because I don't have Flying Faders and I like to recall my mixes 10 times. If I want anything louder, I'll bump it in the aux channel on the send to the board."—*Lily Moayeri*

## COOL SPIN: PET SHOP BOYS, 'SUPER'



*Super* marks the second in a reported trilogy of albums the Pet Shop Boys are recording with uber-pop producer Stuart Price. Written in Berlin and London, *Super* was recorded with Price in Los Angeles. The

duo has drafted the blueprint for electronic dance pop with tremendous results. No matter what the era, Pet Shop Boys have kept their aesthetic, which lends itself to the dancefloor as much as it does to the radio.

With the dancefloor finding its way to the radio, the Pet Shop Boys are following, with predictable hands-in-the-air numbers "Pazzo!" and "Inner Sanctum." Alternatively, the storytelling nursery rhyme lyrics and bouncy synth lines of "The Pop Kids" rewinds to early '90s Italian house. When *Super* works best is when it keeps things simple. Delightful songs like the straightforward "Groovy" and playful "Undertow" reference Pet Shop Boys' own rich history, which is the best place from which the two should pillage.

All songs written by Neil Tennant/Chris Lowe, performed and programmed by Pet Shop Boys, produced and mixed by Stuart Price, engineering: Stuart Price, Pete Gleadall, additional programming: Stuart Price, additional vocals on "Undertow": Jessica Freedman, additional vocals on "Burn": Nayana Holley, mastered by Tim Young at Metropolis—*Lily Moayeri*

## WE ARE SCIENTISTS, 'HELTER SELTZER'

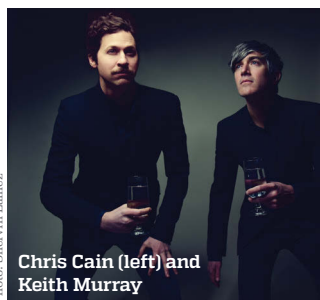
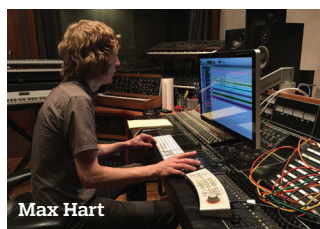


Photo: Sherwin Lainez

Chris Cain (left) and Keith Murray



Max Hart

We Are Scientists, now pared down to two core members—guitarist/vocalist Keith Murray and bassist Chris Cain—had the good fortune to have their one-time keyboard player, Max Hart, produce their fifth album, *Helter Seltzer*. Hart has spent recent years on the road with Katy Perry, as well as music directing Tegan and Sara's most recent tour, which has honed his ears and production skills, much to the benefit of *Helter Seltzer*.

Hart put together a makeshift but inclusive studio in a basement in the DUMBO neighborhood of Brooklyn, just for the recording of the album. He, Murray and Cain holed up there for a good three months making *Helter Seltzer*.

The cues for the album are taken from songs like Billy Idol's "Eyes Without a Face" and Heart's "These Dreams," where Hart uses MIDI programming in Logic for his outboard synthesizers and Pro Tools to track all the other instruments, vocals and overdubs.

Murray comes in with the songs written and pretty well demoed, but that doesn't mean they stay that way. "Classic Love," for instance, had a grunge vibe to it originally with grinding guitars, which Hart shifted into an acoustic realm—with a signature twist.

"I like to put ghostly, blown-out keyboard sounds underneath guitars to make them sound a little spookier," Hart says. "I do something I call 'a hollow lead.' It's a signal chain involving any triangle wave keyboard and distortion and reverb, and you get this strange thing with harmonics getting accentuated in weird ways. It's a fun thing to play with. Sometimes it works great. Sometimes it's horrible."

Hart has a synthesizers.com modular synthesizer he built for bass drops, white noise snare samples, lead sounds, guitar filtering, and vocal effects. With it, he makes the 808-style drops heard on "Classic Love." That, along with Roland JX-3P and Dave Smith Instruments are some of the pieces that Hart uses to create his "hollow lead." Says Hart, "I was lightly using the LFO to pitch to warble the synthesizers and make them out of tune, going for that vibe of someone putting their hand on the tape reel. If you've ever done that, you get the pitch to fluctuate."—*Lily Moayeri*





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# Classic Tracks

By Robyn Flans



## "FAST CAR" Tracy Chapman

**W**hen stars align and the right producer hears an artist, gets excited and shares a vision—even helps shape that vision—magic is often the result. It sure worked with David Kershenbaum and Tracy Chapman in 1987.

Kershenbaum says it's all about the emotional attachment a person makes to the art. And then the connection to the listener. For "Fast Car," he said, the magic appeared as a combination of the relatable lyrics and Chapman's unique voice.

"When you do it correctly, and the [the listener] makes that connection, they can tell you 20 years later who they were with, what they were wearing and when they heard the song because it's such a powerful experience," the producer says. "Out of everything I've done in my whole career, over decades, that song had the strongest emotional connection of any song I've ever done."

Kershenbaum says Chapman had been playing around the Boston area when Brian Koppelman spotted her and brought her to his father, Charles Koppelman, who signed her to a publishing deal. Kershenbaum got a call from Don Rubin, who worked with Koppelman, asking if he would be interested in hearing a singer-songwriter they were working with.

After listening to the cassette of songs, Kershenbaum went to New York to meet with Chapman. "The second day we were going to have a

meeting," he recalls. "She said, 'I have this new song I want to show you. I want to see what you think of it.' It was 'Fast Car,' but it was on a piano, nothing like the record. But I loved the song."

A couple of weeks later, Chapman flew out to Los Angeles to work at Kershenbaum's studio, Powertrax, the former Wally Heider Studio in Hollywood. Kershenbaum says he chose the musicians to work with her in a rather unorthodox way.

"I realized I wanted to do a very stripped-down, simplistic version, with her as the centerpiece, with her vocal out front," he says. "In my past experience with singer-songwriters, if they play guitar and sing, they do the rhythm and chord changes and everything along with their vocals, but when you start to add musicians, it changes it. It was critical to have the right mix of players."

Kershenbaum devised a way of finding that mix by putting Chapman's vocal and guitar on a digital multitrack tape machine and invited different configurations of players in to play the track. "I said, 'Look, you guys aren't auditioning, I'm just trying to put together the right combination for a singer-songwriter who has never played with a band before,'" he explains.

Five different bass players and five different drummers played along with her, and then for a couple of days he mixed and matched them to see what meshed the best.

"I kept doing that until I found the right combination, and that turned out to be Larry Klein, who was Joni Mitchell's producer and ex-husband, on bass, and Denny Fongheiser on drums."

They recorded live in the studio with Chapman in a vocal booth with her guitar, Klein patched directly in the control room, and Fongheiser in the big room with his drums.

"I would say 99.9 percent of the vocals were recorded live, as was her guitar," Kershenbaum says. "The combination was very comfortable for her, and luckily she could play in time because she had never worked with a band before."

Kershenbaum says that if she was nervous, she didn't show it; but she was shy. "I think a lot of that vulnerability you hear was because of that," he says. "She's a very sweet girl and wonderful person." And on that first record, he says, she mostly deferred to the wisdom of the experts. He recalls the album being completed in about four or five days, with three songs recorded per day.

"The little guitar line that starts 'Fast Car,' Tracy played that whole thing live," Kershenbaum says. "Larry and Denny wrote their own charts. Denny would write the bars and figure out what his rhythm pattern would be and when he would play it, and Larry actually wrote down chords and notes. When we did it, they would follow those charts that were written in the studio."

"With Tracy there was a lot of feeling in the guitar and vocal, so I just enhanced that with the bass and drums, but constantly kept her up front," he continues. "Throughout the whole process, I never added anything that I thought would detract from that."

He used a Neumann TLM 49 on her vocal after trying several others. He says that he did add a little reverb and delay on Chapman's vocal.



"That mic is an older vintage mic that has a characteristic of a lot of chest and upper bottom in the mic, and her voice is very rich in that area," he says. "I wanted to make sure it wasn't too bright and wasn't too thin and had a lot of body to it. I felt that would also add to the impact of what she was singing and how she was singing."

He is not sure exactly what mic he used on the guitar, but they used two. "Because I was recording the vocals live with the guitar, we put some cardboard or something on the top of the guitar in between the guitar and her voice to get the least amount of leakage possible," he says.

At the time, for Powertrax, Kershenbaum had just purchased a Mitsubishi 850 32-track 16-bit digital recorder. "It was very high-tech and cutting-edge for the time," he recalls. "The room itself had a vintage API console in it, which was from the days of Wally Heider and Hollywood Sound, so it was recorded digitally and then mixed to a digital 2-track. It was one of the early all-digital recordings. That gave it a lot of the clarity, which sounds okay today compared to other records you listen to recorded digitally."

The record company wanted the chorus to come in sooner on the single "Fast Car," and Kershenbaum tried to figure out how to do that, but to no avail.

"It had to be the way it was," he says. "And I think it actually worked to the benefit of the record because it had so much more impact than bringing it in earlier."

Part of that impact was the drum explosion on the chorus. "The way we got the drums to sound like that was with the room—it had a great sound," he remembers. "And if you notice, there's quite a bit of reverb on the drums so

that when they hit, they really have a lot of power. And then the rest of it was the way Denny played it. Kevin Smith did some wonderful recording of the drums and Denny is a genius. He didn't step on Tracy on any of the songs. He offered just the right amount of rhythmic support without getting in the way and dynamically came forward when it was his moment in the arrangement."

When it came time to mix, there was no automation back then. Kershenbaum mixed Chapman's vocal up front.

"Because I had a digital recorder and there was no loss of going to another generation like you would in analog, I mixed to 2-tracks on the digital recorder," he explains. "That allowed me to punch in the mix. So let's suppose I did the first verse and I had that over on the 2-track of the digital recorder and I thought I miswrote some vocal lines and I would like to rewrite them again on the vocal track, I could just play the track, hit record just like I would punch in an artist or musician and make my ride and punch out and it was seamless. I went through the mixes and did them that way. In the older days of analog, the only way you could do that was to mix sections to tape and then cut the tape together, but if you happened to hit a fader and the balance wasn't exactly the same between the two sections you were cutting together, it could be a nightmare."

"This was great. There was no automation, but in a sense it was kind of that way because it allowed me to do a lot of things I couldn't have done if I were just mixing from top to bottom, live to a 2-track."

Chapman's self-titled debut album went to Number One on the *Billboard* charts, with "Fast Car" hitting Number Six on the singles charts. ■



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# RETURN TO THE EIGHTIES

Marianas Trench Dives Back 30 Years to Find the Right Tones for *Astoria*

By Anthony Savona



Marianas Trench looked to the '80s and *The Goonies* for musical inspiration on their new album, *Astoria*. Pictured left to right: Ian Casselman, Matt Webb, Josh Ramsay, Mike Ayley.

The 1980s were a fantastic time for many and varied styles of music—pop deities Michael Jackson and Madonna were crowned and traditional guitar rock shared the charts with of-the-moment synth acts. It is from this wealth of material that Canadian band Marianas Trench found inspiration for their fourth album, *Astoria*, an epic production that would require three studios, the Vancouver Film Orchestra, a 10-person drum circle, and an abundance of guitars and synths all made before 1989.

Marianas Trench is made up of lead singer/guitarist Josh Ramsay, lead guitarist Matt Webb, bassist Mike Ayley and drummer Ian Casselman. The band is well-known in the Great White North for its multilayered themed albums, including *Masterpiece Theatre* (2010) and *Ever After* (2011), now joined by their 1980s/*The Goonies*-themed *Astoria*. The album was produced by Ramsay, who is best known in the States for producing and co-writing Carly Rae Jepsen's ubiquitous 2012 hit, "Call Me Maybe," earning him a Grammy nomination.

"I had thought of doing an '80s concept album, and I really liked the idea of an '80s com-

ing-of-age adventure movie as the world the album takes place in," says Ramsay, who is also the band's songwriter. "So we looked for a title that would best describe that genre." Turns out *The Goonies* 'R' good enough ("*Astoria*" itself is a reference to the town *The Goonies* takes place in, and the album artwork is filled with references to the movie).

To be clear, *Astoria* doesn't remake or borrow from '80s songs, though the productions would sound at home in the time of Max Headroom and New Coke, and also elicit those tickle-the-base-of-your-brain audio recognitions that will have you searching for verification on Spotify and the like.

For example, the guitar tone on the upbeat "Burning Up" is identical to the one used by INXS back in the day. "That guitar sound was so much more complicated than you'd think," says Ramsay. "We spent three days getting that sound because it was so important for the song. Re-amping, chorus pedals, vintage Roland Jazz Chorus amp, a Marshall amp, a Vox AC30 amp—there is so much going on to make that sound what it is."

That kind of attention to detail led the band

to three different locations for recording—The Umbrella Factory, The Benhouse (both owned by Ramsay), and The Warehouse Studio in Vancouver, owned by Bryan Adams. Most of it was done at The Benhouse, a temporary studio that came to be after Ramsay moved from his penthouse apartment, but still held the lease. He had gone through some "dark times" while living there, and, in a very *Goonies* "never-say-die" attitude, decided to use the now-empty apartment for something positive—turning the entire place into a temporary recording studio.

Ramsay brought in his Neve Sidecar and a rack with five Wunder Audio mic pre's and an Empirical Labs Distressor and Fatso Jr.—all running into Pro Tools—along with plenty of vintage guitars and amps. "We didn't use any guitars or amps that were made after the '80s," he explains. "All the guitars were my old ones, and then we used practical synths. I used an old MiniMoog, old Yamaha stuff; all the analog synths are practical and real. The only problem was that you couldn't really recall a sound, so you have to go with it as you have it. The output sounds different an hour later."

## CUE RECORDING MONTAGE

Ramsay's mother is a vocal coach, and between his impressive range and an abundance of band-provided backing vocals throughout, you can hear his passion in each tune. Using a closet for a booth at The Benhouse, all the vocals went through a vintage Neumann U 87 into a Wunder Audio pre, through the Distressor, and, finally, into Universal Audio plug-ins. "I had been talking to Bob Rock and Dave 'Rave' Ogilvie," says Ramsay, "and they said I should check out all the Universal Audio stuff, so I chatted with UA and they sent me their plug-ins, and they are so good. They are amazing, and if guys like Bob and Dave are telling you to check it out, you should probably check it out."

For the guitars, Ramsay relied on a Radial Headload guitar amp load box. "You put the out for the amps into the Headload, and you don't need a speaker cabinet," he says. "It ends



up functioning like a DI, but actually sounds good. We did all the guitars that way. You go out of the Headload, but through your normal chain, so it was amps, Headload, Neve, Fatso Jr., then into Pro Tools.”

The drums were primarily recorded at The Umbrella Factory, and a different setup was used for each song. “Because we record the songs as I am writing them, and I don’t do demos, I generally program the drums and then write to it, so I can change the part around as I want,” says Ramsay. “Once I know what the part is, we do the drums last. It is also more fun for the drummer because he is not just playing to a click track; he is playing to a whole song. Plus, once the whole song is there, I find the sound of drums really change the character of the song, so it is kind of nice to do it last so you can build the drum sound to what suits that song.

“I always record cymbals separately,” he continues. “That way you can use condenser mics on the snare and the toms, which sound huge, but you can’t do that if you record cymbals at the same time. My secret weapons on snares are a vintage Neumann KM 84 and a Sony C-48 condenser that wasn’t made for doing snares, but it has a lot of headroom, so you can stick it right on a snare drum.”

## 10 DRUMMERS OR MORE

You can’t mention drums without diving into the anthemic song “Who Do You Love?” which featured 10 drummers—including Ramsay and Caselman—set up in a circle with a Decca tree in the middle. “That was really fun,” says Ramsay. “Everything was just live. We did the beat, but then we did a whole bunch of passes where we were improvising percussion loops, and some really neat, weird things ended up happening there. And almost all of it made it into the track.

“I wanted to do a song that felt like Toto, which was a cool ’80s influence that I hadn’t heard other people doing—especially ‘Africa,’ where they had all of that percussion,” he continues. “And then I saw a behind-the-scenes feature of Hans Zimmer doing the score to *Man of Steel*, and he brought in a whole bunch of drummers and he had them improvising together. I thought that would be cool to try in a pop song.”

The drum circle was recorded at the expansive Warehouse Studio, as



Executive producer Bennie and the Jets Ramsay listens to a mix in The Benhouse, one of three studios used in the production of *Astoria*.

were the album’s interludes—orchestral pieces placed between songs that were written by Ramsay and performed by the Vancouver Film Orchestra to give the album a cinematic feel.

## TIME TO GET LOOSE

With some songs, Ramsay wasn’t looking for the sounds of a specific song, but more the feel. He meant for the catchy song “Yesterday” to be “a quintessential ’80s up-tempo, feel-good jam. We get the Huey Lewis-style horn section in there and some Kenny Loggins surf guitars, and it ended up being this eclectic nonstop trip through the ’80s.

“That one was the most fun to record. When I was doing the synths, I remember just being by myself sitting there and just laughing so hard.”

With the end of *Astoria* came the end of The Benhouse (the name is a combination of “penthouse” and “Bennie and the Jets,” Ramsay’s beloved dog and credited executive producer of the album), but not before Ramsay and his bandmates turned the place once known for dark things into a feel-good creative factory. There is no doubt that Chunk, Data and the gang would approve. ■

*Anthony Savona is currently VP/Group Publishing Director for NewBay Media, the publisher of Mix, but he really misses the days when he covered the pro audio industry for EQ Magazine and Surround Professional.*

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# Live



**ANDRA DAY**  
By Matt Gallagher **24**

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By Matt Gallagher **28**

Vocalist Andra Day sings into an Ear Trumpet Labs Edwina large-diaphragm condenser microphone.



Photo: Myriam Santos

## ANDRA DAY

Grammy-Nominated Vocalist on U.S. Tour By Matt Gallagher

**S**inger/songwriter Andra Day's career has been steadily ascendant since her breakout success on the YouTube Music Charts in 2012, followed by her eventual signing with Warner Bros./Buskin Records and the release of her debut album, *Cheers to the Fall*, in August 2015. *Cheers to the Fall* paired Day with veteran producer Adrian Gurvitz, who brought in artists such as Raphael Saadiq, Questlove, James Poyser, DJ Jazzy Jeff and the Dap-Kings horns for

the project. The album received a 2016 Grammy Award nomination as Best R&B Album and launched the hit singles "Forever Mine" (whose video was directed by Spike Lee) and "Rise Up," the latter of which was Grammy-nominated for Best R&B Performance.

Day, a native of San Diego, began performing on major stages in 2015, including the Sundance Film Festival and the 2015 Special Olympics World Summer Games in Los Angeles. She raised her profile on national television

with appearances on the 2015 *BET Awards*, McDonald's 12th Annual *365Black Awards* on BET, ABC's *Good Morning America*, and in an Apple commercial that aired in November and December, in which Day co-starred with Stevie Wonder, performing Wonder's song "Someday at Christmas." On the live scene, Day and her band opened for Lenny Kravitz's *Strut Tour Live* in August and September.

Heading into the summer, Day and her touring band—keyboardist/vocalist Charles Jones,



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guitarist Dave Wood, bassist Nando Raio, and drummer Shay Godwin—are back out on the road in the U.S., visiting the Sasquatch Music Festival over Memorial Day weekend at the Gorge Amphitheatre in George, Wash.; the Bonnaroo Music Festival on June 10 in Manchester, Tenn.; Silverstein Eye Centers Arena in Independence, Missouri, on June 17 (a co-headlining date); and Burton Cummings Theatre in Winnipeg, Manitoba, on June 23.

Supporting Day and her band on the road are production manager/front-of-house engineer/monitor engineer Caleb Morris, and backline tech/stage manager Scott Burton—both of whom Day met in the fall of 2014 at Biola University in La Mirada, Calif., during Biola's monthly outdoor concert called "The Eddy." "She didn't have an engineer at that time and I was her engineer for that evening, and it kind of just took off from there," says Morris, a guitarist and a 2014 graduate of Biola with a Bachelor of Science degree in music and worship. "She's been the first big artist I've had the chance to work with, but the act of engineering has been a passion of mine since I was a kid.

"I got my first microphone when I was 10, and a copy of one of those recording programs from Target or Wal-mart, when they used to have all the software on the wall," Morris recalls. "I got a job in my first studio when I was 15, and then another one when I was 17, and then worked in studios all through college. I helped [Biola's music department] build their first studio, and then did live stuff for different artists and churches all throughout Southern California. It's been more of a lifestyle for me than anything else."

Morris notes that he and Burton, his friend since preschool, both worked

on Biola's event services staff to pay for their education. "I worked about 40 hours a week, just mixing and doing sound for the university while I was going to classes," he says, adding that he learned about setting up and tuning a P.A. system on Biola's d&b audiotechnik rig. "I spent more time learning about the instruments and how they were supposed to interact together, before I started figuring out how the technical side applies to them," Morris says. "Without that basis, you don't have a foundation to build off of. If somebody's sitting in the room and they can't experience the conversation that everybody is having onstage, then I'm not doing my job well."

Morris extends his straightforward approach into his work in sound reinforcement, declaring that he chooses not to use console plug-ins: "I would rather spend more time focusing on the instruments and the microphone placement, and hopefully by the time that reaches my console, I've already gotten 95 percent of the way there. The console had better be able to pick up that extra 5 to 10 percent, and if it can't, I should probably go find another one. Nothing [on the console] is automated; there are no snapshots. If I can't engage with [the musicians] because I don't know the music, then not only am I doing them a disservice, but I'm doing the audience a disservice as well."

For Day's recent and upcoming dates, Clair Global is supplying a package with all of the essentials, save for P.A., including a DiGiCo SD10. "I love the algorithms in the processing, I love the preamps, the converters are stellar—they've got tons of headroom—and it's a very workable sound," Morris says. "The SD Series consoles give me the [greatest] amount of

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Production manager/engineer Caleb Morris is pictured with a DiGiCo SD5. He is currently mixing Andra Day and her band on an SD10.

options, in bridging that sonic gap between the artist and the audience. I usually travel with a TC Electronic System 6000 that gives me four engines of reverb and plates that cover all of the band's needs. And I have a Smart C2 with two Amek channel strips that I use as sidechains for vocals and the bass. And that's about it. I use maybe two or three compressors on the entire mix because I think music is supposed to be dynamic. I don't add any compression to the master bus. It allows the center to speak really well. If something's too loud, turn it down."

Morris's microphone package includes models from Ear Trumpet Labs

(ETL), Shure, AKG, beyerdynamic, Electro-Voice, and Lewitt. He cites the ETL mics as especially well suited for guitar amp, for which he uses ETL's Edwina large diaphragm condenser; drum overheads, a special custom phase-aligned X/Y pair ("That's one of the things that I actually do compress," Morris notes); and Day's crucially important lead vocals, also an ETL Edwina.

Of Day's mic, Morris says, "A condenser responds very differently than a dynamic microphone does, and with it being a larger diaphragm it picks up much more low end. The body you are able to get—especially in the case of a female vocalist like Andra—it's amazing. I'm not fighting to put low-end in. If anything, I'm actually fighting to take it out. There's a beautiful presence to the microphone that's not overbearing. I'm very reliant upon Andra's high-mid presence because she's such a dynamic singer, and I don't use plug-ins to try to compensate for this. The ETL captures Andra's voice so beautifully at quiet volumes and at loud volumes.

"I want to know how Andra's sound is going to interact in the room," Morris says of his live mix. "I've spent the last year just learning to understand Andra's sound and the sonic palette that she's trying to develop, and what she thinks is musical. It's not about me pushing my agenda, or just doing what I think sounds good; it's about bridging this gap between her vision and what she wants people to actually hear and see in her music. I think the biggest compliment I could ever be paid is, 'This is one of the best sounding shows this venue has ever heard,' because that means I've interacted with the pros and the cons of the venue to the best of my ability." ■

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Grammy winning Engineer - Producer  
Justin Timberlake, Pharrell Williams, Rolling Stones, Jay-Z, AC/DC

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## THE ARCS

Guitarist/vocalist Dan Auerbach, one half of The Black Keys along with drummer Patrick Carney, formed The Arcs in 2015 as a side project and released *Yours, Dreamily* in September 2015 on Nonesuch Records. The Arcs are Auerbach, Leon Michels (keys, backing guitar and percussion), Richard Swift (drums, piano), Homer Steinweiss (drums, percussion, synth), and Nick Movshon (bass).

"I just wanted to do my thing and get extra weird," Auerbach told the Website, Consequence of Sound, about the project in 2015. "I wanted everything to flow [and] be cohesive. A lot of the songs bleed one into the other, a lot like the Grateful Dead—my favorite records that they did. So I've got a lot of connected songs."

Auerbach and the band brought this approach to live audiences during an April 2016 tour that included the Coachella Valley Music and Arts Festival. The tour also includes three members of the Brooklyn-based Mariachi Flor De Toloache: Mireya Ramos (violin, backing vocals); Shae Fiol (vihuela, backing vocals); and Julie Acosta (trumpet, backing vocals). *Mix* magazine caught up with front-of-house engineer Neal Jensen when The Arcs played at The Moore Theatre in Seattle. The Arcs return to the road beginning on July 15, when they visit The Orange Peel in Asheville, N.C. "We have been working with Eighth Day Sound,"

Photo: Todd Berkowitz

The Arcs performing at The Moore Theatre in Seattle.



Jensen says. "They are supplying desks, sidefills—we use no floor monitors or IEM systems—power, and a mic package."

### How did you land this gig with The Arcs?

I was hired by Jason Tobias [tour manager] primarily for my "old school" style of mixing. Dan Auerbach preferred to keep The Arcs' live shows vintage sounding and simple—minimal mics, nothing too complicated. I tried getting the sounds through source tone management, mic placement, gain structure through the desk and EQ instead of through plugs or more "in the box" treatments.

### Which console was chosen for front-of-house, and why?

I am using the Midas Pro6 for FOH. I landed on the Midas a few years back for their sonic signature and always spec for these desks. I learned on analog desks like Soundcraft and Midas, and I feel my mixes are closer to what I'm looking for with these Midas Pro desks if I can't take analog. A lot of the "mix-arounds" and "un-doings" I experienced on other digital desks are of no concern on the Midas.

### Do you get to do a soundcheck? What is your main objective for structuring this band's mix?

We typically will run through a soundcheck every day. It helps me balance my mix to the mains, especially for smaller rooms as we use only sidefills for monitoring [d&b audiotechnik] and many times I don't need things in the near-fills. It's also nice to hear what the upstage space or trap room, if there is one, is giving back to me.

### What is Dan's vocal chain?

Dan's vocal chain is quite simple: a [Shure Beta] 57A through a spring [reverb] and an analog slap style echo. I have a [dbx] 160 compressor set at something like 2:1 and an insert in the channel with a dynamic EQ compressing the octave around 2.5k at maybe 4:1. —Matt Gallagher

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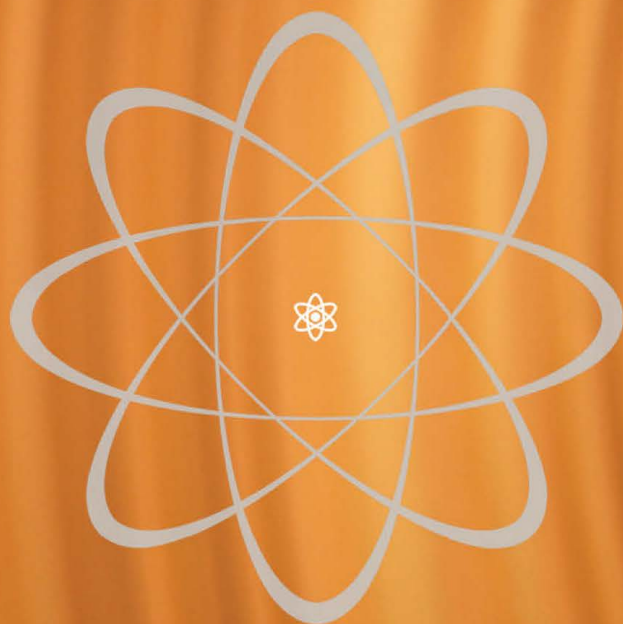
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# CLASS OF 2016

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BY THE MIX EDITORS



Photos: Juergen Nogai Photography

## ↑ On the Cover: ELBO Studios, Glendale, California

ELBO Studios is the new production home of award-winning composer Theodore Shapiro, who has scored films such as *Trumbo*, *The Intern*, *Tropic Thunder* and dozens more movies and TV programs. The facility was designed by nonzero\architecture, studio bau:ton, the firm that also developed creative spaces for Hans Zimmer, James Newton Howard and many other A-list composers.

Peter Grueneisen, FAIA, of nonzero\architecture was brought into the design process by a colleague. “Teddy, the owner, had done a house remodel with a friend of mine from architecture school, Barbara Bestor,” Grueneisen says. “She reached out to see if we would do the studio.”

“I wanted to create a beautiful, creative place to go to work every day,” Shapiro says. “I wanted there to be light and to not have it feel like a cave. I also hoped to create a tracking room where we could handle basically any session other than a full orchestra.”

ELBO is built into an industrial building once operated as a Technicolor studio. However, the structure had gone through

other incarnations, and Shapiro’s studios had to be designed and built from scratch. Included are a 30x36-foot main tracking/scoring studio, with several iso booths and a connected control and mix room; a main composition room with attached booth; and an additional suite of studios used by a tenant, Swedish composer Ludwig Göransson.

Isolation in this multiroom complex was essential, as the building is situated close to the local Metro train station. “We had the airborne sound of horns to deal with,” Grueneisen says. “So we had to design an air conditioning system that wasn’t going to leak any sound, and to be careful with the walls and windows, of course.

“The soundproofing was also internal, making each room independent from the others. So they have floating concrete slab floors, and each whole room is built like a floating bubble. Then the walls have layers of drywall, plywood—they’re as airtight as they can be.”

Speaking of bubbles: “Some of the rooms have what looks like a

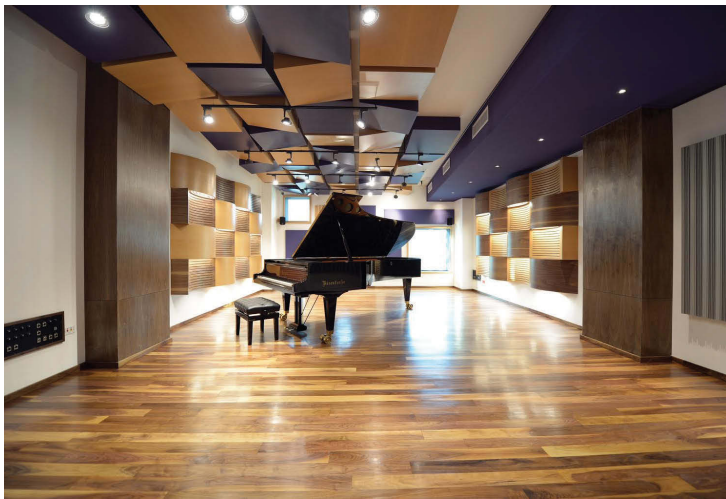
*Continued on p. 67*



## Estudio 13, Mexico City

Estudio 13 has been operating in its original Mexico City studio and on location in concert halls since 1999, capturing jazz, pop, rock, classical and choral music performances. The Walters-Storck Design Group, led by co-principal Sergio Molho, designed an expansion of this facility into a new, ground-up seven-story building. Included are a first-floor piano room featuring a hand-crafted Bösendorfer Imperial; this space is sized to accommodate a string section or choral ensemble. Control Room A is equipped with a 48-channel SSL AWS948 console and Focal 5.1 monitoring. The Live Room has a 23-foot ceiling and plenty of natural light. Control Room B on the third floor is designed mainly for stereo mixing and mastering, and, with excellent visibility into the live room, its iso booth is well suited for voiceover work. Estudio 13 also offers contemporary and vintage analog gear, a collection of vintage and modern mics, and a wide range of instruments.

Photo: Francisco Aguilera de Alba



## Red Sky Studio, Amarillo, Texas

This sophisticated rural studio in the panhandle of North Texas was designed by the Russ Berger Design Group. The studio features tracked fabric treatments, custom trapping, and pARTscience SpaceArray and SpaceCoupler diffusers. Red Sky's control room is outfitted with a Rupert Neve 5088 console, Focal monitors and boutique analog outboard gear, as well as the latest plug-ins.

Photo: Ron Rankin



## Valenzo Recording Studio, Mexico City

The Malvicino Design Group designed a private studio for Mexican producer/engineer Cesar Valenzo. In addition to a tracking room, iso booth and control room, the facility includes an office, lounge, kitchen and dining space. The live room's 17-foot ceilings and natural light give the studio an open, airy feel. Featured equipment includes a 48-input SSL Duality board, 48-track Avid Pro Tools | HDX3 system, Apogee interfaces and Ocean Way Audio main monitors. Malvicino's frequent collaborator TADI manufactured all acoustical treatments and acted as the project's general contractor, while Audio Gate International provided all equipment.



Photo: Joel Ortiz

## Straight to Tape, Ridgefield, Connecticut

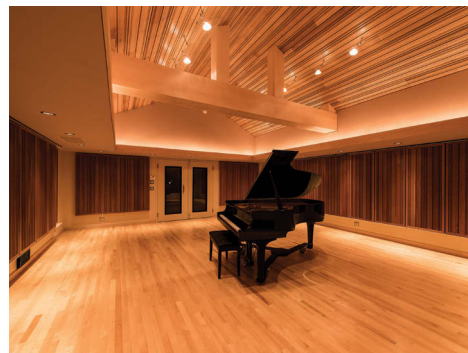


Photo: Wes Lachot

With a design by the Wes Lachot Design Group, Rhett Voga's Straight to Tape studio features an API 1608 console with automation and ATC monitors. The control room was designed to be highly diffuse, with a large sweet spot and mains that are accurate to below 30 Hz. The tracking room features variable acoustic panels throughout, so that the entire room can be made absorptive or diffusive. The tracking room ceiling traps are covered in RPG FlutterFree diffusers. Acoustical construction was done by Brett Acoustics, and technical wiring was installed by Canova Audio.



## Castle Row Studios, ➔ Oklahoma City

Castle Row Studios, a Steven Durr Designs project, incorporates the natural acoustics of an older, existing movie theater. The more than 2,000-square-foot, open Studio A tracking room (pictured) is paired with a spacious control room, designed to be accurate and balanced to a degree that eliminates the guesswork for visiting engineers. Control Room A features an SSL 9000 J Series console, as well as soffitted custom Steven Durr Designs monitors with TAD components, a Kawai concert grand and B-3 that came out of Reflection Sound Studios, and owners Ashton and Garrett Starks' collection of vintage and new analog equipment. Castle Row also includes a B room with Neve console—from the former Woodside Studios, enlarged and updated—and a smaller C studio, designed for overdubs, solo artists and post sessions.



Photo: Keaton Nye

## ESPI 10.29 Studios, ➔ Mazatlan, Mexico

Horacio Malvicino of the New York-based Malvicino Design Group, provided design and system integration services for this private production facility owned by Mexican music star Espinoza Paz. Studio facilities in this newly constructed complex include two control rooms and a large tracking space with three isolation rooms, as well as guest accommodations. The tracking space features 24-foot ceilings and variable acoustics. The main control room is outfitted with a 48-input Solid State Logic Duality console, a 48-track Avid Pro Tools | HDX3 system, Studer A827 analog tape machine, and Ocean Way Audio HR2 monitors driven by Lab.gruppen and QSC Audio amps. The second control room houses a 24-fader AMS Neve Genesys and another Pro Tools rig. Guitar Center Professional provided all of the equipment for the project. TADI of Mexico City supplied acoustical treatments and served as the general contractor.



Photos: Rod de la Garza





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Photo: Beth Childs, Beth Childs Photography

variable acoustics in the live room and iso booths. Equipment was selected with input from Grammy-winning producer/engineer Trina Shoemaker, who has joined the studio staff. Geared for tracking, Studio A offers a 32-channel API 1608 and Barefoot Sound MicroMain monitors, while the mix room (Studio B) has an SSL AWS924 console and Dynaudio BM6 mkIIIs.



## Dauphin Street Sound, Mobile, Alabama

Gavin Haverstick of Haverstick Designs helped to create this studio for Major League pitcher and avid guitarist Jake Peavy. Building on his passion for music, Peavy wants this world-class facility to serve as a catalyst for a growing arts community in his hometown. Haverstick worked with chief engineer Keylan Laxton to design the studio; acoustical treatments include custom bass-trapping, ceiling clouds and diffusers constructed of reclaimed wood to fit the studio's refined but rustic aesthetic. Absorption panels were supplied by Auralex Acoustics, and Dauphin Street Sound is the first studio to implement Acoustical Fulfillment's Flex-48 Adaptive Treatment System, which provides customizable

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Paul George, NBA All-Star  
Indianapolis, IN

Dauphin Street Sound  
Mobile, AL



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## Maine College of Art (MECA), Portland, Maine

Founded in 1882, the Maine College of Art is the oldest arts-education school in Maine. MECA's new recording facility was developed through a collaboration between Lou Clark's Sonic-Space (acoustical/studio design), Parsons Audio (system integration) and architect Richard Renner. It's built into the basement of the historic Porteous Building and includes a Genelec surround system room featuring a custom-built full rear-wall diffuser. Isolation was achieved with multiple layers of sheetrock and room-within-a room construction. Fitted with Pro Tools 12 Native HD and an Avid S6 M40 16-fader control surface, the facility is used for instruction, as well as student projects involving music and voice recording, and mixing and editing of music, film/video and art installations.



Photo: Tim Gaudreau

# Neve



**...No Question**



CLASS OF 2016



Photo: Joel Zimmerman

## ← Mau5trap, Campbellville, Ontario

This music-composition and mix studio was designed by Pilchner Schoustal International for electronic music artist Joel Zimmerman, aka deadmau5. Featuring a large control room, isolation booth and dedicated machine room, the space integrates a large collection of electronic instruments with an extensive, custom-made racking, power-distribution and cable-management system. The room features controlled reflection geometry that incorporates a large pair of ATC stereo mains, as well as a separate Dolby Atmos surround system. Built on Zimmerman's private estate, the room also features extensive use of indirect natural light as well as a large forward-facing window. Several built-in cameras are used for live streaming of his ongoing production efforts.

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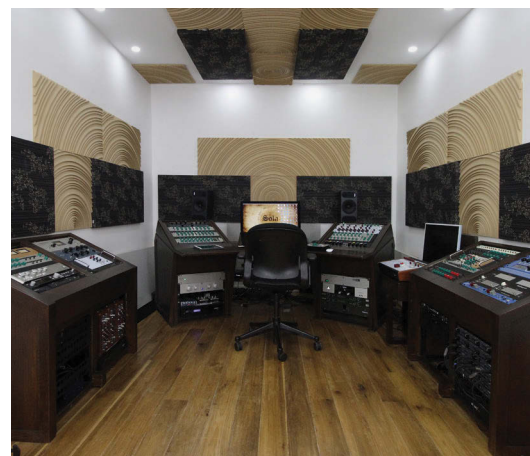


Photo: Nina Rodriguez-Quiros

## ↑ San Juan Mix Suite, Sounds of Life Recording Studios, San Juan, Puerto Rico

This new mix room in classical guitarist Carlos Rodriguez-Quiros' studio features Quantum Acoustics by DHDI. Treatments include ZR (Zero Reflection) Acoustics SMDs, which quantize air molecules, eliminating the need for room EQ or bass trapping. This facility, which is the first in a planned series of studio build-outs, includes Brauner/Klaus Heyne Edition mics, UAD Octo Satellite, Apogee Symphony, as well as an impressive collection of acoustic and electric guitars.



# Macroscopik Studios, Manhattan Beach, California

Macroscopik Studios is the semi-subterranean home recording studio of composer/producer Tommy Simpson. Designed by Jay Kaufman & Associates, the 1,200-square-foot studio's live room was designed to be bright and natural-sounding; it features 13-foot ceilings and variable-acoustic sliding panels. The control room is equipped with JBL M2 monitors and an SSL Nucleus DAW controller with 16 channels of Neve 1073 and 1084, API 512c and Rupert Neve Portico 511 mic pre's. Studio instruments include vintage and new synths and keyboards from Moog, Access Virus, Dave Smith and Korg. There's also an iso booth large enough to fit a grand piano or full drum kit.



Photos: Jay Kaufman



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Photo: Daniel Thompson

## Make Believe Studios, Omaha, Nebraska

Designed by Rod Gervais, with lighting design by Jeff Hedback, Make Believe Studios is a 3,800-square-foot facility that was developed with live, full-band recording in mind. Situated in central Omaha, the Make Believe complex features three control rooms, two tracking spaces and a private outside garden with an outdoor theater. Studio B is Make Believe's main tracking studio, with its 750-square-foot room and a booth with wood diffusers from pArt Science. The 465-square-foot Control Room B has a multilayer rear-wall low-frequency trapping system, and its featured equipment includes an API Legacy console and monitors from Yamaha, ProAc and Augspurger. Control Room B and the mirror-imaged Studios C and D (production suites) offer access to a shared booth when needed.

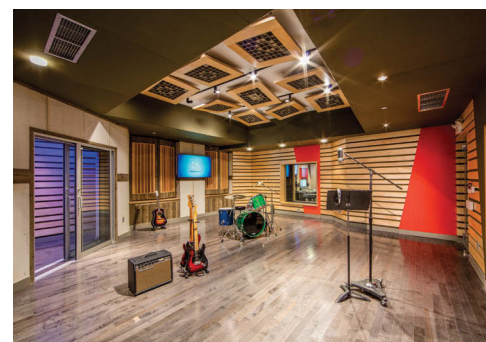


Photo: Francis Manzella and Mickey Alexander

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## Man Made Music, New York City

Francis Manzella's FM Design, in collaboration with reMade, conceived this multi-use creative space for Man Made. The two primary studios are fully floated on jack-up concrete slabs. All studio rooms include floor-to-ceiling custom acoustic treatments and a high-end finish package. Extensive use of DMX-controlled LED lighting and a 20-channel sound system in common areas fill the work environment with the sights and sounds of Man Made's sonic identities and experiences. Key equipment includes an Avid Control Surface, Pro Tools, Focusrite processing, Genelec monitors and extensive collections of mics and instruments.





Photo: Tim Gaudreau

## Pat Keane Mastering, Portland, Maine

Designed by Lou Clark of Sonic-Space, this room serves as a home for Pat Keane's mastering and audio restoration/archiving business. The studio is isolated using Greenglue between multiple layers of Sheetrock over Kinetics isolation clips. The rear wall features a 21-inch-deep full-wall broadband absorber with four XIX Acoustic Ramps. The studio ceiling contains 24 inches of broadband absorption with wood grate scattering panels mounted behind the mix position. The front and sides of the room also have a variety of absorbing panels built out at different depths for broadband absorption. Keane's key equipment includes Barefoot MM27 monitors, Lynx AES16 Interface, Pro Tools HD12, and various analog and digital tape machines.

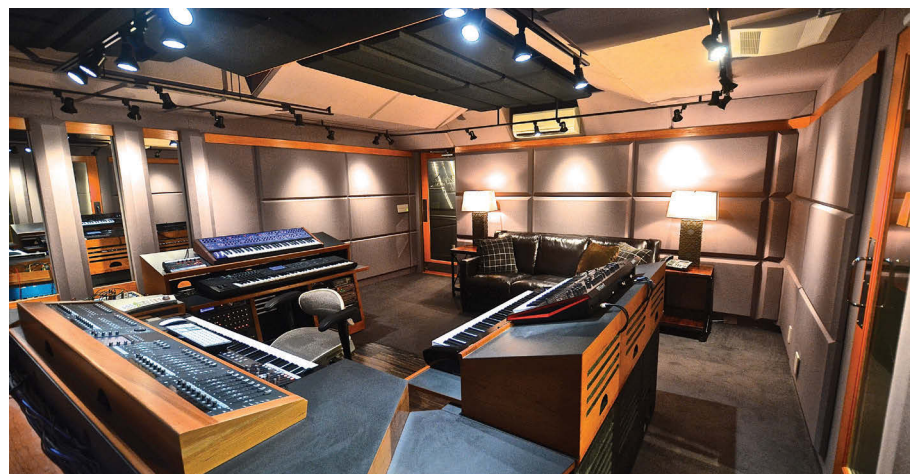
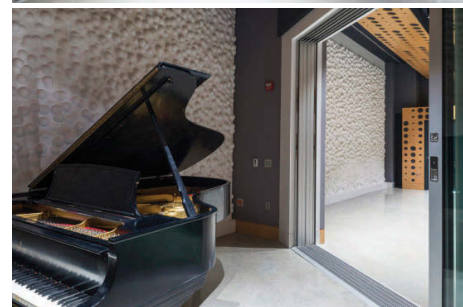
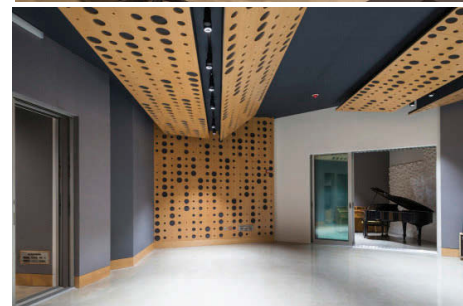
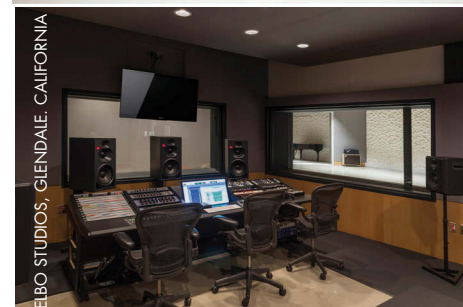
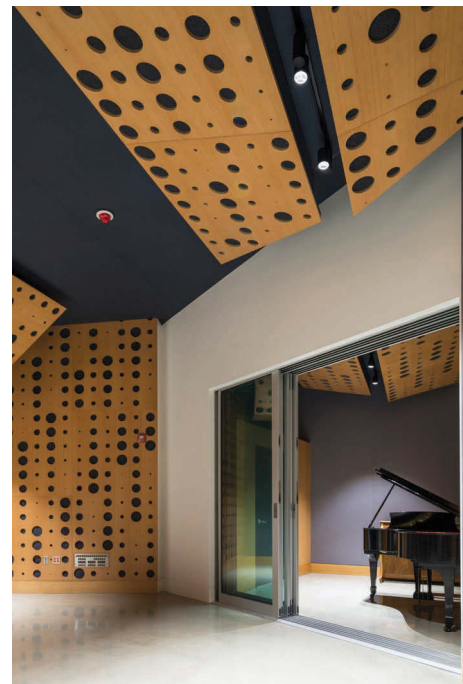


Photo: Lou Johnson

## The News Room, Nashville

Carl Tatz of Carl Tatz Design designed The News Room, which is now equipped with his CTD MixRoom technology, including a PhantomFocus monitoring system and Carl Tatz Signature Series acoustic modules by Auralex. Supplementing the PhantomFocus speakers are Dynaudio M1s powered by Bryston 7B-SST2 mono-block amps. The studio also contains a variety of sample libraries, Avid Artist control surface and numerous synths.



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Photo: Cheryl Fleming

## ← Boston Symphony Orchestra, Boston

The Walters-Storyk Design Group consulted on the upgrade of the Boston Symphony Orchestra's Deutsche Grammophon Gesellschaft control room, which facilitates the orchestra's frequent recording projects and broadcasts. Acoustics and aesthetics received a total renovation, which included the installation of splayed perforated wood panels, slotted wood panels, wood diffusion planks and low-frequency absorption units. A new custom ceiling cloud was also added, along with a new Bowers and Wilkins 5.2 surround speaker system, four new WSDG-designed producer workstations, and two rolling, up-facing equipment racks.

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Photo: Lou Johnson

## ↑ Emerald City, Franklin, Tennessee

This studio owned by Danny and Erin Ozment was designed by Carl Tatz, who employed his CTD MixRoom technology, featuring PhantomFocus Monitors in his proprietary PhantomFocus System, and Carl Tatz Signature Series acoustical modules by Auralex. Additional featured equipment in this studio includes Pro Tools 10/11, Universal Audio Apollo Twin and processing/plugins from SoundToys, Waves, UA and others.



## Mindseye Studio, ➔ Prescott, Arizona

This studio, owned by Grammy-winning composer/musician Bill Pearson (aka DrBill) was designed by Jeff Hedback to connect to the natural beauty of the Arizona high country. Tuned panels are nested into a custom-built head-wall with hinged D&R submixers. Further treatments include sidewall slat absorbers, floating clouds and rear spot treatments. Equipment at Mindseye was selected to support Pearson's hybrid in-the-box/analog-outboard workflow: Pro Tools HDX, processing from Bricasti, Lexicon, Manley, Serpent, Purple and more, plus a collection of classic and modern microphones.





Photo: Julie Trainor

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# ZIGGY MARLEY ON 'ZIGGY MARLEY'

## Reggae With a Rock Mix, At Home and in The Village

BY LILY MOAYERI

**Z**iggy Marley has a home studio in his converted garage. This is not a big deal. Most musicians have a garage-cum-studio setup. Most of them don't have an API 1608 console with Genelec 1038B monitors, a fully functioning vocal booth, and enough space so a whole band can rehearse there in preparation for an upcoming tour.

Marley pauses before entering this haven so he can kick off his shoes, as all his indoor spaces are shoe-free zones. He pads around the fragrant studio—where on one wall, semi-crumpled printer paper is pinned onto corkboard with a different Psalm assigned to each day of the week, and another sheet displays some music-related positive thoughts—before he sits in what is obviously “his” seat. The multiple Grammy Award-winning Marley is clearly comfortable here. That’s a good thing because by all accounts he spends the majority of his waking hours in this space, particularly over the past two years while working his sixth studio album, *Ziggy Marley*, the second that he has self-produced.

“I really love [Marley’s] DIY aspect,” says Carlos de la Garza, who engineered and mixed *Ziggy Marley*, his first foray into reggae music, working very closely with Marley during the process. “He’s doing everything. He is the producer. He is the A&R man. He is the artist. He is recording a lot of the album on his own. He’s the engineer on a lot of it, as well. He helped me mix. He has a definite vision. I was most especially impressed with how focused and hard working he is, unlike any artist I’ve worked with before. All the records he has done and the career he’s had, he is still in the studio, easily 12 hours a day, at all times. The guy doesn’t stop. That work ethic combined with talent is an unstoppable force.”

Marley has no intention of repeating himself, no matter how successful or well-received something has been from his past. With every album, he looks inward to find both the emotional message and the musical one he wants to impart. For *Ziggy Marley*, he purposely avoided any political message or commentary, instead reflecting his reactions to what he sees around him and what he would like to see changed. Naturally, there is a reggae net that is strung under everything. Other areas are explored such as the indie dance of “Love Is A Rebel” and the wrenching acoustic ballad “Heaven Can’t Take It.”

Despite Marley’s elaborate setup, which includes a Pro Tools 12 rig,

Photo: Gregory Bojorquez



his songs start in his head and end up on a no-brand, cheap acoustic guitar, pen plus paper, maybe to a cassette or to his phone. “The old-school way is the best way,” Marley chuckles, as he does making most of his statements. “You have to get a good song, vibe, music. No electronics, no manipulating, nothing.”

“Where the technology comes in is when I make something sound how I imagine it,” he continues. “I make a demo with my drum programming, my bass thing, my guitar idea, my keyboard idea, but I’m not proficient at playing and technology helps me get my ideas across. It’s a long process, and it takes a lot of patience when you’re doing everything.”

Once songs were together enough to bring in the band, Marley and the musicians camped out at The Village Studio D in Los Angeles with de la Garza. The musicians are not the same as those in his live band, and they are recorded together.

“People from outside my crew, they interpret the ideas and bring another feeling and flavor to it,” Marley says. “The conversations are interesting. You learn so much more. It makes the music wider. Music is about not just us but other human beings, as well. I want to bring a different human aspect using different musicians.”

“The vibe we were going for was lively, so I was trying to get as much room sound as possible,” de la Garza says. “It’s not the biggest live room, and with all the players there, it’s tricky trying to not capture too much of their movements. Too much room sound and you’re going to get clicking from pedals and tapping on keys. The way we were set up, with the drums facing the short, closer walls, as opposed to the further walls, I set up the microphones differently than I normally would, which would have been the long way: front of the isolation booth, facing the control room. You start from a big, natural sound, getting the best tone you can out of ev-





ery microphone, close to room, but then dial back as necessary. It's a fine balance trying to achieve a natural sound for the room to speak as loudly as possible."

Unlike its predecessor, *Ziggy Marley* has a lot of programmed drums, as Marley was going for a tight sound that he wanted balanced with feeling. He got this from programming the drums alongside Khris Lorenz, who worked within Cubase using the DAW as his sampler, pulling from sounds collected over the years, putting them on the grid and working out a groove. He then went in a number of directions, from traditional reggae vibes such as on "Marijuanaman" to 808s and even trap hi-hats on "Heaven Can't Take It."

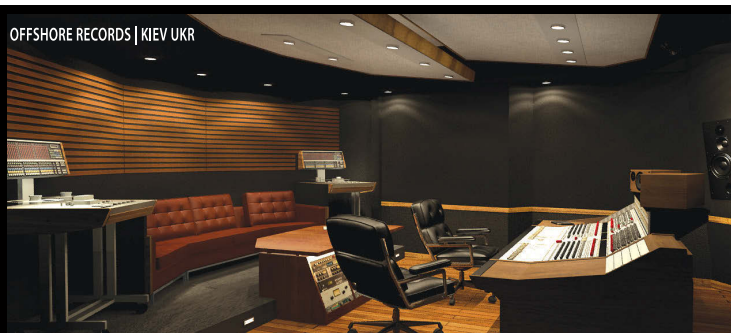
On some of the songs, Marley knew he wanted programmed drums; on others he knew he wanted live; and on others they tried both to see what worked. The live drums were recorded at The Village, using the ideas Marley captured on his son's four-piece Pearl kit at home. De la Garza likes Shure SM91 for the inside kicks, AKG D12 VR for the outside, and a third microphone in conjunction with the Yamaha subkick, bussing varying amounts of the three together to get the kick sound. The snare has a Josephson e22S on top and Shure SM57 on the bot-

tom. The toms have ATM25s on the top and 421s on the bottom. Due to the nature of Studio D, C12s are used as overheads and U 67s as room mics.

*Ziggy Marley* being a reggae album, the guitars have a percussive aspect to them, functioning as a rhythm instrument. This has more to do with the players' instinct than recording, which involved a Royer R-121 and Shure SM57 bussed together.

"I was trying to maintain the authentic vibe so I was following their lead in terms of what they were hearing and trying to capture that," de la Garza says. "The guitars, for example, on the clean sound, the pickup choice was middle or top as opposed to the bottom, which I thought they would prefer. I told [Ziggy] that I have never worked on a reggae record before, and he said that it didn't matter, or that I hadn't mixed a reggae record. He said, 'Music is music.' He didn't want your average reggae record."

De la Garza does have plenty of experience in recording brass from his time at Capitol Studios, where he was fortunate to observe the engineering techniques of the legendary Al Schmitt. Brass was recorded in the big, reverberant Moroccan Room at The Village. De la Garza captured the room using the tube



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Ziggy Marley with engineer  
Carlos de la Garza at The  
Village.



Royer SF24C as the first far room microphone and a pair of U 67s as the second far room microphones. The Royer 122v is on the close trumpet and trombone, with an EV RE20 on the alto saxophone.

Vocals were recorded at Marley's home studio, as, he says, "The studio is such a weird place to do vocals. It's sterile. You're not free enough. Vocals should be done in the room where the music is created, around your own environment so you can get the feeling." A lot of back and forth between microphones and they ended up at the starting point, which is

Marley's Neumann U 87 through a BAE 1073 and Tube-Tech CL1B.

The mix sessions, on the API at Marley's studio, were critical. As on *Fly Rasta*, Marley decided to go with a rock mix. "I like the freedom of rock music," he says. "When it was played on the big systems in Jamaica, it was like, 'Why it sound like that? Doesn't sound like the other songs we hear.' We had to mix *Ziggy Marley* so it can play on those speakers. That was a big part of the mixing of the album."

Playing back through Marley's Genelec monitoring system, with a 7071APM sub—the biggest de la Garza had ever seen at a home studio—they were conscious to not make a bass-heavy record. Every night de la Garza would leave with the day's mix, listen to it in his car, and come back with notes. Then he and Marley would get together the next day.

"I learned about frequency charts because I'm trying to learn more," Marley says. "If I learn what I'm dreaming of, instead of asking somebody else to do it, I can do it myself. While we're mixing, I'm in the frequency too, but not by numbers, by the way I feel. I use my ears. And I use de la Garza for the numbers. It's a balance so you can appeal to more people."

"I wrote down some of the stuff in my head about what the album was going to be," he continues. "Maybe in the past I would have been too stiff to write down an idea. This time, I wanted to. When you put it down on paper, it's like science. Instead of feeling, when it's on paper, you can see if you can go for it. First man said go to the moon then wanted to go to Mars. That's what it's like for me. I went to moon. Now I want to explore more. I don't want to stop." ■

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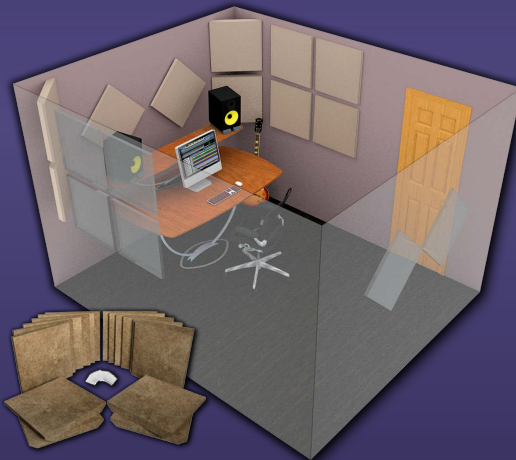
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# ACOUSTIC TREATMENT: AFFORDABLE KITS, UNIQUE PRODUCTS

BY STROTHER BULLINS

Acoustic treatment manufacturers sell solutions comprising a variety of physical products that must be arranged, positioned and applied correctly to work correctly. The goal in employing three treatment tools—isolation, diffusion and absorption—is to create an acoustically improved environment in which to work, one that should ideally provide a relatively flat frequency response with little room-influenced coloration.

## AFFORDABLE KITS

The leaders in affordable yet effective pre-packaged acoustic treatment kits include Auralex and Primacoustic, the latter being a division of Radial Engineering. From a variety of sub-\$200 Roominator absorption/bass trap kits to its lovely SonoSuede absorption collections, Auralex offers a wide range of effective treatment packages that are easily augmented as a workspace is acoustically honed.

Primacoustic's London Series of prepackaged absorption kits are also easily augmented over time and notably feature fabric-wrapped Broadway high-density 6-pound per cubic foot Fiberglas panels; I have personally installed a customized Broadway panel kit in my own studio and have been pleased with its performance, especially with placement guidance provided by the company.

## THE MANUFACTURERS

In many cases, unique solutions are vital in solving acoustic anomalies not so easily wrangled with pre-packaged treatment kits. Below is a rather comprehensive collection of acoustic materials companies, their areas of product expertise, and explanations of their most unique creations. Within this group of manufacturers and solutions, audio types will be hard-pressed to not find an ideal treatment material or patented acoustic innovation for their needs.

Established by acoustic engineer/physicist Arthur Noxon in 1984, **Acoustic Sciences Corporation** is an acoustic research, design, and product development

company. They are very well known for their patented TubeTrap, a pressure-zone, corner-loaded bass trap voiced with a treble range diffuser panel.

**Acoustics First** offers a large array of acoustic materials, including sound absorbers, barriers, diffusers and bass traps made of materials including polyurethane and Class-1 Melamine foams, Fiberglas, wood, plastic and metal. Of particular interest is Acoustic First's Transfusor, a transparent diffuser panel created to fit standard 2x2-foot fluorescent light fixtures.

**Acoustical Fulfillment** is a new firm founded by Auralex alumnus Gavin Haverstick, a seasoned acoustician also heading his own consulting company, Haverstick Designs. His first product is the FLEX-48, a patent-pending design that allows users to change the ambience of a room within seconds to adapt to various applications, making it more "live" or "dead" depending on needs and taste. Its two main components are the FulFill Acoustical Panel and the reflective Flex-Shield. The brushed stainless steel Flex-Tray serves as the mounting device for both the absorption panel and the shield.

How does it work? When fully exposed with no shield in place, the FulFill panel behaves as a passive absorber, removing acoustic energy from the room. When the Flex-Shield is installed, a barrel-type diffuser is created; the higher frequencies will be scattered evenly throughout the room, retaining liveliness, while the mid and low frequencies continue to pass through to the FulFill panel. The air gap between the Flex-Shield and the FulFill panel combined with the sympathetic vibration of the Flex-Shield increases the low frequency absorption of the panel.

Founded in 1989 by Michael Binns, a native of Richmond, Va., **Acoustical Solutions** was born via relationships with acoustical treatment companies Illbruck and Acoustone while Binns worked with local recording studios and completed his degree at Virginia Commonwealth University. Today, Acoustical Solutions manufactures and distributes a wide range of products—panels, fabrics, foams, bass traps, booths and enclosures, ceiling and floor treatments,



Acoustic Sciences Corporation  
TubeTrap



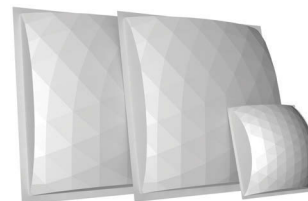
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Acoustical Fulfillment's FLEX-48



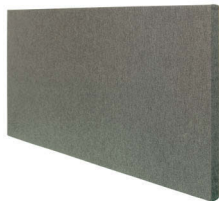
Acoustics First The Transfusor



Auralex GeoFusor



Clearsonic S4-2D SORBER panels



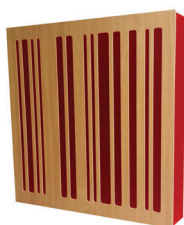
Delta H Designs ZR Micro Twin



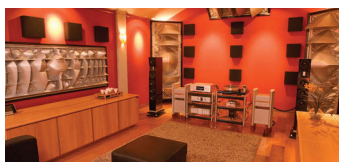
Eckel Industries Eckoustic Functional Panels



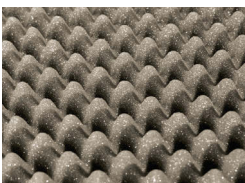
ESR Roundffusor1



GIK Acoustics 4A Alpha Panel



Golden Acoustics' Golden Section Broadband diffusers



Markertek Markerfoam 54x54 UL94 Panels

doors and windows, sound barrier materials, HVAC noise and vibration control systems, and more. Among those are suspended AcustiCloud Ceiling Clouds, fabricated with a unique polymer stretching system to cap each cloud, creating a tailored appearance. Thirty fabric colors and up to 23 different shaped clouds are available.

Along with providing a wealth of acoustic treatment knowledge on its Website, **Auralex Acoustics** offers a comprehensive collection of acoustical product solutions, including acoustical foam, diffusers, bass traps, construction components, and various other notable products. The company's Website offers information about its remote consultancy services that are actually quite simple to employ. Introduced as the 2016 NAMM Show is the intriguing GeoFusor, Auralex's new sound diffuser based on the geodesic dome pattern. According to the company, GeoFusor's shape offers smooth, even diffusion and allows back filling with absorptive material for enhanced low-end control. It is wall and ceiling mountable and is offered in two sizes (1x1-foot and 2x2-foot). The 2x2 GeoFusor is sized to fit in ceiling grids and offered in fire-rated and non fire-rated variations.

**ClearSonic** offers the SORBER panels such as the S2 baffle, a 1.6-inch thick fabric covered Fiberglas wall treatment device. Built for easy portability, SORBER panels are light and easily mountable on a variety of surfaces. When custom configured with ClearSonic panels, SORBERS can be used to create better-balanced isolation spaces, booths and even rooms.

Building on its trademarked Quantum Acoustics technology, **Delta H Designs** has introduced the latest in its ZR absorption series, the ZR Micro Twin, now available from retailers such as GC Pro and Lift AV or direct from Delta H. Combining two of its ZR Micros into one package, the Micro Twin is twice the surface area of the original ZR Micro. According to the company, the ZR Micro Twin is best applied in situations requiring lifelike acoustical

imaging. Recommended uses are in pairs behind speakers or as part of a system with a Custom Design Layout, and it can be applied for a variety of acoustic applications, The ZR Micro Twin sports dimensions of 48x24x1.5 inches.

The maker of "the world's most efficient acoustical diffuser," **ESR** offers the Roundffusor1, a combination diffuser/low-frequency absorber made of hard polystyrene. According to ESR, using the Roundffusor1 in a standard group of nine to 15 pieces drastically reduces a room's overall reverberation time, as much as a much larger and more expensive absorptive surface would do.

Founded by Oliver C. Eckel in 1952, **Eckel Industries** provides sophisticated acoustical test facilities and noise control products, specializing in acoustical test chambers and facilities, architectural acoustic panels, audiometric rooms/booth and suites, as well as specialized engineering and design services. Of specific note are Eckel's Eckoustic Functional Panels, fire resistant absorption panels that can be spot located on walls or ceilings. Its patented design includes "V" ridging, reportedly improving absorption by holding the polyethylene encased acoustical fill away from its perforated metal face. In addition, the ridging increases the stiffness of the panel and aids in protecting the face from damage.

**GIK Acoustics**, a leading acoustic treatment manufacturer based in Atlanta, has expanded its of Alpha Wood Series to include larger panels as well as corner bass traps. GIK first introduced the



Bonzi Recording, Los Angeles

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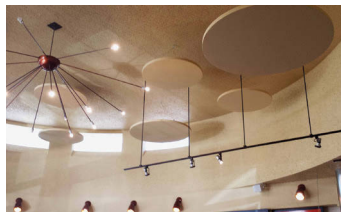
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MBI supplied Colorsonix wall panels and Cloud-Lite acoustical baffles to Tecumseh High School.



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MSR SpringTrap



Netwell Noise Control

Alpha Wood Series in late 2015 with the launch of the 4A Alpha Panel; later, at the 2016 NAMM Show, GIK debuted its Corner CT Alpha Bass Trap, large 2A Alpha Panel with freestanding supports as well as the 6A Alpha Panel. These products are now available for direct sale worldwide. The 4A Alpha Panel is constructed as a 23.75x23.75x4-inch wood-framed panel filled with rigid Fiberglas absorption materials; its core is made from 100 percent recycled materials, environmentally friendly without any formaldehyde or urea formaldehyde, notes the company. The panel is then wrapped in fabric and finished with a blonde veneer wood face, reportedly designed for even, one-dimensional scattering. The wood face is crafted to allow low-frequency waves to pass through to the Fiberglas panel for better low-end absorption.

**Golden Acoustics'** Golden Section Broadband diffusers are visually interesting acoustic panels available in a variety of dimensions for both wall and ceiling applications. Golden Acoustics even make a full Golden Section tuning column in custom lengths up to 24 feet. Flat-mount Golden Section options include the full broadband ceiling panel, center ceiling/

triple corner panel, end ceiling/double corner panel, full wall broadband panel, and a wall panel quarter section inlay.

**Markertek**—one of America's largest pro audio retailers—offers a full line of soundproofing and acoustic treatment products under the Markerfoam brand. Markerfoam products include ceiling and wall tiles, acoustic pads and baffles, acoustic sealant products, portable isolation booths, and acoustic blankets.

**MBI Products Company's** Cloud-Lite Baffle is the industry's original fully encapsulated absorbent baffle and is available in finishes of PVC, nylon, polyester, vinyl, and weather resistant fabrics. Other MBI offerings include the Lapendary Panel and the Colorsonix absorbent and decorative wall panel, which is available in a wide range of dimensions, thicknesses and colors.

**MSR Acoustics** offers pre-engineered acoustic treatment kits that vary upon a given room's size. StudioPanel Acoustic Treatment Systems include a balanced collection of diffusers, absorbers, bass traps, and various other panels with specific mounting directions, effectively making complex placement issues simpler for the end user. Notable StudioPanel components include the Bazorber slotted low-frequency absorber, CloudPanel fabric-covered ceiling panel, and the SpringTrap, a ported corner bass trap for ultra-low frequencies.

**Netwell Noise Control** makes an extensive range of noise control and acoustic design products including polyurethane acoustic foam panels, bass traps, ceiling tiles, wall coverings and fabrics, even isolation tools such as duct-work wrapping materials.

**Primacoustic's** acoustic solutions include bass traps and diffusers, wall and ceiling absorber systems, Fiberglas absorber components, and much more. The company's comprehensive website offers acoustic treatment insight and notably valuable tips. Of note, Primacoustic's Paintables Cloud series features three different shapes of absorptive acoustic panels that can be used as ceiling clouds, baffles or wall panels to reduce excess reverberation. These paintable panels are the ideal sound abatement solution where acoustic treatment must integrate with the aesthetics of the room. The line includes the circular Cirrus, the hexagonal Hexus and the square Altos. Each panel is made from 1.5-inch thick high-density 6-pound glass wool for even absorption and feature resin-hardened edges with micromesh that together fully encapsulate the panel to prevent dusting. The Cirrus, Hexus and Altos are available in 36- and 48-inch diameters. As with all Primacoustic panels, Paintables have been independently tested for acoustic performance and



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RealTraps MiniTrap



RPG Diffusor Systems  
Skyline Diffusor



Silent Source acoustical foam



Sound Control Room  
Saturn Diffusor



Taytrix FP30 StackIt Gobo Panel



WhisperRoom iso booth

fire-tested to achieve the most stringent Class-A ratings.

**RealTraps** are a leading provider of very effective broadband absorption solutions with their complete line of their affordable and portable bass trap products. MiniTraps, MondoTraps, MicroTraps, GoboTraps, and the aesthetically unobtrusive SoffitTraps all offer various and impressive absorptive benefits. As an added perk, RealTraps offers detailed acoustic theory and product application information on its interesting website. Discriminating studio owners, such as Cphonic Online Mastering's Kevin McNoldy, have invested heavily in RealTraps products and have gleaned great acoustic results.

**RPG Diffusor Systems**, one of the leading acoustics firms in the world, is a maker of attractive and functional diffusion systems for a wide array of environments. RPG, top studio designers' go-to solution, specializes in intricate custom diffusers made of a variety of materials and for mounting in a variety of areas. It would be too much to list all that Dr. Peter D'Antonio does; he's a sure-fire acoustics Hall of Famer.

Massachusetts-based dealer **Silent Source** sells a wide variety of foams, barriers, baffles, bass traps, diffusers, and much more, but also markets two of its own signature products. HushFoam panels are very absorbent open-cell polyurethane foam wedges, and WhisperWedge is a 2x4-foot flat foam absorber available in thicknesses from 2 to 4 inches.

**Sound Control Room** is the source of the Saturn polycylindrical diffuser, an acoustic treatment tool resembling a giant aspirin for use on walls and ceilings. Other custom SCR products include their own 3-Panel absorbent booth and Instant Studio, a full-frequency mobile control panel.

**Taytrix** offers clients a simple and innovative way to acoustically treat an environment—the StackIt GoBo System, which is ideal for mobile recording rigs and temporary production spaces. Available in three styles and two colors, StackIt GoBos feature multiple layers of insulation covered with fabric on both sides and measure 46x15 inches, or 30x8-inches wide. Both Plexiglas and natural maple panels are available for the StackIt product line. Taytrix also builds studio furniture and provides design/build acoustic services, too.

Specializing in sound isolation enclosures, **WhisperRoom** is a partner of Auralex Acoustics, among others, in crafting modular, semi-permanent rooms for purposes ranging from recording, broadcasting, voice-over work, testing and other applications. WhisperRoom offers 20 sizes and two levels of sound isolation, including Standard (single wall) and Enhanced (double wall) models. Optional features abound, including caster plates, ventilation silencing systems, wall windows, audio and XLR jack panels, wide-access doors, and more. ■

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# MIX REGIONAL: CHICAGO

## HI-STYLE STUDIO AND RELIABLE RECORDS

### *Shared Facility Serves Roots Artists*



drummer Alex Hall, took over day-to-day operations of the studio. Hall also produces and engineers non-Hi-Style sessions at the studio, under his own business name, Reliable Records.

"Jimmy still regularly works with me in Chicago and has generously left his vintage equipment in the space, which I have combined with my own collection," Hall explains. It [sounds] a little confusing, but it works for us."

At press time, Hall was completing sessions with blues singer/songwriter Jake Labotz. "Jake wrote, plays guitar and sings all of the songs on the record, with Jimmy at the helm producing and yours truly at the controls," Hall says. "Jimmy and I join him on bass and drums, along with keyboardist and multi-instrumentalist Scott Ligon on organ or piano on some of the tracks. All of the basic tracks involve the three or four of us playing together in the live room. We've captured live vocal takes on a handful of the tunes."

As for the direction the production takes from there, "This project has a strong mood and travels to some pretty dark places both lyrically and musically," Hall says. "It was fun finding sounds and textures to match the vibe—distorting elements, making them sound small, even claustrophobic if necessary. Many of the vocals were tracked through an old Electro-Voice 666, a dynamic mic with a pretty powerful midrange peak and proximity to spare. I've found dynamic mics—especially strange, colored ones—can do a great job of putting a vocal track in a very specific sonic place. They also can keep room ambience and coloration to a minimum, and I think the dryness serves Jake's record well." —*Barbara Schultz*

Hi-Style Studio, founded by longtime bass player/producer Jimmy Sutton, has been serving Chicago's Americana/roots music community for 16 years, often hosting sessions for musicians on the Hi-Style label, such as J.D. McPherson, The Bellfuries and others. But when Sutton moved to L.A. a few years ago, his longtime collaborator, engineer/producer/

## Composer Named Dean at DePaul School of Music



Photo: UCSF DMM/ Marco Sanchez

Dr. Ronald Caltabiano is DePaul University's new dean for the School of Music.

DePaul University has selected Dr. Ronald Caltabiano, an internationally recognized composer with more than 25 years of experience in higher education, as the next dean for the School of Music, effective July 1.

In his current role as dean and professor for the Jordan College of the Arts at Butler University in Indianapolis, Caltabiano oversees the areas of art, arts administration, dance, music, theater and a community outreach program that reaches 1,800 low-income youth. Upon his arrival at Butler in 2011, he managed the completion and

final fundraising for the Howard L. Schrott Center for the Arts, a 450-seat multi-arts venue. His fundraising efforts doubled the annual philanthropic income for the college in four years. Caltabiano also is the founding director of Butler ArtsFest, an annual 11-day festival that brings national and international artists to Butler's campus to work with students and faculty.

"Ronald's experience as dean, including the management of large performance facilities, prepares him well to lead DePaul's School of Music at a pivotal time as we construct our state-of-the-art music building," said DePaul Provost Marten denBoer. "DePaul is gaining an accomplished musician and dedicated community leader who will build on the School of Music's strengths and develop the next generation of world-class musicians."

At DePaul, one of Caltabiano's first tasks will be leading the School of Music through the construction of its new home on the west side of Halsted Street. Construction began in November 2015 on the new facility, and the university expects to complete the first building phase in spring 2018.

"One of my greatest passions is connecting with neighbors and developing community programs," Caltabiano said. "In addition to better serving DePaul's entire student body, the new music facility will be a wonderful cultural addition for all of Chicago and beyond to enjoy. I look forward to collaborating with the school's talented faculty, staff and students during this exciting time."

Trained at The Juilliard School in New York, Caltabiano launched his musical career as a composer. His compositions have been heard around the globe, with commissions and performances by the San Francisco, Cincinnati and Dallas Symphony Orchestras.

While maintaining his independent career as a composer, Caltabiano taught music composition and theory at the Manhattan School of Music, Hong Kong Baptist University and Peabody Conservatory at Johns Hopkins University. Prior to joining Butler University, he served as a faculty member and associate dean at the College of Creative Arts at San Francisco State University.

# SESSIONS: CHICAGO



Mat Lejeune & Mavis Staples

voiceover, loop groups and background vocals on a song for his 2015 film, *Chi-Raq*, with engineer Mark Wilkening and assistant Zac Schmidt.

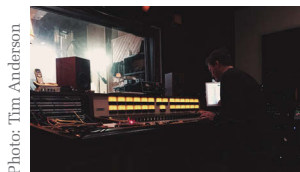


Photo: Tim Anderson

Stephen Shirk at the Sphere Eclipse A tracking Tall Walker.

Moonrise Nation, Matthäus, Minor Characters and Brother also continued recording with engineer/producer Shirk.

## CRC (CHICAGO RECORDING COMPANY)

Kaleo worked on “Way Down We Go” and “Automobile” from the album *A/B* (Elektra/Atlantic Records), with engineers Nate Dickinson and Austin Thompson, assisted by Jonathan Lackey. They worked in Studio 4, with basic tracking to the Studer A820 2-inch tape machine...Fifth House Ensemble was in Studio 4 working on the album *Nedudim* (Cedille Records), with producer Steve Rodby and engineer Bill Maylone, assisted by Lackey...NHL announcers Doc Emerick and Eddie Olczyk returned to Studio 6 to record game dialog for EA Sports *NHL 2017*. Engineer Stan Oda, assisted by Tom Zalduendo, captured the raw game calls...Mavis Staples was in Studio 5 to record the title song and theme for the upcoming Oprah Winfrey executive-produced drama, *Greenleaf*. Mat Lejeune engineered and mixed on the SSL 6000, and the music was composed and produced by Tim Lauer. Staples’ mic of choice is a Neumann U 47...Spike Lee spent a few days recording ADR,

## SHIRK STUDIOS

Scoring sessions for the upcoming documentary *Finding Oscar* took place with producer Paul Pilot, John Stirratt (Wilco, Autumn Defense) and Joe Adamik (Califone, Iron & Wine). Engineer Stephen Shirk tracked through the studio’s vintage 32-channel Sphere Eclipse A console, and he used a healthy dose of tape-speed manipulation on the studio’s MCI JH-16 2-inch machine. Matt Cerritos assisted on the sessions...Davy Knowles tracked his forthcoming blues-rock full-length album to 2-inch tape, with Anthony Gravino engineering and co-producing...Neil Strauch engineered string recordings for composer Lawton Hall...Shawn Maxwell’s Alliance cut their next album with engineer/producer Nick Eipers (Chicago Sessions)...Hoodsmoke returned with Anthony Gravino as engineer to finish cutting basics for the follow up to their very recent 2016 release *Rough Around the Hedges*...Greg Duncan’s jazz ensemble cut tracks with engineer Nick Broste...Tall Walker,



Joe “Dante” Delfino behind the console, with artist BeFlow and (on the couch) intern Dan Taylor.

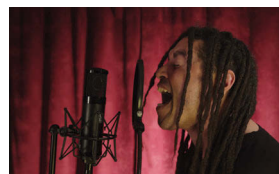
and mixing. They recorded live drums, bass, electric guitar, vocals and saxophone. On sax, Delfino used a Sennheiser MD421 close-miked and a U 87 in omni for an ambient mic.

## MILLER STREET STUDIOS

Tedashii worked on the single “Be Me” with producer Gawwi and chief engineer Joe Delfino (mixing). For the vocal mixing, Delfino ran his vocals through the Heritage Audio 1073 for some saturation/color and slight EQ. For compression, his vocals sounded best running through an LA-2A, and then some slight EQ with the Great River EQ-2NV, as well as some other little tricks in and outside the box...Dave Pracyse & Threat The King worked on the EP *Apply Pressure*, with the band self-producing and Delfino engineering (mastering). One of Delfino’s go-to pieces for this project was the Neve Portico II MBP...Bosco worked on the album *Undeniable*, with producer James “Dagga” Love and engineer Delfino (tracking/mixing). They used the AKG C12 on most of his vocals, running through a Vintech X73i and, for some vocals, through the API 512c; then for compression, either through the Distressor or the Tube-Tech CL1B. The go-to compressor for mixing was a Shadow Hills Mono Optograph...Jade.The.Ivy worked on the EP *Euphoric Wasteland*, with the artist self-producing and Delfino recording

## UPTOWN RECORDING

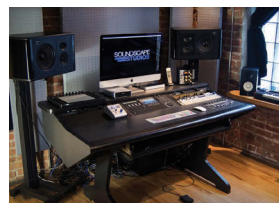
Robert Irving III (former Miles Davis music director) did more work at the studio, with sessions including the recording of Wanda Hutchinson (singer from the Emotions), Ernie Adams (drummer for Al Di Meola), and Wallace Rooney...The band Nonpoint (Spinefarm Records) blocked out for the whole month of February to record and mix their ninth major-label release in 15 years. The band and chief engineer Rob Ruccia embarked on a 14-song/28-day journey and completed the record slated for a late-June release. Most of the sessions were analog, using the studio’s new Toft ATB16 and MCI 2-inch 16-track tape machine (previously owned by the late, great Merle Haggard). They also beta tested the Slate VMS, as the studio had one of the first test units for the microphone system and software. Ruccia would use one model for lead and a different model for backups/overdubs, preventing any coupling of frequency response and resonance.



Elias Soranio of Nonpoint singing into the Slate ML1 at Uptown Recording.

## SOUNDSCAPE STUDIOS

Zayn Malik (formerly of One Direction) was working in Studio A with Jeff Arenson on his debut solo effort...Jamilia Woods has been working on her debut solo project “Black Girl Magic” with owner/chief engineer Michael Kolar...Carl Tatz of Carl Tatz Design visited Studio A to re-tune the Phantom Focus System...Studio B was redesigned to factor in modern laptop production techniques with a new console setup: Malone Design Console with Avid Artist Series modules. Other new gear in Studio B includes a vocal chain consisting of a Rupert Neve Designs 511 mic pre, Inward Connections Brute vocal comp and Inward Connections Nitro EQ; and a Neumann U 87 vocal mic modded by Bill Bradley at The Mic Shop in Nashville...Studio A also received a few new pieces of gear, including a Thermionic Culture Phoenix Mastering Plus tube mastering limiter and a Manley Massive Passive tube mastering equalizer.



The B Room at Soundscape.

## IV LABS STUDIO

Gone to Color worked with producer Brian Deck and engineer Shane Hendrickson in Studio A. They had a two-week run of overdubs, everything from electric mandolin to marimba to pump organ...Grammy Award-winning children’s artist Justin Roberts worked with producer Liam Davis and engineer Hendrickson in Studio A. They started live tracking for an album—guitar, vocals, banjo, upright bass and percussion...New Trier High School Jazz Band worked in Studio A with producer Nicholas Meyers and engineers Freddie Breitberg and Rollin Weary...Pocket Radio worked in Studio A with producer Anders Nordstrom and engineer Chris Harden.



New Trier High School Jazz Band at IV Labs

Continued on p. 65



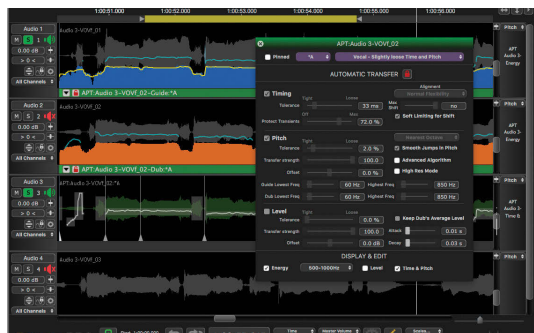
# Tech // new products



## PROPELLERHEAD REASON A-LIST STUDIO DRUMMER

### Rack Extension Features Multiple Styles

The A-List Studio Drummer Rack Extension Instrument for Reason (\$99) provides a fast, easy way to create inspiring drum tracks. It offers nearly endless variations of drum patterns, from a professionally miked kit that can be played, combined and tweaked in real time to create unique, realistic and inspiring performances. Creating a drum track is as simple as selecting a drum kit and style, then using your MIDI keyboard to trigger verses, chorus patterns, intros, fills and stops. The drum kits themselves are also available as individual instruments and can be triggered by other Rack Extensions such as drum sequencers or arpeggiators.



## SYNCHROARTS REVOICE PRO 3.2

### Update Brings Tempo Grid, Operational Enhancements

ReVoice Pro Version 3.2 (free upgrade) brings a range of user-requested enhancements to the tuning, alignment and doubling software. Updates include real-time preview of note Pitch in Warp and APT Process—with optional reference track(s) playback—and the addition of musical scales. Also, tempo grids

can be displayed and loaded from MIDI files, automation parameters have been added to the Doubler, and overall, there are many improvements to operations and speed.



## TK AUDIO TK-LIZER 500

### Portable Unit Updates Rack Hardware

TK Audio has released its newest 500 Series module, TK-lizer 500 (\$1,329), which features all the power of TK's flagship TK-lizer dual-mono EQ, including the M/S functionality. Updates in the new release include extending the cut/boost range to  $\pm 8\text{dB}$  across 41 discrete steps; level control ranges from infinite to  $+6\text{dB}$ , also in 41 discrete steps, and now both the high and low bands can be switched from peak control to shelving duty.



## PRO CO SOUND DURASHIELD CABLES

### High-End Cat-5/Cat-6

Pro Co Sound has released the 5EXR Cat-5e Xtended Reach solid-core tactical cable and DuraShield, a Cat-6a stranded-core tactical deployable shielded cable (priced per configuration).

The cables provide digital data transmission that can be terminated with RJ45 or Neutrik etherCON connectors. Both solutions feature a polyurethane tactical-grade outer jacket and double-shielded braiding of overall 100 percent aluminum and 80 percent tinned copper for a high level of shielding effectiveness for EMI and RFI ingress and egress. The DuraShield 5EXR is TIA TSB-184 Cat-5e compliant up to 410 feet (125 meters), while the DuraShield stranded cable is Cat-6a compliant up to 280 feet (85 meters).



## WAVES BSS DPR-402 PLUG-IN

### Legacy Dynamic Processing

Created in association with BSS Audio, the Waves BSS DPR-402 plug-in (\$99) is a precise software model of the discontinued and versatile compressor/peak limiter/de-esser. Features include separate control over the dynamics of selected frequency ranges, 12 modes providing quick access to diverse combinations of dynamics processing, two independent sidechains per channel, auto mode for program-dependent attack and release control, and an M/S matrix for separate mid-side processing.



## SONIC NUANCE TDI

### DI/Tuner for Studio and Stage

The TDI from Sonic Nuance (\$350) is a DI stomp box featuring a Jensen JT-DB transformer and 100-percent analog signal path, as well as phantom-powered chromatic tuner. The tuner works on a true bypass, is fast and simple to use, and offers  $\pm 1$ cent accuracy. The unit is hot pluggable (no pops), and can be operated hands-free via the rugged footswitch.



## JENSEN ISO-MAX CONCERT DIS

### Quality Mono and Stereo Interfaces

The Concert-1 (\$199.95) and Concert-2 (\$299.95) are direct boxes featuring a rugged aluminum outer shell with a slide-in steel shell on which the circuit board, switches, connectors and transformers are mounted. The Concert-1 is a single-channel direct box with standard 1/4-inch input and throughput featuring a Jensen JT-DB-EPC transformer. A handy 1/8-inch (3.5mm) TRS connector enables a user to connect a laptop to the Concert-1 and the signal is summed to mono by pressing the selector switch. The Concert-2 is a stereo version that retains full stereo functionality at all times.



## ANTELOPE ZEN TOUR INTERFACE

### T-Bolt, USB I/O with DSP

Antelope Audio's Zen Tour (\$1,495) is a portable Thunderbolt and USB interface with eight analog inputs and outputs, high-end DSP effects, hardware-based guitar amp/cab simulations and more. Also included are four switchable mic/line inputs and four hi-Z/line inputs, as well as digital ADAT and S/PDIF I/O. Dual monitor outputs enable A/B monitor switching; dual re-amp outputs allow re-recording a performance through a tube amp later. Other features include talkback, guitar amp and cabinet simulations, an emulation of a legendary EQ, and the AuraVerb reverb.



# hd

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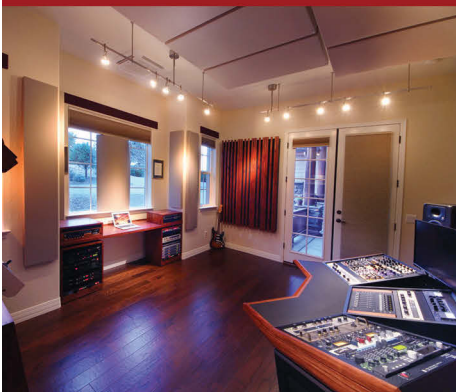
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We Design**



**Mix Class of 2016**

**drBill's Mindseye Studio**

*Located: Northern Arizona high country*



**Mix Class of 2011  
Stonewall Studio**  
*(Pensacola, FL)*

**Mix Class of 2013  
Boali Studios**  
*(Port-au-Prince, Haiti)*

**Mix Class of 2012  
Grassy Knoll Studio**  
*(Vancouver, BC)*

**Mix Class of 2014  
Espen Lind's studio**  
*(Oslo, Norway)*

**HdAcoustics.net**  
**317-863-0753**

## New Sound Reinforcement Products



### AMADEUS PMX D SERIES SPEAKERS

#### Active Monitors With DSP and Dante

The design of the new PMX D Series from Amadeus (\$TBA) features built-in 24-bit/96kHz DSP and analog, AES3 and Dante inputs. With three models, which contain 8-, 12- or 15-inch coaxial drivers, the PMX D Series is aimed at fixed installations or for touring applications as a stage monitor. Features include a coaxial neodymium transducer, combining the features of the best cone speakers and compression drivers into a one-piece, point-source solution. A newly refined Dante I/O section offers full integration with leading third-party networking. Audio signals are selectable from one channel of analog, two channels of AES3 digital, and two dual redundant Dante networked digital inputs.



### MEYER SOUND MJF-208 MONITOR

#### Self-Powered, Compact Unit

The self-powered MJF-208 stage monitor from Meyer Sound (\$N/A) incorporates the performance and reliability of the company's MJF-212A and the MJF-210 monitors into a smaller, lightweight package. Each MJF-208 measures less than 13 inches high and weighs 45 pounds. The monitor delivers impressive power-to-size ratio and very low distortion in a small-footprint option for applications that do not demand the extreme output levels of the MJF-210 or the MJF-212A. Portability and ease of use for the MJF-208 are enhanced by the convenient and reliable MDM-832 distribution module, which can route up to eight channels of AC power, balanced audio, and RMS monitoring data to multiple stage monitors.



### MARTIN AUDIO CDD-LIVE!

#### Portable Full-Range P.A. System

Comprising three full-range models and two subwoofers, Martin Audio's CDD-Live! (\$TBA) features patented Coaxial Differential Dispersion technology. Combining the point-source benefits of coaxial design with the consistent coverage of Differential Dispersion, CDD-Live! full-range systems project sound evenly front-to-back while exhibiting wide horizontal coverage close to the speaker—delivering ultimate fidelity and impact to all corners of the audience. Other features include onboard Class-D amplification, DSP and Dante Digital Audio Networking, tour-grade enclosures, and comprehensive mounting options, including pole mount, wall brackets, yokes and rigging inserts.

# The largest 500 Series selection anywhere.



## INWARD CONNECTIONS

### PULTEC EQP-500S

500 Series EQ delivering the same specs as the Pultec EQP-1S3-SS

### THE BRAT

The perfect 4-band parametric EQ for any audio surgeon's toolkit

### MERIS MERCURY7

The world's first 500 Series Algorithmic DSP Reverb



### MILLENNIA HV-35

Authentically transparent preamp for unrestricted creativity

### MERCURY AM16D

Beautiful, musical classic 60s American transistor-type pre

### NEVE 1073LB

The quintessential mic pre repackaged for your 500 Series rack



# Tech // reviews

## FOCAL TRIO6 BE MONITORS

Active Speakers With Integral Sub and Focus Mode



The Trio6 Be features Focus mode allowing you to jump between a 2- and 3-way listening experience.

**F**ocal's studio monitors are a relatively new division of the company with a principal focus on audiophile, install, consumer and automobile transducers. Nonetheless, Focal has made a name quickly with a range of models from the affordable Alpha50 starting at \$299 each, up to the SM9 at \$3,795 each. Beyond that is the Grande Utopia passive monitor favored by some mastering houses, which can cost as much as a Porsche 911 Carrera S once you buy the amps.

The Trio6 Be is a three-way system in a front-ported cabinet available in textured gray or optional Red Burr-Ash natural wood finish. Dimensions of the 0.86-inch (22mm) reinforced cabinets are 520x278x360 mm. At 44 pounds each, you'll need a sturdy stand or console/tabletop to hold these adequately.

Focal's thinking is a bit different when describing a three-way because of the Focus mode. Rather than calling the components woofer/midrange/tweeter, the company prefers subwoofer/woofer/tweeter. The active sub is an 8-inch composite, the midrange a 5-inch composite, and the tweeter a pure Beryllium inverted

dome. The woofer/tweeter can rotate for vertical or horizontal orientation of the monitors. For this review, horizontal use made more sense, so I left them as is.

Focus mode is the same concept first found in the pricier SM9. Because the cabinet is internally sealed in a way that isolates the sub, the user can switch between a proper three-way and two-way monitor at the flick of a footswitch (not supplied). When in two-way Focus (90 to 20k Hz,  $\pm 3$  dB), the woofer and tweeter are in play alone, and the crossover is changed to reflect the preference. In three-way Focus (35 to 40k Hz,  $\pm 3$  dB), the sub is engaged, which brings in the lower octave and a half. The switch is silent and fast, which gives you the ability to A/B quickly. The tuning between modes is well done with nothing sonically startling, just a pleasant

### TRY THIS

When you have the ability to use monitors in both horizontal and vertical positions, try both ways. Keep in mind that in either orientation, the tweeter should be at ear level for the best possible experience. How the low end reacts near a boundary can change vertically and horizontally, so you may have to alter compensation EQ. It may surprise you how differently monitors sound when flipped on their side or bottom.

and easy jump between a full-range and LF limited monitor. It's a great way to work. For example, Focus allowed me to drop the low end to check electric guitars and other midrange-y mix elements without the added boom.

Amplification is 200 watts for the sub, 150W for the woofer and 100W for the tweeter. On the rear is an XLR input, +4dBu/-10dBV sensitivity switch, and variable LF, LMF, and HF EQ set at 250 Hz (shelving), 160Hz Q=1, and 4.5 kHz (shelving), all variable +3/-3 on a rotary detented pot. Also on the back are the 1/4-inch inputs for the latching footswitch. I used a Boss FS-FL that I bought for \$29.95 at Sweetwater.

### MAKING TRACKS

I first placed the Trio6 Be monitors in Blackbird Studio A, and after a time, they sounded loud, well-balanced and full range. At first listen though, the bottom end was tight and unimpressive. As I've experienced in the past, a break-in period is 100-percent necessary to allow the monitors to open up, so I parked them in another studio and let time work its magic. After a few weeks, it was a different experience. The bottom end bloomed, and I could better hear the benefit when using Focus.

Next, I put them into Studio I, a smaller production room that isn't as acoustically adept as A. Here, the EQ on the rear of each speaker allowed me to dial them in correctly. Because the Studio I control room has access to the shared Studio A live room, I used them on tracking and overdub sessions. When listening to music over a range of styles from rock to country, to indie pop, they gave me the confidence I needed when fine-tuning EQ.

In Studio I, there's no console, so I'm used to mixing and matching preamps, EQs and compressors from rackmount to 500 Series units of various styles and type. When getting kick drum sounds, I used a vintage 1073 EQ boosting 56 Hz, notching out 330 or 390 Hz, then adding a touch of 3.9 or 4.7 kHz for beater click—it was sonically beautiful and full-bodied. On another date, I used a Manley Massive Passive with the same formula, and again it sounded delicious, complete and just what the kit needed to rock the low end.

On other tracks, I was able to get great sounds on acoustic and electric guitar, vocals, and hand percussion. The ease of getting a great sound when you know the instrument, player and signal chain is solid is something I look for during a monitor review—that and perspective. If everything is right and you're still struggling, or it doesn't translate after, it's probably the monitor. The Trio6 never let me down.

Because we split the feeds to two control rooms when we track at the Academy, I also have the luxury of immediately walking into another control room and hearing the tracks in another environment, usually on ATCs. The perspective during tracking and the next day in other studios cutting overdubs always translated perfectly.

## PRODUCT SUMMARY

**COMPANY:** Focal  
**PRODUCT:** Trio6 Be  
**WEBSITE:** [www.focal.com/usa/en/](http://www.focal.com/usa/en/)  
**PRICE:** \$2,795 each  
**PROS:** Solid reference monitors with Focus mode offering 2- and 3-way listening.  
**CONS:** Auto-shutoff can't be extended.

If I had one complaint it has to do with the Euro-stipulated auto-shutoff feature. You can't turn it off or extend the time, and I got stung repeatedly. I know this is the "green" thing to do but it's always a surprise when you take a break and the speakers are off when you return. They do come back after audio is introduced but it takes more dB than you'd think.

### IN FOCUS

The Trio6 Be is a high-end listening experience. They are well-balanced low to high, with the Beryllium tweeter singing silky and sweet at the top of the top end. Jumping Focus back and forth is a great tool for referencing different instrument groups and also gives your ears a break from time to time. Too much low end on a long day can tire your ears out quickly. It's a luxury you pay for with Focal's Trio6 or SM9, but worth the price.

I found the Trio6 Be to be very well suited for tracking. Sessions always translated well across rooms, and it was easy to get sounds on a range of instruments. While the price is dear, if you're looking for a monitor that affords you a dual, tailored listening experience, especially in a small room, the Trio6 Be is your Huckleberry. ■

*Kevin Becka is Mix's technical editor.*



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## BAE 1023L 500 SERIES MODULE

Accurate 1073 Redo with EQ Enhancements



**T**he 1023L is BAE's single-rackspace 1023 mic pre/EQ module repackaged into a three-slot 500 Series module. Like the 1023, the 1023L has an all Class-A circuit design comprising a mic preamp with up to 80 dB of gain followed by a 3-band equalizer section and 18dB/octave highpass filter. Like the original Neve 1073 module, it offers a choice between 300- and 1,200-ohm microphone input impedances, and there is a 20-position rotary switch for changing gain in 5dB steps, from -20dB line level up to +70dB microphone level.

There are front panel switches for Line/Mic, Phase (polarity flip), 48-volt phantom power on/off, EQ in/out, 1,200/ 300-ohm mic input impedance, and a DI switch for activating the (150k-ohm) ¼-inch front panel direct input jack. Being a 500 Series module, the same rear panel edge connector input connection is shared for both microphone and line-level inputs. Along with the vast amount of gain available for either mic or line-level

sources, this opens up interesting overdrive possibilities.

Compared to the original Neve 1073, the 1023L's expanded range of EQ frequency choices is significant and noteworthy. Unlike the 1073's high-frequency shelving EQ fixed at 12 kHz, the 1023L's high-frequency section is similar to the Neve 1084 module with its selectable 10, 12, and 16 kHz frequencies and adds 20 and 24 kHz for a total of five frequencies.

### ON THE INSIDE

A close look inside the 1023L reveals solid-looking hand wiring for all the rotary controls and switches. There are five printed circuit boards that plug into a hand-soldered motherboard—exactly the same as the inside of the rackmount version. Swiss-made Elma rotary switches are used throughout, and Carnhill VTB9045 and VTB9046 transformers are used for the microphone and line-level input paths, respectively.

A large Carnhill VTB1148 output transformer drives loads down to 65 ohms and Carnhill St. Ives inductors are used on both the low and midrange EQ boards. A Traco Power DC-to-DC module is used to convert the 500 rack's ±16-volt supply voltages into a single +24-volt rail. Because the 1023L occupies three slots, there is more than enough current available for the DC-to-DC conversion. In my testing, I had no headroom issues driving my Pro Tools 192 I/Os calibrated for +4 dBu operating level—it worked identically as an original Neve 1073 module.

### IN THE STUDIO

The 1023L fit perfectly and took up half of my six-slot API 600B Lunchbox. Operationally, I found it better to locate the module (and API rack) higher up in my outboard rack directly in front of me. After a few sessions, I could find “frequencies of interest” on the three EQ sections more by “feel” or by ear and without actually reading them on the densely packed front panel. I liked this, and also the centrally located output level control; it's easy to find in a hurry and set recording levels precisely “on the fly.”

Inserted into my Pro Tools mixes, I found that the 1023L worked fabulously and I reserved it for top-level mix elements—“high-line” lead

### TRY THIS

For vocals, I used my transformer mic splitter box to connect the same condenser microphone to both the BAE 1023L and one of the channels in my (transformerless) Millennia Media HV-37 preamp. I purposely used more gain than necessary and cranked the Output knob down halfway on the BAE, but kept the HV-37 totally clean. I recorded to two separate tracks, and during the mix I had the luxury of comparing and mixing together these two vastly different-sounding recordings.

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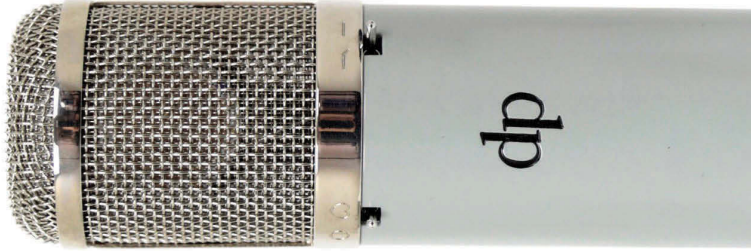
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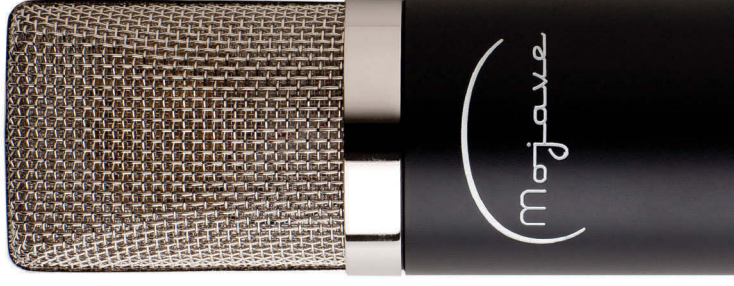
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vocals and solos, whenever I wanted that classic, warm and fat Neve tone. Pushing more level into the module using the Mic/Line Gain control is a time-tested, smooth tone enhancer for cleanly recorded tracks.

My first recording was an ordinary-sounding Ibanez Model AEF18LE acoustic guitar. I used an Audio-Technica AT4081 active ribbon microphone placed at the 12th fret, the 300-ohm impedance position, and 60dB gain position. I went straight to the analog input of my HD192—no special A/D or I/O box. I used the 50Hz highpass position and +2dB @ 10kHz shelving. This mic requires phantom power so I muted the output, before turning it on/off and before switching input impedance to avoid a loud “pop.” I thought this mic and the 1023L produced a servable acoustic guitar feel with a thick sound good for chunking rhythms. To be honest, it sounded better than it did out in the room!

The 1023L shines as the ultimate electric guitar tone-sculpting tool with loads of tonality choices built on settings of the Mic/Line Gain, Output control, and equalizer. Pushing low frequencies tends to break up the sound sooner in a very pleasing way and the mid-range equalizer frequency choices (including the new ones) hit all the best spots when recording guitars. I liked this expanded EQ over the 1073's to carve individual guitar tracks to mesh together as required—there is nothing like this sound.

I started with a Shure KSM8 Dualdyne dynamic microphone placed off-center of the 12-inch speaker's dust cover. The amp sound heard out in the studio was set clean for my Fender Strat. I used 50 dB of gain and the Output knob straight up at 12 noon and no EQ. So much gain produced a grungy sound back in the control room and I found by setting the highpass filter at 160 Hz and then boosting at 110 Hz (shelving) I could dial in just the right amount of low-frequency “size” to fit in with the “wire choir” guitar production.

A big surprise was boosting up to +18dB the high-frequency EQ

## PRODUCT SUMMARY

**COMPANY:** BAE Audio  
**PRODUCT:** 1023L 500 Series Module  
**WEBSITE:** [www.baeaudio.com/products/1023l](http://www.baeaudio.com/products/1023l)  
**PRICE:** \$2,400 MAP  
**PROS:** Many tonal choices, great classic sound.  
**CONS:** None found.

set to 20 or 24 kHz; this added a shimmer and airiness akin to standing in front of the amp out in the studio. Backing the 1023L's gain down in the 25 or 30dB area and running the output control full up cleans up the preamp's sound, and I was able to hear the sonic details of the amp, the guitar and the studio's room.

My guitar player used a Suhr custom electric guitar with both humbuckers and single-coil pickups. This time I used a RØDE NTR active ribbon mic (figure-8 pattern) close in and aimed directly at the center of the speaker's dust cover. The 1023L was at minimum gain (20dB position) and I used the EQ's 510Hz, 700Hz and 1.6kHz positions for either boosting or for scooping out. I used the highpass filter set to 50 Hz or 80 Hz and I liked to also boost 80 Hz using the shelving low-frequency section at the same time. You can do the something similar with a Pultec EQ, but I like this better. I then had the option of switching in the high-frequency shelving section at 10kHz to dial-in the overall brightness.

The 1023L's handy DI input worked well for a Yamaha RBX 170 four-string electric bass guitar. Again the EQ section offered plenty of ways to dial in a sound but using a little too much gain to slightly overdrive the Retro Doublewide compressor next door (slot) in the rack worked together as an awesome team.

Fitting the original circuit, three transformers and the rest of the quality components into a three-slot 500 Series module is no easy trick. To have it operate well, include additional features, expand the EQ frequency choices and also sound great is an amazing feat. The 1023L is a worthwhile investment for any studio. I'll take two, please! ■

*Barry Rudolph is an L.A.-based engineer/educator. Visit him at [www.barryrudolph.com](http://www.barryrudolph.com).*

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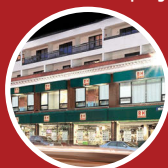
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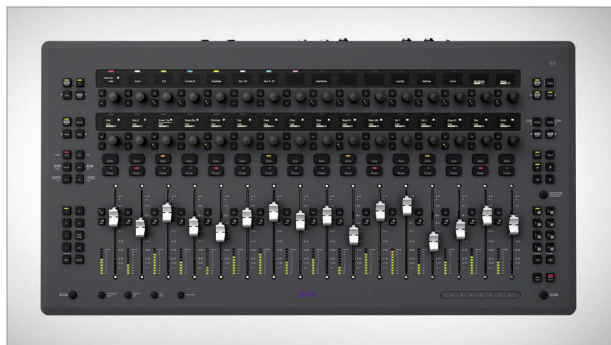
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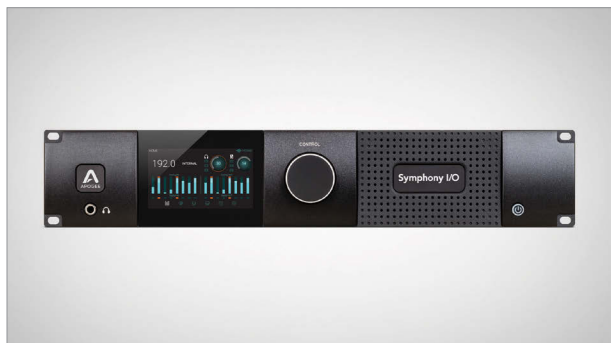
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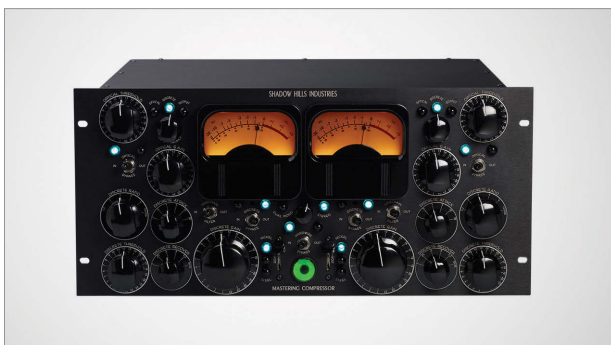
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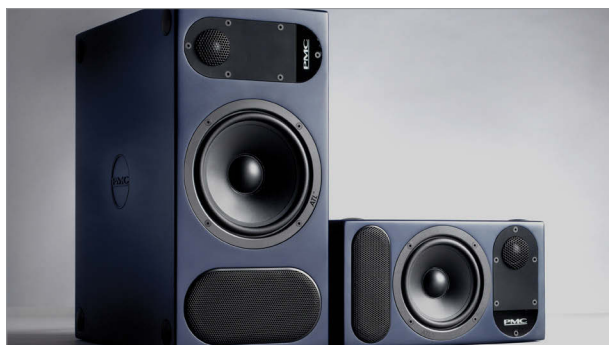
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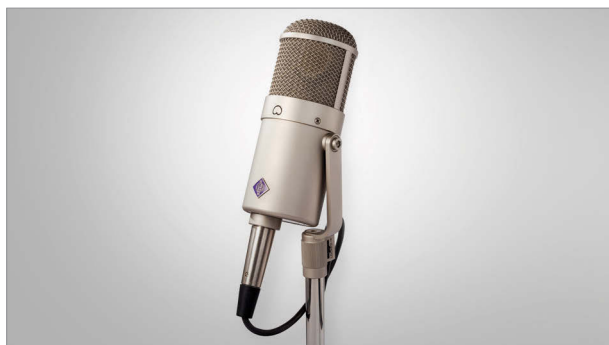
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## SLATE DIGITAL FG-BOMBER

### Unusual Multiprocessor Adds Pizzazz to Tracks



Figure 1: FG-Bomber is loaded here into the first slot of the Virtual Mix Rack plug-in, an expandable rack that can host up to eight compatible Slate Digital modules. Other modules in the browser (located to the left of the rack slots) can be dragged into empty slots.

**F**G-Bomber (\$129) is a new module for Slate Digital's Virtual Mix Rack plug-in (VMR), an effects rack into which you can load up to eight compatible Slate signal-processing modules. Combining digital models of analog transient processing, sustain-enhancing compression and tube saturation into one module, FG-Bomber's GUI is designed for ease of use—just four controls and a VU meter. Bomber's intended applications include individual tracks, subgroups and full mixes.

I reviewed FG-Bomber in VMR Version 1.2.0.13 and Digital Performer 9.01, using an 8-core Mac Pro running OS X 10.9.5.

#### BOMBSHELL

Slate Digital offers the VMR rack shell and one module (the Revival Sonic Enhancement Processor) as a free download. The effects rack (available in AAX, AU, RTAS, VST2 and VST3 formats) also offers compressors, equalizers, the company's Virtual Console Collection and, of course, FG-Bomber as optional modules, each of which require purchase. Simply drag modules from the browser—located to the left of the rack—into the rack's empty slots to chain processors in series (see Fig. 1).

Bomber's continuously variable Drive control is the cornerstone for the module's operation, yet the operation manual

is vague about what processing it induces at its different settings—no doubt to protect trade secrets. Nag that I am, I managed to extract more details from Steven Slate, CEO of Slate Digital. The Drive control adjusts the input gain ( $\pm 15$  dB) applied to a network of processors daisy-chained in series: a transient enhancer, compressor and tube-like saturator. Transient enhancement is produced using harmonics processing instead of envelope shaping, as employed by products such as SPL Transient Designer. The compressor was designed to increase sustain, but it also adds harmonics. The saturation stage kicks in at high Drive levels.

A VU meter shows the input signal's level after drive is applied. An icon of a fused bomb marks the center point of the meter's range; this is noted in the operation manual as the sweet spot for most applications, and that's certainly true for processing drums and percussion. Specifically, the meter's needle hits the bomb icon at the point where maximum transient enhancement is being applied, creating the greatest increase in attack and impact. If Bomber's processing sounds too percussive for a particular application, boosting the Drive control further will progressively increase compression and round off transients, while enhancing sustain. Note that even with the Drive control set fully counter-clockwise, some compression is still occurring.

The best way to find the Drive control's optimal setting is to initially boost Bomber's Intensity control—a wet-dry balance control—all the way to 100% (passing wet signal only) so you can clearly hear what the processing is doing. Once you've set the Drive control for the desired blend of processing, lower the Intensity control to add back dry signal to taste. A little bit of wet signal goes a long way, and you'll sometimes find yourself using very low Intensity settings.

Bomber's Tone control—a three-way switch—changes its compressor topology. According to the manual, the Present switch setting “focuses the effect on the mid frequencies” and increases transient attack, sustain and perceived width. The Fat setting also increases transient attack, while reportedly enhancing perceived depth and richness and making the bottom end sound bigger and wider. The Tight setting applies processing more evenly across the audio spectrum than the other two, resulting in increased clarity and punch and tighter lows. A separate Output control adjusts Bomber's output level  $\pm 12$  dB.

#### TARGET PRACTICE

Using the Fat setting and raising the Drive control so that the

meter's needle hit the bomb icon, Bomber made a subgroup for drums pop. Cranking the Intensity control all the way up, the snares' rattle and room tone were all but eliminated, making the drums sound very pointy and dry. While the processed subgroup sounded way too extreme when soloed, mixing it in with the original tracks sounded awesome. The drums had noticeably greater impact. Cranking the Drive control all the way up and switching to the Present setting sounded even better, boosting the snare's sizzle and making the room sound five times larger. Awesome!

I loved what Bomber did for male lead vocals, too. Using the Tight setting, adjusting the Drive control so that signal peaks hit the meter's bomb icon and setting the Intensity control to 50%, the vocal sounded slightly richer and consonants significantly more intelligible. It sounded like the singer had stepped a foot closer to the mic and was more energized and articulate—perfect for this up-tempo song.

I wasn't wild about using Bomber on my mix bus, although I can envision it possibly being used on some rock and EDM mixes. While Bomber added rich luster and enhanced clarity to full mixes, and its transient enhancement sounded very natural, its compressor wasn't transparent enough to add density without audible modulation—even with the Drive control turned all the way down (fully counter-clockwise). For that reason, I'd only be tempted to use it on mix buses for rock, EDM and other productions where light pumping might sound appropriate.

I tried using Bomber while mastering an alt-rock mix but felt it didn't offer enough control to dial in the sound to my satisfaction.

I also didn't like what Bomber did for electric bass guitar. In order to enhance transients enough to make the track pulse, I had to turn up the Drive control to where the compressor squashed and thinned out the sound slightly. (At -12.7 dB, the Drive control was barely turned up.) I got better results using another transient processor in my arsenal.

### SHOULD YOU GET BOMBED?

Bomber's lack of independent controls for each of its processors makes the perfect setup sometimes difficult or impossible to achieve; you'll sometimes need to lower the Drive control more than you'd like for one process to prevent adding too much of another. But when Bomber works, it sounds awesome.

Bomber's only other drawback has to do with the VMR shell itself: It doesn't provide Undo and Redo buttons. That's easily tolerated once you hear what Bomber can do for drums and vocals. If you're looking for something uniquely musical to add to your plug-in arsenal, Bomber is worth the coin. ■

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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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### Continued from p. 51



Doug McBride and Beth Liebling at Gravity Studios.

### GRAVITY STUDIOS

Gravity producer Doug McBride worked with Nashville-based alt-country trio Maybe April...McBride also completed the debut album for a yet-to-be-named supergroup led by Beth Liebling (Hovercraft), alongside senior staff engineer Sam Fell, who contributed to song structure as the band created the songs in the studio...Fell recorded in-house artist Aras Volodka to 2-inch, 24-track tape, as well as a vintage Mark I Rhodes, baritone guitar, early '70s Ludwig kit, an upright tack piano, and flute. The songs had anywhere from three to eight musicians performing. Most of the musicians were located within Studio A; the flutist was located in Studio B with a Flea 47 during tracking, while the tack piano was placed all the way in the front office...Fell also worked with local band Old Grand Dad on a three-song EP. The session was recorded live with some minor overdubs...Tim Yamaya and Dan Farnsworth have been producing several singles with artist/group Eric Lee Carpenter. ELC started the new batch of songs recording the band with Fell; Yamaya and Farnsworth then took over to produce, adding a range of synths and percussion.



Engineer Fil Kinetic, instructor and engineer Wendy Van Sickle, and pianist Adrian Metzger at Horse-Drawn Productions.

### HORSE-DRAWN PRODUCTIONS

Engineer Eric Yoder recently mixed a new track for DJ Sultan, featuring Elephant Man. The vocals were tracked in Jamaica, but Sultan wanted an American-pop sound, so he came to Horse-Drawn. The session was created on a PC laptop; by the time the session reached Chicago, it was all in Pro Tools, at close to 100 tracks. The song was then mixed via Pro Tools on a Yamaha DM2000, using outboard gear. The final was printed through a TC Electronics M5000, and then Horse-Drawn chief engineer, Jackson Bomher, did the final mastering in the Indigo Mastering Suite. Elephant Man added a lot of layers of vocals so different textures could be created. The song will be released on Sultan's upcoming album, release date yet to be announced...Concert pianist Adrian Metzger recorded Prokofiev's Piano Sonata No. 8 and Ravel's Le Tombeau de Couperin on a 9-foot Model D Steinway grand piano in the live room. The project was produced by Metzger and Wendy Van Sickle, and engineered by Yoder, Mitchell Soja and Van Sickle.



Jimmy Fountalas at Stonecutter Studios.

### STONECUTTER STUDIOS

Singer/songwriter Heidie Fifield recently completed her debut EP *No Love Like Our Love*, produced, engineered and mastered by studio owner Chris Steinmetz. On the Track "Blue Eyes," Steinmetz ran various source sounds through a Chaos pedal and then into a Leslie cabinet for some haunting soundscapes...Marty Casey (Lovehammers, L.A. Guns, *Rock Star: INXS*) has been prepping the release of "Valentina," which was co-written, recorded and produced by Steinmetz...Metal band Fools Brew are currently finishing their second album *The Reckoning*, with Steinmetz engineering and producing. Steinmetz used iZotope Ozone 7 and Nectar plug-ins for some intense vocal sounds...Steinmetz is also wrapping up production for the new project Superbig's album *Barely Holding On*. He used vintage Neve 1073s for vocals, as well as a UAD 610 preamp followed by an Empirical Labs Distressor for guitars. He also used a wide array of the UAD plug-ins for mixing...Brent Brown recently completed his new album *For Play*, which Steinmetz produced. He made regular use of SoundToys Decapitator and EchoBoy plug-ins.



# PSI AUDIO AVAA C20

## Low-Frequency Active Acoustic Absorber

**S**witzerland-based PSI Audio adds the Active Velocity Acoustic Absorber C20 to its inventory of high-end studio and audiophile speakers. The AVAA is an active broadband absorber that suppresses low-frequency reflections between room boundaries—walls, floors and ceilings—and is intended to work best along with passive midrange and high-frequency acoustic treatments. The AVAA C20 is most effective between 15 to 120 Hz and does not affect upper frequencies at all.

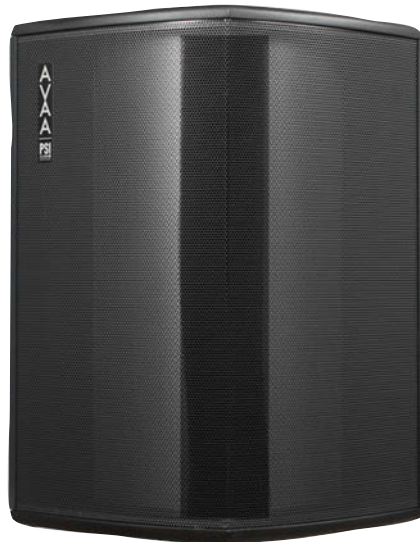
### CORRECTION NEEDED

In small mix rooms, midrange and high-frequency passive velocity absorber treatment panels work well to reduce flutter echoes and to adjust the room's RT-60 decay time above 300 Hz. But the wavelengths of the low frequencies are longer than the room's physical dimensions and cannot be reproduced in the room without reflecting axially back and forth between rigid and non-moving parallel boundaries—walls, floor, and ceiling. Without proper bass trapping to lessen the severity of the inherent modal issues in small rooms, the bass frequencies are uneven, indistinct, and tend to mask the clarity of the upper frequencies at the same time.

To absorb down to 20 Hz would require a porous absorber ideally up to 4.3 meters thick and would have to be incorporated within the room's initial wall construction. This is not an option in small project/home studios and theaters that are usually conversions within pre-existing structures.

### HOW IT WORKS

The AVAA C20 measures 424x509x300 mm (WxHxD) and looks like a wedge-shaped powered monitor speaker with a metal protective front screen. The AVAA emits no sound or “anti-noise” and does not impact the direct sound of your speakers or other sources in the room itself. The AVAA works like a passive velocity absorber but is more efficient, takes up much less space and is



The C20 uses microphone to measure acoustic pressure, then corrects LF (15 to 120 Hz) with a reactive membrane.

designed to work in conjunction with your existing, passive acoustic room treatments. A single AVAA has a 0.2 square meter surface area and will provide up to 20 times the equivalent absorbent area—4 square meters.

The AVAA C20 uses an all-analog, patented design to increase the acoustic impedance of the air by acting as a pressure “sink” at the boundary(s) where it is placed.

Within the unit's MDF cabinet is an omnidirectional pressure gradient microphone mounted in front of a sheet of stainless steel perforated with 0.15mm-wide slots. This perforated sheet presents an acoustic resistance that allows a sound wave's pressure component (what our ears hear) not to pass and build up in front of what PSI calls the “Silent Chamber.” However, the velocity component of sound (the air molecule movement) passes freely through the slots into the chamber.

This movement of air needs to be compensated for to keep minimal acoustic pressure inside the chamber. This is achieved using a reactive membrane, or piston velocity transducer, in the back wall of the chamber. The membrane is a 21cm woofer driver used in the company's A21 powered monitor loudspeaker.

The microphone “tracks” the pressure in front of the perforated sheet and sends a bandpass filtered signal to a super-fast slew rate Class-A/B power amplifier. In response to this signal, the amplifier/membrane system reacts instantly and attempts to keep the pressure low by sucking air velocity into the front of the AVAA.

Installing two AVAAs is the minimum requirement for left/right symmetry, and multiple AVAAs will provide coverage in larger rooms. Each room installation is situational and varies with the room's size and geometry. A certain amount of experimentation is required for optimum performance.

Minimum room size is 10 square meters and my mix room plus adjoining living space is bigger. I mix music in a small alcove that measures: 2.9x2.4x5.8 (WxHxL) meters with the left side-wall ending at 2.2 meters and opening up into my living room area. However, up until that point, the left and right side walls

are symmetrical up to the listening position.

I have passive absorption panels of various thicknesses placed on almost every surface, and at the point of over-absorption that can cause rooms to sound dull and lifeless. But I still have modal issues due to the low-frequency reflections and buildups.

I experimented with placing the AVAAs. Through trial and error and many comparative measurements using Room EQ Wizard, by far the best places were on the floor with one AVAA in each of the front left and right corners.

Each AVAA is a little more than 1 meter away from my left and right ADAM S2.5A monitors up on Sound Anchor stands and 1.5 meters away from my Mackie MR10Smk3 powered subwoofer placed on the floor equidistant between the ADAMs.

The AVAAs turn on with a toggle switch on the back, and you can hear a slight “thump” with a green LED lighting up through the front grille. There is nothing to adjust except for a Sensitivity control to reduce its affect in highly reflective rooms, but for 99 percent of the time I set it to the maximum or “Cal” position.

### I'M SOLD

The effect of the AVAAs is dramatic and not subtle! The bass became instantly tighter, more defined and evenly balanced throughout the entire

## PRODUCT SUMMARY

**COMPANY:** PSI Audio

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

**PRODUCT:** PSI Audio Active Velocity Acoustic Absorber C20

**PRICE:** \$1,999 (Distributed by Zen Audio Pro)

**PROS:** Excellent plug-and-play, low-frequency correction for small mix/edit rooms.

**CONS:** Expensive.

space and out into my living room.

The AVAAs flattened out the subsonic range from 50 Hz downward like huge bass traps that couldn't possibly fit into my room. With the low end controlled, I was able to dial in my subwoofer's location, level and crossover frequency properly. I immediately noticed less masking of the midrange and high frequencies, and the measurable differences in RT60 times, phase shift in the bass, and group delay is remarkable.

At another larger project studio with non-parallel walls and existing passive treatments, I tried just one AVAA on the front wall, and it produced a noticeable, measurable change.

With my two AVAAs running I arrive at a mixes faster with much less of a struggle to get the low and low midrange frequencies correct for bass, kick and drum sounds. Mixes translate even better now, and stereo imaging is more exact, with each pan position clearly locked in the stereo field. L/R reverb tails, midrange detail, and effect levels are more clearly heard and in proper perspective.

The AVAAs are the crowning touch to my small space's large set of acoustic treatments. Getting the low frequencies to sound correct has always been a puzzling mystery in small mix rooms. My pair of AVAA C20s is awesome as a portable problem solver, and my mix room has never sounded better! ■

*Continued from p. 30*



wall of these white bubbles,” Grueneisen continues. “It’s actually a gypsum-board panel that’s poured so it has these little balls on it. The panels can be put together to form a continuous wall. Interlam, the company that makes them, makes more shallow ones for visual interest in public spaces, but ours also act as diffusers.”

Grueneisen’s firm also designed perforated plywood panels with circular openings and cotton batting/insulation behind. “We

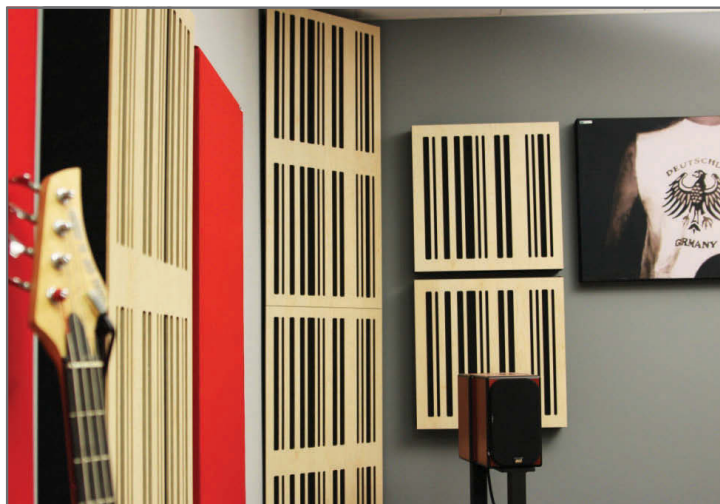
have a hard surface, but not a continuous flat one, so we don’t have reflections. They act as diffusers, reflectors and absorbers all at once,” he explains.

Building the new studio also offered Shapiro and his go-to engineer, Chris Fogel, the opportunity to re-evaluate their workflow. “I thought about the way I work now, and what I really wanted was a great recording front end, using primarily 500 Series modules and other outboard gear,” Fogel says. “My first purchase was a couple of Mercury Recording G810 racks. One is populated with mic pre’s from BAE, API, Helios, Chandler and others. The other [has] EQs and compressors from API, Shadow Hills, Tonelux, Standard Audio, etc. I record a lot of orchestras and string sections, so I picked up 16 channels of Grace pre’s and four channels of Pueblo mic pre’s that I use on my main room mics.

“Paul Cox wired the room so that mic panels feed the 500 Series pre’s direct, and created another panel that feeds the Grace pre’s direct to 16 channels of Pro Tools, so we have extremely short signal paths. We now have a great recording room with enough space to record 24 musicians.”

“Peter is a wonderful collaborator,” says Shapiro. “He understood the vision and executed it perfectly.” ■





## ALPHA SERIES

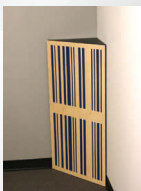
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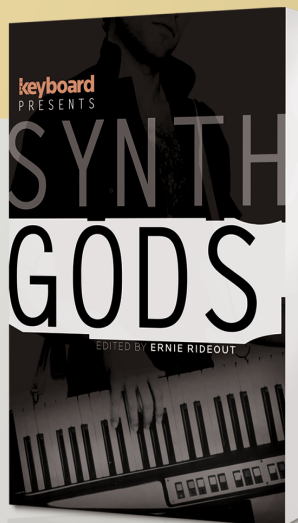
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## Think Again



By Kevin Becka

**T**he part of my job that excites me the most is when I come across new technologies and approaches that change the way I look at what I do, the gifts that make us all think again about how we approach our work and lives. I've written regularly about such discoveries, and recently I've come across some new approaches in production and manufacturing that surprised me and made me rethink what is possible.

This is *Mix's* studio design issue, and many of you may be thinking about low-frequency handling in small spaces. Traditionally, you'd have to use large, repeatable bass traps that eat up precious space. In this issue, Barry Rudolph reviews the PSI Audio AVAA C20 Low-Frequency Active Acoustic Absorber. The 28-pound unit acts to control room modes between 15-120 Hz. It is 100-percent analog, can easily be turned on/off and moved into different spaces, and doesn't emit a sound. Check out Barry's review for more info and his experience with this new tech.

As studio owners, engineers and manufacturers we all recycle and manage AC and lights to make our workplaces green and affordable. But most of us, me included, think it's impossible to go completely off the grid—unless you're John La Grou. John is owner and designer at Millennia Music & Media Systems. If you're not familiar, his company makes some of the best audio gear on the planet. This month, Millennia is moving to a new manufacturing facility sporting 48 solar panels. The rooftop rig is tied to the grid, 18.9-percent efficient and is planned to provide 100 percent of Millennia's electrical needs. Lighting will be supplied by 17 high-bay, LED units (208 volts) throughout the building, using half the power of fluorescents and delivering 95 lumens per watt at 5,000 Kelvin. By comparison, an incandescent bulb delivers 15 lumens/watt. The HVAC is high end, too, using the latest Mitsubishi VRF technology that intelligently cycles between 10 percent and 100-percent duty as required. You go, John!

After talking to Jayson Tomlin, VP Business Operations, Minnetonka Audio, it made me rethink how we'll all be sharing, instead of buying computers and software in the future. Ever heard of Amazon Web Services? Minnetonka is using this high-end cloud service to deliver computer power to users who wish to use Minnetonka's AudioTools every once in a while instead of buying an expensive site license. Think of it as a computer time-share using Minnetonka AudioTools Cloud through AWS computing. First, you configure your rig, processing speed, and all the other goodies you'd normally have sucking power and putting out heat in your home/edit-suite/office. Then on a job-by-job basis, you'd upload a gig to the cloud to be

processed by the AudioTool of your choice.

The example I was given was a company that just bought the foreign rights to broadcast a series here in the States, and needed to be sure that every episode complied with U.S. loudness standards. All of this could be uploaded to the cloud, and then the process (AudioTool) applied. You'd pay for just the processing, not the gear. Once bandwidth allows (wait for it...), there's no reason we couldn't all do our heavy lifting from a centrally shared computer—and with great speed. All it would take would be a simple Web-based upload interface driven from a smartphone, tablet—you name it—that would kick files from one server to the next. There's no reason work could not be done from a screen and keyboard linking us to our virtual PC that we'd "rent/buy" with whatever features and software we wanted. These rigs could change daily depending on our workload and needs. Who needs hardware computers when they're out there floating around waiting to be configured and used?

A few months back, I wrote about the DJI Osmo camera I've been using to create content. Recording audio is always a challenge with the Osmo as the onboard mic is awful; my next step is a wireless system. Gary Boss, Marketing Director at Audio-Technica, showed me a great new wireless rig that stacks the company's System 10 to make a dual-channel, portable, hot-shoe mountable receiver so you can quickly record audio for wide shots and record in stereo, or use two lavs to film an interview with separate feeds, all directly to the camera.

Sennheiser has a different take using the MKE 440 that releases this month. It's a V-shaped stereo shotgun designed to shape the incoming sound to the audio inside the visual frame of reference. The disadvantage with classic stereo recording (X/Y, M/S, A/B) is that it includes off-camera noise; the 440 eliminates sound out of the frame by design. The two shotguns are shock-mounted internally to reduce handling and wind noise. Pretty slick!

Rethinking isn't just about our work but our loves, lives and those in our circle of family and friends. This last month was a tough one as I lost my best bud, Rex the Wonder Dog, who was suddenly called back to his home planet. On the same day, David Platillero, a student of mine, was riding his bicycle home from class and was hit by a distracted driver. Among David's injuries is a back broken in two places leaving him without the ability to walk for the rest of his life. The point is, the Universe has a way of challenging us and making us rethink our lives, so don't take anything for granted. Tell those around you how much you value their love, friendship, and having them in your life—you never know when things will change. ■





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