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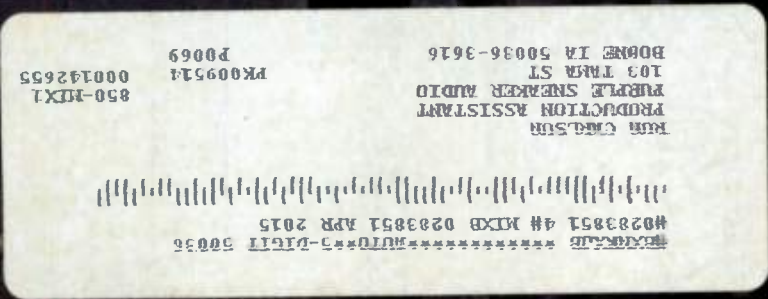
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On the Cover: Mastering engineers Joe Palmaccio, Andrew Mendelson, Gavin Lurssen and Michael Romanowski outside Lurssen's Hollywood studio during Grammy Week, 2014. Photo: Greg Allen.

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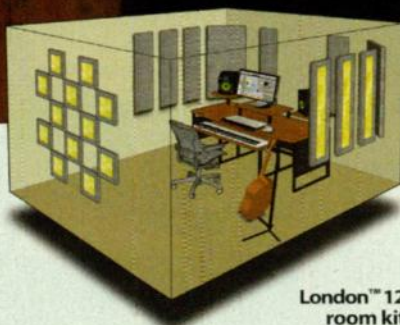
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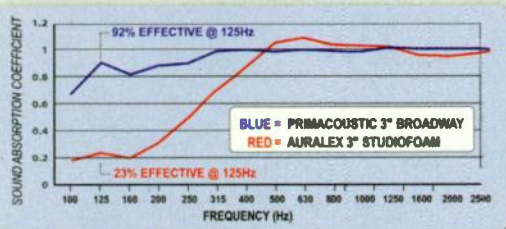
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From the Editor

THE MIDDLE CHILD

BY TOM KENNY

While the four mastering engineers pictured on this month's cover are certainly deserving, each with an extensive and stellar body of work, I admit, as I did to them, that I had my reservations. What about Ludwig and Grundman and Sax and Marino? What about Stubblebine, Jensen, Wilder, Meller and Brian "Big Bass" Gardener? All of them Hall of Fame-level mastering engineers, all very active, but none has ever been on a *Mix* cover. So why these guys?

Maybe it has to do with the fact that I'm a middle child from a large family, and often found myself straddling two generations within my own house. While I leaned toward the ideals of the former, I was definitely enmeshed in both. These four engineers—Michael Romanowski, Gavin Lurssen, Andrew Mendelson and Joe Palmaccio—came of age professionally in the waning years of the mentorship era, then forged their careers at a time when the entire recording industry, primarily because of shrinking budgets and declining sales, abandoned the very model that it was founded on.

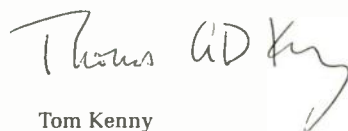
So they, and many others like them across the globe, have straddled two eras. The analog age of multi-room studios and engineering staffs, and the emergence of digital dominance and increasing isolation. From the monolithic distribution format of the CD to the brave new world of streaming and download and mobile delivery. Always with a hand in the old and a foot in the new. They are the middle children of mastering. I guess I felt a kinship.

It's not always easy finding yourself in the middle of two generations, especially when culture in general, and our industry in specific, is undergoing such rapid change. While there is the benefit of wisdom from the past, the future can appear riddled with uncertainty. But that can also be an advantage: Because the future is uncertain, you get to make it up! And because you've had the benefit of a mentor, a teacher or an up-close and

personal brush with old-school techniques, you have the opportunity to pass that on to the next generation, in a host of new ways. With each new rollover in generations comes great opportunity. If you take advantage of it.

The term "mentoring" is bandied about quite a bit these days in recording, as evidenced by efforts from SPARS, the Recording Academy and countless local and regional organizations seeking to fill the need. Professionals are genuinely looking for new ways to pass on the collective knowledge of an industry, to supplement the learning process that the schools initiate. I've found over the past couple of years that the motives are pure; any time a group of like-minded individuals comes together, having attained some level of success, there follows a desire to teach, to tell the world what they've learned. Sometimes it's subtle, sometimes overt.

Romanowski, Lurssen, Mendelson and Palmaccio each carry a certain swagger in their own way, a coat of confidence, and they should. They are good at what they do, and they put in the hours and hours of hard work necessary to get to this point in their careers. But they all bow down themselves and thank the stars that they stand on the shoulders of giants. They have complete reverence to the Masters of Mastering, and are grateful to those who took the time to teach them and give them the space to learn on their own. But in the here and now, they sometimes find themselves alone in their rooms, doing their work with a combination of classic and modern tools and techniques, looking into the future and wondering, "How do we pass this on?"



Tom Kenny
Editor, *Mix*

CORRECTIONS

Proper Credit

The photograph accompanying the Mike Spitz obituary at mixonline.com should have included proper credit, for Dr. David Robinson, a friend and colleague of Spitz. The correct credit is "Used With Permission. (c) David W. Robinson/Positive Feedback Online." Robinson's site, www.positive-feedback.com, is billed as a "creative forum for the audio arts," with an emphasis on high-end home systems. But it's an excellent online resource for audio professionals as well.

Jennifer Warnes Photo

In the February 2014 issue "Classic Tracks" story about Jennifer Warnes' "First We Take Manhattan," the photo of Warnes should be credited to Norman Seef. *Mix* regrets the error.

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New Gear From Winter NAMM 2014

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At Winter NAMM 2014 in Anaheim in late January, **Universal Audio** kicked things off with the introduction of the Apollo Twin, a sleek 2x6 Thunderbolt audio interface for Mac, combining high-quality 24/192 kHz audio conversion with onboard real-time UAD SOLO or DUO Processing. UA also introduced Union, onboard audio processing that enables the mic preamps to sound and behave like the world's most sought-after tube and solid-state models.

PMI showed the prototype for a new 8-bus Trident console, starting at 16 channels (the unit we saw had 24, which would price it around \$24k). The split inline design features multiple mic/line inputs, transformer options and EQ on every channel, with independent mic/line gain control. And **API** showed The Box console and introduced the 505-DI Direct Input module, which features Tone and Bright buttons and a 100k/400k variable input impedance switch.

Radial Engineering showed the new Space Heater, an 8-channel tube-summing mixer in send/receive stereo pairs. It is packed and solid, yet fits the same depth profile of the Workhorse 500 Series rack. It is expected out late-spring/early summer. **Rupert Neve Designs** debuted the 551 EQ, the first and only 500 Series inductor EQ designed by Rupert himself. The 3-band model features custom wound inductors and transformers. Jonathan Little from **LittleLabs** had his new "Pepper" box on hand. It's a slick guitar recording and live sound tool that lets you insert pro processors and stomp boxes across the signal path, then precisely match the level for re-amping.

Lynx, meanwhile, had true Thunderbolt connectivity on display, chaining six 32-channel Auroras for 192 channels on a single cable. They also had a brand new 12-core Mac tower in the middle of it all.

Focusrite showed the new iTrack Dock featuring dual Focusrite microphone preamps, two line inputs and an instrument DI, independent stereo monitor and headphone outputs, and a USB port for class-compliant MIDI instruments and controllers. **Equator** had the new emc controller with Bluetooth, three stereo inputs, two stereo outs, speaker switcher, recessed trim adjustment and large calibrated volume control.

If there were one product category that was up for the "Most New Gear" award, it would be speakers. **JBL** showed its new, and very affordable, LSR305 and LSR308 monitors featuring 5-inch and 8-inch woofers, respectively, and 1-inch silk dome tweeters. **PMC** had its TwoTwo series on hand in its demo room. They come in 5-, 6- and 8-inch models and the front of each unit features the company's transmission line vent. **Cerwin-Vega** displayed new 4-inch XD4 and 5-inch XD5 full range systems, and 8-inch XD8 powered subwoofer. **Blue Sky** had the Star System One 2.1, comprised of a single Sub 12D digital powered subwoofer and two Sat 6D digital satellite speakers.

Neumann's KH 310 is a three-way active tri-amplified monitor with a Mathematically Modeled Dispersion Waveguide (MMD), flexible acoustical controls, various input options and an extensive range of mounting hardware. **Sonolyne** revealed the SRP Series speakers with five models from the small SRP 350, through the SRP 400, 500, and 600, to the large SRP 800. **Genelec** had some new models on hand including the 8010 compact monitor featuring a balanced XLR input, 3-inch bass driver, 3/4-inch tweeter and Class-D power amplifiers. Also showing was the M040, a two-way system featuring a 6.5-inch woofer and 1-inch tweeter. **PreSonus**, meanwhile, is now shipping the entire line of its StudioLive Active Integration speaker line, with the Temblor T10 sub due out within a few weeks.

QSC, which had been hinting at a big new product for a few months, showed it off. The Touch-Mix-16 mixer definitely looks new, with its tiny footprint, touchscreen-and-knob control, 20 inputs (16 mono), DCA groups, analog input gain, etc. **Yamaha** had a new line of compact mixers, including the MG20XU, which features 18 inputs and USB connectivity. Also in the booth was the **Steinberg** UR44 audio interface with four Class-A D-PRE preamps, MIDI I/O and latency-free DSP for monitor mixing with effects. **Peavey** introduced the new PV Series mixing consoles that integrate Bluetooth and AutoTune into powerful desktop and rack-mountable mixers. They also showed their RBN Sub and RBN 112 powered speaker enclosures.

SE Electronics debuted the sE X1 R passive ribbon microphone offering 135dB SPL signal handling and shipping with a swivel mounting clip. Also showing was the sE5 small diaphragm condenser offering a fixed cardioid pattern, 100Hz cut and -10dB/-20dB pad. **DPA Microphones** displayed its d:fine Series headsets featuring adjustable booms and a removable cable.

In Memoriam: Lawrence P. Swist



Photo ©2011 Lawrence P. Swist Designs

Engineer, producer and award-winning studio designer Lawrence P. Swist passed away on December 28, 2013, after a bout with cancer. Among his numerous accomplishments, Swist founded Lawrence P. Swist Designs in 1995, a full-service acoustical design and consulting firm. His studio design projects often appeared in the pages of *Mix*, including *Mix's* annual "Class Of" features. In 2010 he collaborated with longtime friend, Grammy Award-winning engineer Mick Guzauski, to create the Guzauski-Swist GS-3a Studio Monitor System.

In an interview with *SonicScoop* editor David Weiss, Guzauski reflected on Swist's talents: "Aside from being a studio designer, Larry was a great artist," Guzauski told *SonicScoop*. "He was a really good architect, a really good acoustician, and he had a terrific visual sense—he could make a beautiful room that really sounded right and you wanted to work in. When it came to creating our monitors, we both have the same taste in sound, and wanted to achieve the same goals. It didn't start out as a commercial project at all; as Larry said, it was a science project. Then people started liking the speakers."

Swist's Websites note that he was also a painter. In the 1960s he studied art and played bass in a rock band, which led to his interests in audio, recording studios, acoustics and live music venues. He went on to work in places such as the Hollywood Bowl, Carnegie Hall, The Palladium (London), Electric Lady Studios, Criteria Recording Studios, Ocean Way Studios (Los Angeles), and BBC Television, and with artists including Dizzy Gillespie, Chick Corea, The Everly Brothers, George Duke and Marcus Miller.

Memorial donations may be made in Swist's name to the American Diabetes Association.

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LOST IN THE TREES

Everything Changes in 'Past Life' By Barbara Schultz

Lost in the Trees leader Ari Picker thought he had a well-thought-out map for his band's latest ethereal prog-folk album, *Past Life* (Anti). For previous releases, such as *A Church That Fits Our Needs* (the *Wall Street Journal's* pick for best album of 2012), he says writing happened "in my room, huddled up and isolated. My influences were obscure, and my process was homespun." He'd then take his demos into a studio and teach parts to his bandmates as they recorded.

This time out, Picker and band developed full-blown arrangements of the songs and

toured the East Coast with them before going into the Neve 8068-equipped Echo Mountain Studios (Asheville, N.C.) with producer/engineer Nicolas Vernhes (Deerhunter, *Call of the Wild*) to record.

"We had a pretty good idea of what we wanted to do, but Nicolas pushed us to take things further, or dismantle things," Picker says. "We became fascinated with minimalism and trying to present a song with as few elements as possible. By using less, you're able to make elements bigger and more present. A lot of songs changed."

Vernhes is also a musician and studio owner, and he says he opened his facility (Rare Book Room, NYC) because the experimental bands he knew often didn't have enough money and time in the studio to take their musical vision as far as they wanted. He wants artists to feel like they always have plenty of time to invent.

"As soon as I heard Lost in the Trees, I was taken by the melodic work, instrumentally and vocally," Vernhes says. "There's a lot of very complex vocal interplay that I was drawn to."

Vernhes hit on the idea of showcasing Picker's melodies with instruments layered very



Nicolas Vernhes (left) and Ari Picker at Echo Mountain.

delicately, and often peeling away to highlight one vocal tone or one vocal-and-keyboard line.

"The song 'Lady in White,' the third track on the record, started as a rock song—full on guitars, and I was kind of yelling the vocals," Picker explains. "Nicolas took out the drum patterns and the guitars completely, and what was left was the piano line and strings. We basically took out the middle of the song and left only low end and a sparkling piano on top. The vocals became much more serene, and it definitely captured the more haunting aspect of the song, which would have been covered up if we had left all the rocking guitars.

"Then we had Kyle [Keegan] play each of the drums separately," Picker continues. "Now it sounds like a beat machine behind the track, even though it's him playing; it has this weird in-between human-robot feel."

"We close miked each drum with towels on almost every drum, covering maybe half the head and moving each one until it had just the right amount of decay and attack," says Vernhes, who tracked the sessions to Pro Tools but says that most instruments hit Echo Mountain's Studer A800 MkIII 24-track machine at some point. "We were actually trying to make the drums sound processed without actually processing them, just by taking a little extra time while we were setting up mics."

The string section on many of the tracks (two violins, two cellos, one viola) adds drama to these pared-down arrangements, as do some otherworldly sounds that came from record-

ing familiar instruments in unconventional ways.

"One thing we used a lot was the Hammond B3, but often not in the traditional B3 manner of having it heavily chorused, coming through the Leslie," Vernhes explains. "We'd turn the Leslie off, and any other type of chorusing, so we'd just hear a pure sine wave. But we did sometimes put [Emma Nadeau's] Fender Rhodes through the Leslie; that's got a different kind of attack from the organ, and it doesn't have the same continuous tone.

After a few seconds, there's a natural decay, which is always interesting. We put some of [Picker's] guitars through there, as well."

To capture the B3, Vernhes put a pair of Shure SM57s on the horns and a Neumann 47 FET on the bottom. "We didn't really want to get a lot of really deep low end from it," he explains. "We were very specific about what we wanted from specific instruments: That instrument's going to be the midrange; we want no bright top and nothing low from it. We wanted individual elements to occupy a space without treading on anything else."

Whereas many of the instrument sounds on *Past Life* were deconstructed to create that "human-robot feel," Picker's elegant voice is a very personal, carefully orchestrated element in each song.

"Ari has really interesting tone and a lot of control over his voice so he can make it sound different ways, and it would have been wrong to use the same vocal mic on every track," says Vernhes. He put up a Neumann U 67 for some songs, an AKG C12 for others, "and for some we would mix and match, and use both," the producer says. "I'd put a close mic, the 67, and then two or three feet away I'd put the C12 as a room mic and compress that a bit more so it would be very airy."

"Echo Mountain is an old church with tall ceilings, wood paneling and a wood floor, and we'd have Ari singing out in the chapel. It's a beautiful space acoustically, as well as visually." ■

ETERNAL SUMMERS, 'THE DROP BENEATH'

Distorted guitars and punchy drums create an almost harsh sonic environment for Nicole Yun's ethereal voice, making Eternal Summers' new release, *The Drop Beneath*, a study in beautiful contrasts.

Producer Doug Gillard (Guided by Voices, Nada Surf) brought the trio to Austin to record and mix in Resonate Studios with owner/engineer Louie Lino, who tracked a lot of basics live, varying recording chains to match each song.



"For some of the airier songs, Nicole's vocal would go from a Neumann TLM 103 to Avalon 737sp to dbx 160," Lino says. "For grittier songs, we would use an SM7 or a Sony C37a into an Altec 1567A or an old Langevin AM-301 mixer. I always seem to have the dbx 160 at the end of the chain, even if it's not really compressing much. It adds a sonic toughness that's pleasing."

Lino mikes Lun's guitar amp with an SM57 and a Cascade Fatman II ribbon. His pre's vary song-to-song, as well, including a Telefunken V72, Altec 1567a, Ampex 350, Great River, or Seventh Circle Audio N72. "We even used an old Moviola amp for a massively distorted tone on one or two songs," Lino says.

During the mix, Lino frequently used his vintage Gates Sta-Level. "If the track was doubled, I'd also have that track running through an Altec 436c compressor. Those two compressors are kind of similar in being vari-mu, so they seem to track together well. Occasionally, I'll duplicate a vocal track and blend in a distorted version using the Massey Tapehead or the SoundToys Radiator plug-in. Other key effects on vocals and guitar are my spring reverbs: an old MicMix Master Room MR-1 tower and a Studio B."

—Barbara Schultz

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LINNEA OLSSSEN, 'AH!'

Linnea Olssen's beautiful cello-and-voice album was recorded and mixed in Studio Gix (Halmstad, Sweden). The artist did all of her own recording in Logic, then turned the tracks over to engineer/producer Gicken to be mixed.

"It was recorded on Linnea's laptop and then mixed on mine," Gicken says. "The tracks were performed with an overdubbing, layer-on-layer style, using the Line 6 Delay Looper pedal. Sometimes I suggested traditional overdubs, to be able to split and pan different layers in the mix, and to be able to use different effects on different elements. But the raw material is always first-class. Linnea produces her takes perfectly. The splendid TK Audio Vintagedesign preamp used while recording did the job.

"I try to keep a solid low end when the cello goes low," Gicken says about his mix. "In the mid and high register, the approach is based on the arrangement of the song. Some songs have many different cello takes: the cello having a bass role, either bowed or pizzicato, cellos arranged as string quartets with lead cellos on top. Some cello was recorded with a lot of delay effect, and some without any. With a no-rules approach, we have cellos in the final mix going through bass amps, guitar amps, as well as very dry and very wet cellos."—*Barbara Schultz*



COOL SPIN LAKE STREET DIVE, 'BAD SELF PORTRAITS' (SIGNATURE SOUNDS)



East Coast quartet Lake Street Dive blends elements of jazz, soul and Americana to create an eclectic pop that's hook-y yet deep. There are echoes of early Supremes, Jackie

Wilson and maybe even Supertramp in the rhythmic arrangements behind the full-throated voice of singer Rachael Price. And there are plenty of unexpected moments, too—the odd spacey synth tone, trash-can drum solo or psychedelic guitar riff. Everything's on the table musically, and it all comes together in the bandmembers' smart pop songs, sung with both nuance and power.

Produced and mixed by Sam Kassirer. Studio: Great North Sound Society (Parsonfield, Maine). Mastering: Jeff Lipton/Peerless Mastering (Boston, Mass.)

—*Barbara Schultz*

LADYSMITH BLACK MAMBAZO, 'ALWAYS WITH US'



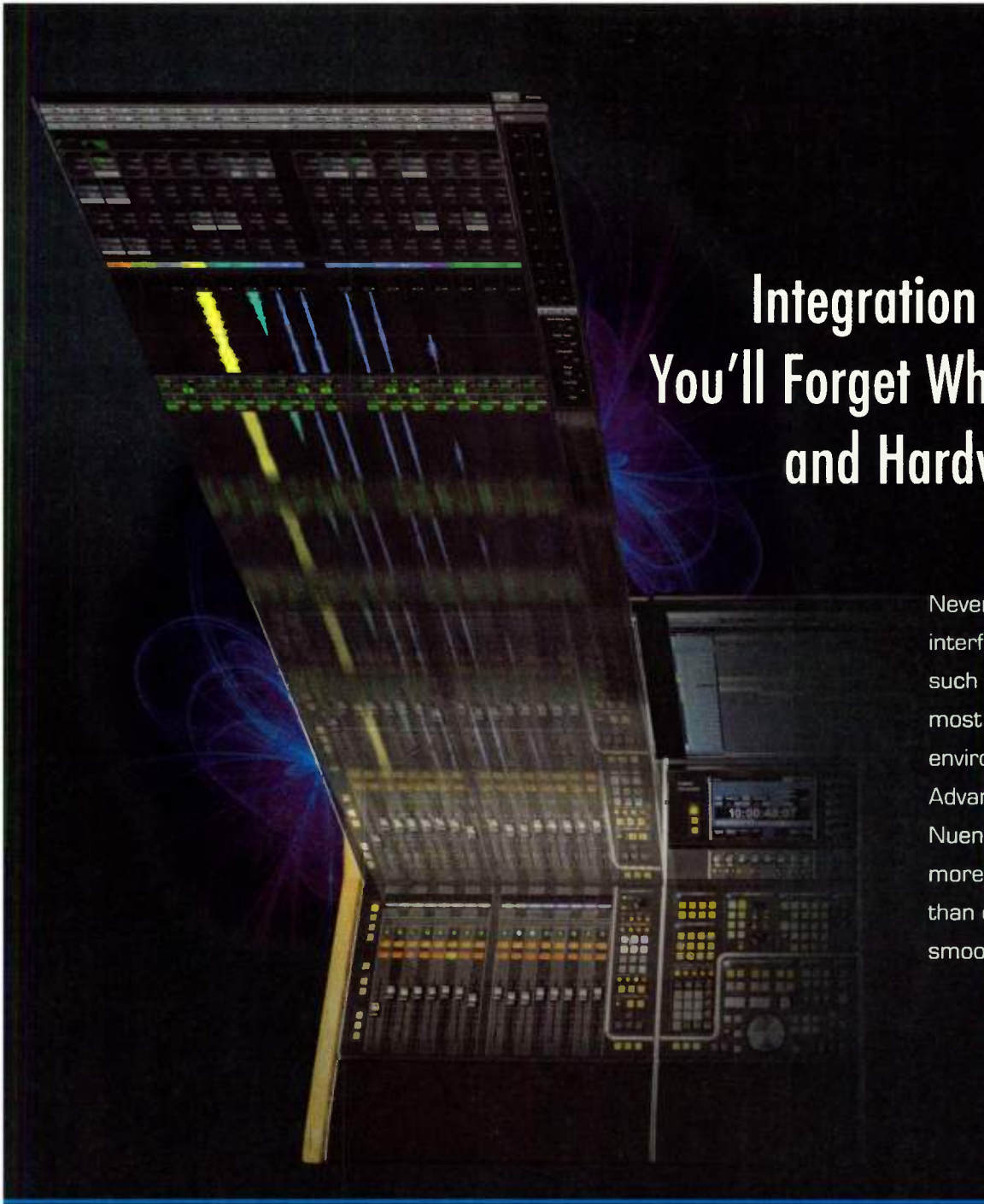
Photo: Courtesy Martin Walters

Ladysmith Black Mambazo recording in KZM in South Africa

Grammy Award-winning South African a cappella group Ladysmith Black Mambazo recently released *Always With Us*, a tribute honoring the music of Nellie Shabalala, the late wife of Black Mambazo's founder and leader, Joseph Shabalala. Nellie passed away in 2002 and was considered the group's matriarch. The new release is built around a collection of songs that Nellie recorded with her own singing group from the township church that she and her husband founded. The members of Black Mambazo added their vocals to the original recordings over several sessions in 2011 and 2012 at KZM Music House in Durban, South Africa, and

while touring in the U.S., visiting Club Schmed Studios in Missoula, Mont., and East Hall Studios in Fayetteville, Ark. Engineer Martin Walters recorded the group and mixed their tracks with Nellie's original tracks in his facility, Big Time Audio in Jonesborough, Tenn. "Joseph's ideas worked beautifully with the original tracks, intertwining his voice with Nellie's, and weaving Mambazo's voices tastefully with the women," Walters says. He mixed in the box using Pro Tools 10 HD; Waves, McDSP, URS and Izotope plugins (among others); and listening through Mackie HR824 and Genelec 1039 monitors.

—*Matt Gallagher*



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Classic Tracks

By Blair Jackson



Asleep at the Wheel, 1973. (l to R, rear) Gene Dobkin, Ray Benson, Chris O'Connell, Floyd Domino. (l to R, front) Lucky Oceans, Leroy Preston. All but Dobkin appeared on 1975's *Texas Gold*.

“THE LETTER THAT JOHNNY WALKER READ”

Asleep at the Wheel

Asleep at the Wheel co-founder and leader Ray Benson estimates that around 100 musicians have cycled in and out of his group over the course of more than 40 years. He is the lone original member of the band that started up in West Virginia in late 1969, was talked into moving to Berkeley by George Frayne (aka Commander Cody) in 1970, wowed the Bay Area with its spirited and eclectic mix of Western swing, hardcore country and Big Band flavors, and then was lured down to Austin by Willie Nelson in late '73, shortly after Willie himself had relocated there. Four decades later, Benson and his ever-shifting band are still going strong, a vital part of Austin's musical landscape.

But when Asleep at the Wheel started making albums in 1973, there wasn't much of a recording scene in Austin, so when the band signed its first record deal, they stipulated that they wanted to record in Nashville—just as Willie had been doing until 1973, when he recorded successive albums in New York/Memphis and Muscle Shoals. (His 1975 breakthrough, *Red Headed Stranger*, was the first record he made in Tex-

as, at Autumn Studios in Garland, near Dallas.)

“Our first album [*Comin' Right At Ya*, 1973] was 8-track at Mercury [Studios in Nashville],” Benson says. “We signed with United Artists when we were still living in the Bay Area, and we said we wanted to record in Nashville.” Performing at a DJ's convention there, the group asked if they could borrow a fiddle player for a number, “because we didn't have one at that time,” Benson recalls, “and it turned out to be Buddy Spicher, who was one of the top guys. He played with us on [Bob Wills' Western swing classic] ‘Take Me Back to Tulsa,’ and afterwards he said, ‘Wow, you guys are great!’ We said, ‘Thanks, Buddy, but we need a producer. Any ideas?’ And he said, ‘The best guy would be Tommy Allsup—he played with Bob Wills and was with Buddy Holly, and he'd probably understand what you're trying to do.’ And he did. He was great. He let us do what we wanted and helped us do it, which was pretty much to play everything live in the studio and then overdub anything we needed. We still like to work that way.”

That eclectic first album showed that Asleep at the Wheel was not going to be easily categorized. Besides their love of Western swing, which was hardly in fashion at the time (despite the popularity of Merle Haggard's 1970 album, *A Tribute to the Best Damn Fiddle Player in the World (Or, My Salute to Bob Wills)*), the group also covered old country and honky-tonk tunes by Hank Williams, Ernest Tubbs, Johnny Horton and Hank Snow, and had a handful of solid originals, most written by AATW's Leroy Preston who, with Benson and Chris O'Connell, was one of the band's three lead singers.

The group's electrifying live sets had even greater scope, encompassing countrified blues, R&B and jazz elements. With their long hair and loose onstage demeanor, they appealed to hippies, but they could definitely sing and play, so they became a magnet for fans and musicians who were looking for engaging country music outside the Nashville mainstream. Having Allsup producing was a feather in their cap, as were the guest appearances of fiddlers Spicher and the great Bob Wills alumnus Johnny Gimble. AATW steel guitarist Lucky Oceans and pianist Floyd Domino could obviously hold their own against Nashville pros, too.

Despite good buzz, the first album was not a commercial success, and for their eponymous second album, released in 1974, their new label, Epic Records, steered them to producer Norro Wilson (best known as a writer of hits for Tammy Wynette, Charlie Rich, Loretta Lynn, et al) and sessions at Studio B at Columbia's Quonset Hut, engineered by Lou Bradley. “Norro also let us do what we wanted,” Benson says, “so that was a good experience, too.” The album—which included Spicher and Gimble again, and introduced new AATW bassist Tony Garnier—produced the group's first (minor) hit, “Choo Choo Ch-Boogie,” an old Louis Jordan number.

By the time the group was ready to make their third album, they were well-ensconced in Austin and decided to make demo recordings of three

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of their new tunes at a studio in town. "The place we found was called PSG—run by a guy named Pedro Gutierrez," Benson says. "It was an 8-track room he had built himself, with mostly Sony gear, and he had also built the board, which had no marks on it—there were no numbers, no nothin', and the recording room was a concrete floor and cinder block walls. So we recorded three songs there—'The Letter That Johnny Walker Read,' 'Bump Bounce Boogie' and one other tune, and we sent it to Epic, who said: 'These songs are terrible. This is awful!'" Benson laughs. "And, of course, 'Johnny Walker Read' became our only Top Ten record ever." But not for Epic. "We signed with Capitol, and they let us go back to working with Tommy Allsup for the *Texas Gold* album."

"The Letter That Johnny Walker Read" started with the title. Benson says, "Chris Frayne, Commander Cody's brother—who did all the artwork on Commander Cody's albums and also painted the rope lettering on our bus—came to me and Leroy Preston and said, 'I've got a great title for a country-western song: The Letter That Johnny Walker Read.' It was a great title, and so we wrote a song around it and did the demo of it, and we actually sent it to Porter Wagoner and Dolly Parton, thinking it would be perfect for them. Of course, we didn't know them and just sent it to some address we got, so they probably never heard it. But it's got that recitation that I wrote with Porter Wagoner in mind."

It's a honky-tonk number, with some Western swing flavors (the uni-son fiddle, steel and horn parts), that has lead singer Benson as a sodden character named Johnny Walker, in a barroom "drinking his name-

sake... too drunk to care." Chris O'Connell sings the wife's pleading letter, which begs Johnny to come home to her and the kids, or she'll leave. It's a sly, borderline-parodic weeper, "but Chris is what made it work—what an incredible singer she was," Benson says.

With the exception of two Bob Wills-associated songs—"Fat Boy Rag" and "Roll 'em Floyd"—which were recorded live-to-2-track, with no reverb or EQ, by British engineer Roger Harris at KAFM Studios in Dallas (12 musicians at once!), the rest of *Texas Gold* was cut at Jack Clement's Studio in Nashville by engineer Billy D. Sherrill. In 1975, there was still somewhat of a divide between the old-school establishment Nashville types and folks who were more sympathetic to longhairs and the weed that invariably came with them.

That would certainly describe AATW. The album they made in Clement's Studio B "got its name because we had brought some Acapulco Gold [pot] with us—it was gold-colored; just beautiful," Benson says fondly. "So we'd say, 'Here, have some Texas Gold!' Of course, we didn't tell anybody at the record company." And Clement's turned out to be a most hospitable environment. "It had a little 'groove room' upstairs that had a waterbed-like thing and was a great place to smoke pot and have fun," Benson laughs.

"That was the 'Fur Room,'" clarifies Billy Sherrill, still an active engineer in Nashville. "The floor and the bed and an S-shaped couch that was part of the bed were all covered with fur up to about waist-high, and from there up it was mirrors. Then, on the ceiling it had parachute material,

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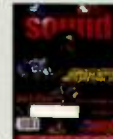
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~ Mix



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~ Tape Op



and Cowboy [Jack Clement] put twinkling Christmas lights behind it. There were a lot of nasty things that went on up there," he laughs.

The studios, which years later became Sound Emporium, were downstairs in the converted house. The space in Studio B's L-shaped tracking room was nearly maxed-out by AATW, which had grown to nine members by the time they made *Texas Gold*, even adding some outside musicians, such as Gimble and some horn players. The room had an alcove for drums—actually a small hallway where Clement constructed a gazebo that could be baffled off with Plexiglas to keep leakage down. "It didn't help a lot," Sherrill says, "but the leakage in that room kind of worked for you and added to what was already a cool-sounding room."

The control room was equipped with a Quad 8 console ("which had fabulous-sounding mic pre's and 3-band EQs," Sherrill says), an Ampex MM1000 16-track and JBL 4320 monitors. "We had LA-2A compressors, but they also had a bank of LA-3As and 1176 transistor fare. In Nashville at that time, people were moving away from tubes to solid-state."

Sherrill notes that, "the [Neumann] 87 was the standard vocal mic at that time in Nashville. I usually used [Shure] 57s on guitar amps; sometimes a [Sennheiser] 421, depending on the guitar player. The piano would have gotten two [AKG] 414s, which I still use on piano." Horns were often captured with RCA 77s, occasionally with an RE-20 or an RCA 44. "Drums ended up being on three tracks. I'd usually have a 421 on the toms, a 57 on the snare and an RE20 on the kick. We'd use 87s overhead and a [Neumann] KM 84 on the hi-hat. Since we were so limited in tracks, you sort

of had to mix as you go." Sherrill mixed the album on the same console, using some EMT plate and chamber for enhancement.

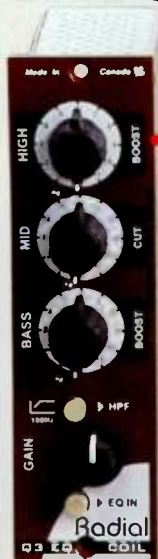
Sherrill says that producer Allsup was "a great guy, fun to work with, and also a fabulous player"—he plays six-string "tic-tac" bass on "Johnny Walker." Of that song, he says, "That was one where we all went, 'That's got to be a hit!' The story is so cool, and that was a big story-song era. The band was great, of course. They were rehearsed and ready-to-go, which always makes life easier for everyone."

"The Letter That Johnny Walker Read" shot to Number 10 on the *Billboard* country singles chart in the summer of 1975, and *Texas Gold* hit Number 7 on the country album chart. A second single, "Bump Bounce Boogie," sung by O'Connell, made it to Number 31. The band's paydays immediately got bigger, and they found themselves on prestigious tours for a period "where we'd have 25 to 35 minutes in the opening slot," Benson says. "We had three vocalists, and we're playing Count Basie, Bob Wills and Louie Jordan, and all people really wanted to hear was 'Johnny Walker' and 'Rocky Top,' so it was a little frustrating."

Asleep at the Wheel never abandoned their eclecticism and never tried to repeat the formula of their lone hit single. "It was always a battle," Benson says. "The record companies were always saying, 'How are we gonna make these guys commercial?' So we would walk that fine line between trying not to record anything too stupid and still keep the vision of what we wanted to do."

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Justin Timberlake's 20/20 Experience tour landed in the SAP Center in San Jose, Calif., in January 2014.

JUSTIN TIMBERLAKE

20/20 Experience Photos & Text by Steve Jennings

When *Mix* caught Justin Timberlake at the SAP Center in San Jose late-January, he was already nearing the end of his first U.S. leg and about to head off to Europe from March to June, before returning to the States for a run through August. That's more than a year on the road, but for the crew, it's the third incarnation of the setup and just the middle of a two-year commitment that began back in January 2013 when they flew out to rehearse for that year's Super Bowl and Grammy performances.

That was followed by random shows and promos around the world, then the Jay-Z co-headlining stadium tour in summer 2013, where a couple more pieces were added to the 16-piece band, then

back to JT in arenas. While they have been fun shows to build, says FOH engineer Andy Meyer, they have been massive undertakings back to back.

"Justin has a complete vision of the entire production," says Meyer, who has been working with Timberlake since 2005. "He might come by while we're running something and suggest, say, turning a snare sample that the drummer is triggering up 1 dB and as always it makes the song! Not only does he know exactly how he wants it to sit in the mix, he [also] has such an excellent ear. This gives me exceptional information. "I wish every artist could be this musically knowledgeable and involved."

It is a Justin Timberlake show, and Meyer is well aware that the audience comes for the per-

formance and wants to hear every word. He provides the clean path and JT does the rest. "Justin is a traditionalist—microphone in hand, no headset, he understands proximity effect and he uses it to his advantage," he says. "We've chosen to go analog with him to FOH. He uses an Audio-Technica 6100 hypercardioid dynamic handheld microphone, which has great rejection qualities. I bring it analog to FOH into a [Rupert Neve Designs] Portico II channel strip and that's my mic pre. From there it goes into the Apogee Symphony and that converts it to digital, then it goes AES into the console. It warms him up nicely. There's also a great de-esser circuit in the Portico II channel. Finally, in the console I use the Waves C6 and H-Comp plug-ins."



Front-of-house engineer Andy Meyer, at the DiGiCo SD7, has been working with Timberlake since 2005.

The console is a DiGiCo SD7, which he's been running for about two years, originally spec'ing it for its high input count capabilities, and now taking advantage of its sound and integration. "I've tried to integrate analog gear with other digital consoles and it never really sounds as good as it has with the SD7," he says. "I attribute that to their converters. So I've gone one step further where I'll use the D/A converter out of the console into insert gear, and then I'll send that analog out into a Symphony I/O returning it back into the console AES so I can bypass the sample rate conversion on the desk. That's how I find it really sounds best."

"I've got a Rupert Neve Portico II master bus processor, a Dangerous [Music] Bax EQ, and a DTC MindPrint inserted on the master bus. I have some Vintech 473 preamps in line mode that I insert on bass guitar, snares and guitars which gives it a nice midrange punch. The heart of my rig is the Antelope Audio 10M, Orion, Trinity combination I'm using to clock the entire system. That's what glues it all together."

Solotech is providing the L-Acoustics P.A. for the tour, with 16 K1s per side, six KARAs per side for down fill, and 12 K1 SBs per side to supplement low end in the air. For side hang there are 12 K1s and six KARA per side, and for the 270 hang they have 12 KARA on both sides along with eight 108s in different spots for front fills. Etienne Lapre is systems tech.

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See more photos of Justin Timberlake's performance at the SAP Center in San Jose, Calif.

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Monitor engineer Dan Horton also uses a DiGiCo SD7.

Monitor engineer Dan Horton is also on an SD7, and has been for about four years, switching over from the D5 when he found himself using two to cover his needs.

"One of the things I like the most about the SD7 is the sound quality with total flexibility to match," Horton says. "My favorite is the subgroup dynamics and insert capabilities. I have separate subgroups for each instrument section: drums, percussion, bass, guitars, keys, background vocals, JT instruments, JT vox and JT effects. I do all the subgroups to a band subgroup (Empirical Labs Fatso on insert), which goes to a master subgroup alongside my main JT vocal subgroup. Master is JT's mix (SSL XLogic G Series Bus comp on insert). Our bass player is our musical director and he doesn't like a lot of compression, so I leave a channel flat to him. But then when I send it to the group I get to EQ it differently. I use the DiGiCo onboard multiband comp to just control dynamics and then the next onboard comp in that group to act as the compressor of the group. I also have 12 talkbacks so band members can talk to me during the show."

Horton clocks his system with an Antelope Trinity and 10M combination. Outboard gear includes Bricasti M7s for reverbs and a couple of Eventide Eclipses—one for a distortion sound and one for a phaser sound. For the solo portion of this year's tour, he added API 512c mic preamps into Timberlake's chain, along with Retro Double Wide compression to add a little more depth to his vocal, "a little more 3-D."

Timberlake and most of the band are using JH Audio JH16 in-ear monitoring systems. The wireless system is 24-channel Shure PSM 1000, with singers and horns on Shure Axient.

"He can really sing, and he can actually mix his own stuff, can call his own frequencies," Horton says. "He's no slouch when it comes to sound." ■

DWIGHT YOAKAM ON TOUR

Dwight Yoakam and band—guitarist Eugene Edwards, bassist J.J. Clark, drummer Mitch Marine and multi-instrumentalist Brian Whelan—have been hitting the road hard since he released *3 Pears* in September 2012. The shows are musically and sonically powerful, as Yoakam continues to cook up his awesome combination of country, rockabilly and rock 'n' roll.



Photo: Cambria Hurley

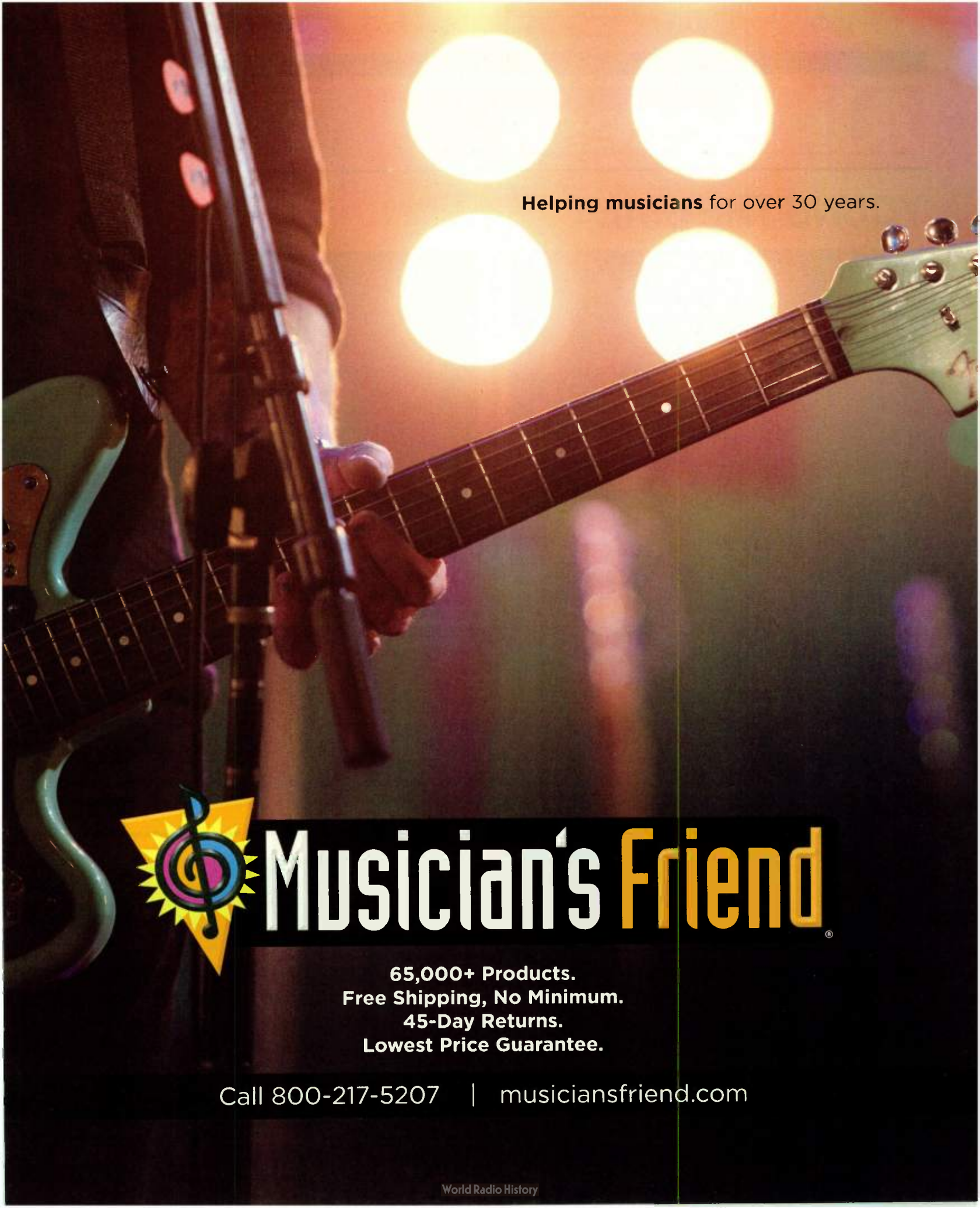
Scotty Schenk mixes monitors, and Jordan Zur—who worked dozens of tours during 15 years with Eighth Day Sound before joining Yoakam's crew full time in March 2013—handles

the house sound.

The tour carries a full package of mics and backline, as well as Schenk's Avid SC48 monitor desk and Yoakam and Whelan's wedges. The rest of the equipment needs—FOH console, P.A., etc.—are rented locally. Zur specs an Avid Profile in every town, and gives a list of preferred loudspeaker models, which gives him consistency night-to-night and allows him to concentrate on his priorities: the overall band sound, and above it all, Yoakam's vocal.

Yoakam sings into a Beyerdynamic M88, "and then a Mercury M72s Mk. I mic pre," Zur says. "Dwight owns four of those. It's a tube pre—just a dial on it, some pad switches, it just sounds amazing. It gives me that warm, full sound on his voice so I've got something to work with, with all the other stuff coming into his mic. Then I bring it into the Avid desk, and I use an SSL EQ, which is part of the Waves package; from there I use the CLA-76 [compressor/limiter plug-in], which is based off the 1176 that Chris Lord-Alge uses. Chris mixed most of the songs on *3 Pears*, and Dwight wants me to emulate that vocal sound. The reverb is a Waves reverb plate, usually no more than 1.6 milliseconds—a real basic plate with a little high end rolled off so it's real natural. I use a slap delay, the Waves H, which is a nice analog sound. And then I use the Kramer tape delay, because especially on the new album there's a lot of tape slap."

—Barbara Schultz



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YOUNG THE GIANT



Young the Giant (**Sameer Gadhia, vocals, keys**; Jacob Tilley, guitar; Eric Cannata, guitar; Payam Doostzadeh, bass; Francois Comtois, drums) released their much anticipated sophomore album, *Mind Over Matter*, in late January, working with Grammy-nominated producer Justin Meldal-Johnsen (Paramore, Nine Inch Nails Beck). *Mix* caught the band in early February, second night of the tour, at the Fox Theatre in Oakland, Calif., using the house Meyer Sound P.A.



"On this run we are very tight on space in our pack, so I challenged myself to occupy a small footprint," says **front-of-house engineer Titus Woodham**. "I'm using a Midas Pro control surface, DL251 for 'stage' I/O and DL 451—with 3x 8-channel AES cards—for 'FOH' I/O. The Midas Pro series, at 24-bit/96k, seems to have the best analog sonic characteristics when using a digital console. Once I'm in the digital realm, I prefer to keep all my I/O fully digital and properly clocked at the proper bit depth and sample rate [24/96]. Midas A/D converters, then a Lake LM 44 as the final D/A; however, anytime I can go directly into the P.A. system amps digitally is ideal.

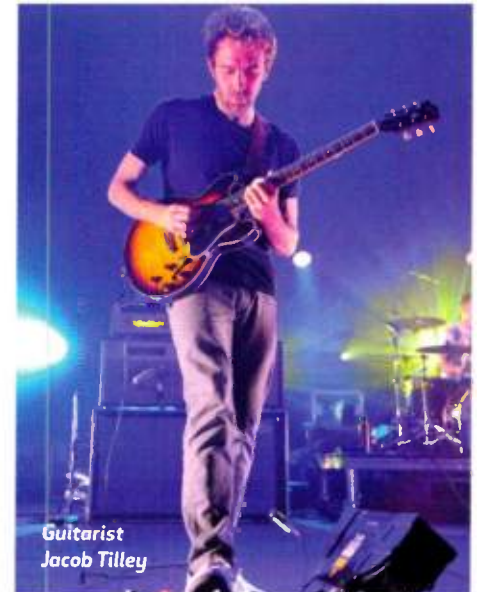
The Gen 2 onboard plug-ins are great!" he continues. "I'm using the onboard effects for primarily dynamics. I'm carrying an additional rack with two Eventide Eclipse V4, a TC Electronic FireworX, a TC Electronic System 6000 with [4x] engines, Waves MaxxBCL [stereo bus, master comp], JoeCo MAD1 64-track recorder [with remote iPad app], and two Lake LM44 [wireless tablet control]. This entire rack is all clocked at 24-bit/96k, and all the connections to the console are fully digital."

"I'm mixing the band on an Avid Venue SC48," says **monitor engineer Ricky Leon**. "Sameer Gadhia's main vocal mic is the Shure KSM9 HS, and for his effects vocal he uses the Shure 55s, which goes through a TC Helicon voice processor. He can get really creative with the setting, so I tend to set a hard compression on this line. He has great vocal range so I also use a comp along with a limiter."





Guitarist
Eric Connata



Guitarist
Jacob Tilley



Bassist
Payam Doostzadeh

All guitarists use Bad Cat amps miked with a combination of Shure SM57s and KSM 32s. Pictured is **guitar tech Josh Schreiber**; above is **Tilley's pedal/amp rig**.



Drummer Francois Comtois' kit has a Shure Beta 91A and Beta 52 on kick, Beta 57 and SM57 on snare, KSM 137 on hi-hat, and Beta 98AMP on toms, according to **drum tech Colin "Gravy" Strahm**. Cymbals are KSM 32s, and his vocal mic is a Beta 56.



MASTERS WITH A PLAN

Four Engineers Talk Music, Mentoring and Hi-Res Formats

BY TOM KENNY // PHOTOS BY GREG ALLEN

The job of a mastering engineer today is far different from what it was even 10 years ago. It was once a pretty self-contained world. Tape and sometimes a Pro Tools file came in, and a 1630 went out. Before that a lacquer. Nobody, outside or even inside the industry, was really sure what they did. But their precision, their ears and their musicality brought great value. Nobody questioned that.

Today, a mastering engineer might receive files from eight different sources, in different formats with varied plug-ins, at differing resolutions. Often the project is unlabeled and they become detectives. Then they deliver multiple versions in multiple resolutions for playback on devices ranging from mobile phones to audiophile systems, in streaming and download and physical formats. They are the final stop for the artist and producer, and the ones ultimately responsible for delivering to the consumer.

The four mastering engineers on this month's cover represent all mastering engineers in a way. But Michael Romanowski, Gavin Lurssen, Joe Palmaccio and Andrew Mendelson (please, Google their backgrounds) have made an effort the past couple of years to share what they've learned about the changing world of audio production and distribution. They speak together on panels at events from SXSW to NAMM to AES Latin America; they meet with local professionals in whatever markets will have them; and they are committed to pushing the industry forward and delivering hi-res audio to consumers.

We all met on a Friday morning during Grammy Week at Lurssen's Hollywood studio. They didn't really want to talk about loudness wars, extreme gear or Mastered for iTunes. They wanted to talk about decision-making, file formats and what hi-res audio really means. They want to talk about the next generation.

So let's jump right into mentoring. Each of you can point to a professional who made a difference in your career.

Mendelson: We can. A week and a half into my internship



at Sony, I was sitting on the couch and Mark Wilder walked in and said, "What do you want to do?" "Mastering," I said. "Really? You're sitting on a couch." That short conversation changed my perspective. I realized I had to be a little pushy to get in there—he would ask me to leave if he wanted. So I hung around sessions with him and others. I was so nervous about being perceived as cocky that I didn't appear eager. After that, I would be coming in at 3 a.m., every morning, after the classical guys were done, and I'd spend six hours a day in that room besides being an intern. You find the time to do it.

Lurssen: Mark Wilder is one of the finest mastering engineers to ever exist, in my opinion. He is so mild-mannered, but if you decide you want to know what Mark Wilder knows, he will allow you in, even today. And he's a sound genius. He won't push you

necessarily. He's just going to allow it.

Romanowski: Having someone who allows that space to grow and be able to ask questions, so that you are self-exploratory, is invaluable. But you have to be a self-starter. There is a fine line between being cocky and being eager. Paul [Stubblebine] and Ken [Lee] would let me sit in the back of the room at Rocket Labs and I'd watch. Then I would be there till 3 or 4 in the morning. You had to find the time to make it happen, but you had to have the space and someone who would teach you and allow you to explore. We don't have that these days like we should.

Agreed. And it's industry-wide.

Lurssen: Mentoring has been replaced by software products. With 200 bucks you can hang a shingle, but it doesn't mean you have the experience. As professionals, we need to step in and make ourselves available.



The panel, in Gavin Lurssen's Hollywood mastering room, from left: Joe Palmaccio, Michael Romanowski, Andrew Mendelson and Lurssen.

Romanowski: Technology has allowed people who haven't had the opportunity to learn like we did to learn the basics. That's great. There are plug-ins that emulate all the hardware and analog boxes and everything we use. But they don't tell people why to do things. They don't teach. What we do is listen, very deeply and closely, and make decisions. To me it's all about the why. Why are you doing this? Why do you want it to sound like that?

Palmaccio: There's a reason the four of us have been hanging together these past couple of years doing outreach. People are often working in silos today. Not communicating. As professionals, we can keep the concept of mentoring going by community building, in an overarching way. It's important to have an individual, but it also needs the whole recording community.

Romanowski: Our mentors invested in us because they saw that we could carry the torch. A long-term investment in music itself. And craft. That's what we're doing, too, trying to pay it forward. It's not the same as it was, we know that.

Lurssen: There's a new crop of people coming in who need mentoring, and we have a unique view. SXSW, AES, NAMM, Mexico City—we're getting out there as a group. It's not some exclusive thing. We're just like-minded people.

Mendelson: Mentoring extends to your relationship with your clients, too. We've all had it happen where something comes in and they want it to sound like the Britney record, or whoever. Then you listen to the mixes and think a) why? And b) that's not going to happen. You're going to turn this into a bad imitation of something else when it could be something great in and of itself. That was Britney doing her thing.

So the mix comes in to you. When do you start to form opinions?

All: Instantly.

Lurssen: You always know what something needs to sound like. That's what drives us all into this job. You take the time to assess what you're presented with and you make your map.

Whoever I'm working with, I always visualize what it needs to sound like in my head. And I always take stock of where we are. So I have two points in space, A and B, and I map the shortest journey with the least amount of stuff from A to B. I want to use as little as possible to get from here to here.

Palmaccio: That's a simple map he just drew. I think I make mine incredibly complicated. *[Laughs]*

Romanowski: When people ask how do they get into mastering, I tell them it's about having an opinion. Be opinionated, that's point A. Then develop another opinion about where it should be, and that's point B. At the same time, to find that path, that short distance, you have to be open to what it sounds like and not make any preconceived notions about what you will do. The aural observation is what informs the map.

Mendelson: Before we even start, I like to have a conversation with the producer or artist if they are available and find out what they are going for. The taste. Some people are going for

something really aggressive, some more quiet. I have my own opinion, of course, but you have the conversation. It's their project, and maybe that extra dB of level is important to them.

File formats. You used to get tape and send out a 1630. Today you receive all kinds of files and deliver all kinds of versions.

Mendelson: I feel it's getting better on the input side. There was a moment there when I would get unmarked discs and they'd tell me there's an MP3 on there. What artist is this even? And these are label projects where a courier drops it off! But it's gotten better the last year or two. More attention to detail and labeling. But what amazes me, often with independent artists, is they say the CD manufacturer can't deal with some weird file format. Well, that's not the file format we gave you! They've ripped it or burned it. You cannot break open our CD case without ripping through a sticker that says Do Not Play! An engineer called me from a listening party one time and said, "This does not sound like what we mastered." It turns out somebody at the label wanted to add CD text. So they ripped



Gavin Lurssen took apart radios as a kid in South Africa and ended up as a "box boy" at Doug Sax's Mastering Lab. "The art of balance has always been my interest. Listening to music and always hearing in my head how I would like it to come out."

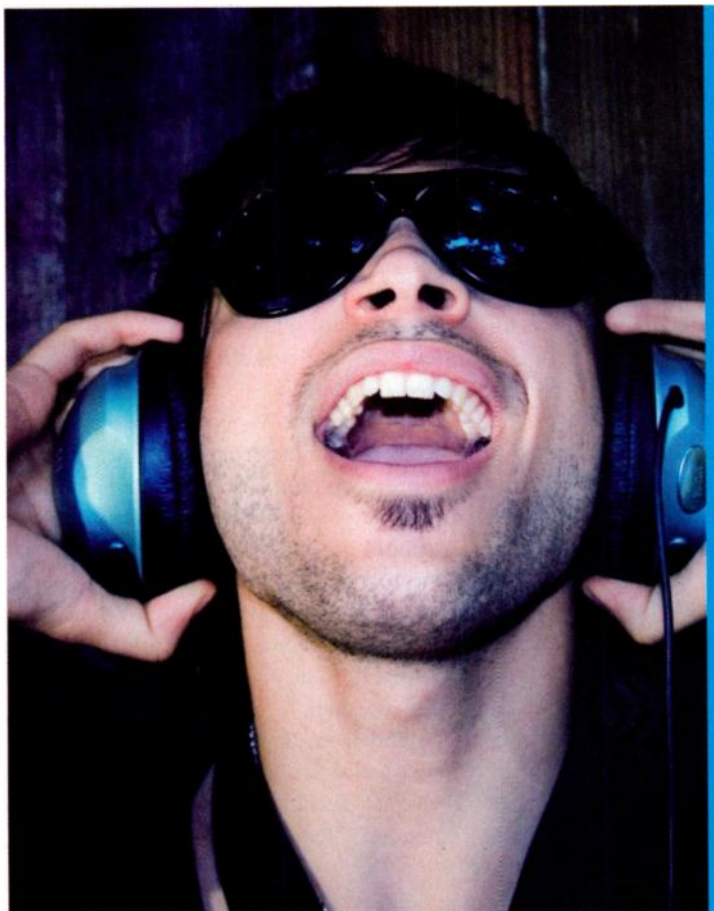


Andrew Mendelson played guitar and bought a Portastudio as a teen, and later interned at Sony and Telarc, where "they did mostly jazz and classical, and I am so grateful. The best listening skills I could have possibly developed."

it into iTunes as an MP3, then re-burned it as WAV files! Obviously the spacings are all jacked up at this point. And they send it out!

Romanowski: There's definitely more coherence on the input side. People are not bringing 44 /16 or 44 /24 that often. It's way more 2x now—96k/24-bit files. But I'm providing so many different formats for output. I do everything at 96 /24 but give them a 44 /24 so they can do Mastered for iTunes, or 44 /16 so they can upload to TuneCore. If they're dealing with video, we get them a 48k version. We're delivering a DDP to most manufacturing.

Palmaccio: I think the DDP player is great because you can send a player and the DDP ref and the client can listen on their computer without going through iTunes. They should listen in the environment they are most comfortable. We had those problems a few years ago where we would send somebody a ref and we don't know what they did with it. They ripped it into something, and I would have to explain why I can't make EQ choices based on what they are now telling me. Having the DDP player as a reference point has been a godsend.



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Joe Palmaccio came up through music appreciation, with a mother who took him to see the likes of Harry James, Buddy Rich, Louis Bellson and Maynard Ferguson. "That started my love of listening."



Michael Romanowski credits his experience playing bass onstage and mixing live sound with teaching him how to make decisions. "I was mixing bands I'd never heard and still had to make them sound good. Each night for a couple of years. I learned to develop an opinion on the spot."

High-resolution audio is a hot topic these days, for professionals and consumers. What is it?

Lurssen: We've brought it down to MP3, so now a CD is hi-res. [Laughter]

Romanowski: The Recording Academy is looking at hi-res as anything 24 /48 and above; that's been established for film. And then we're looking at Ultra Hi Res. But it's just as important that we determine where it came from. You can say that you have an original analog master but you don't know that it wasn't an EQ'd safety copy. Or sixth generation. We have to be vigilant as an industry about labeling if we expect the consumer to buy in. Integrity is important. Upsampling is not hi-res. There is truth in advertising, and that's the only way we can expect consumers to embrace it.

Palmaccio: I would say that hi-res has to be 24 bits. Bits are important. This goes back to the early '90s when we were just trying to break out of 16 bits. Then 18-bit converters came out, then 20 and 24. Mastering is a game of inches. We improve things in small increments. To go from 16 to 24 is a massive jump. A 48dB difference. The noise floor goes away. So hi-res has to be at least 24 bits. And on sample rate we need to work at 96k. To my ear it's significantly better. I'm sure we'll go higher, too. Bigger is better.

Lurssen: Once you get to a sample rate of 192,

you're starting to get closer to what the human brain needs to hear. Double that to 384, and 32-bit—the more samples per second, the higher the ultraharmonic frequencies go. Then the brain doesn't have to go through the stress of interpolation. When people talk about high resolution, they are first talking about a reduction. But from a marketing standpoint they need to establish a benchmark number. We have to pay attention to that.

Mendelson: The flip side of that is that sometimes there is such focus on the numbers of hi-res that we miss the meaning of it, and the "sound quality" of it. To me, hi-res is the closest representation of the

original source.

Lurssen: I like Andrew's definition. As close to the source as possible. Ultimately, the most success we can offer a client, or a recording, is to make it sound like we were never there. There's color and flavor to what we do, but it is more felt than heard. There's definitely vibe, there's attitude and a style. But there should never be a veil between the recording and the listener. When we offer something to an artist that they can sell with confidence, it should sound like it always existed. It is an art of balance, a balance of the tonal frequency spectrum and an understanding of how consumers will hear it. ■

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World Radio History

BUILD YOUR OWN STUDIO

THIS \$50,000 ALL-IN-THE-BOX STUDIO COULD MAKE A SMALL ROOM SOUND LIKE AN ENTIRE PRODUCTION HOUSE // By MARKKUS ROVITO

Sometimes physical constraints contribute more to studio planning than budget constraints. However, for 50 grand or less, you can still pack a small- or medium-size room with enough high-end tools for professional work. Generally, the less physical space you have, the more gear you put in the box.

Our computer-centric studio uses cross-platform software for all the instrumentation and processing. Meanwhile, the additional hardware emphasizes quality over quantity, because you don't have room for anything but the best (see Kevin Becka's excellent column "Quality Is Cheaper" at <http://bit.ly/1hfHJdt>). As a starting point, you'll need a robust desktop Mac or Windows machine—one that accommodates PCIe card expansion.

DAW SOFTWARE AND HARDWARE

When an industry standard also happens to be the best product in its class, that's a win-win. The 64-bit Pro Tools 11 focuses on sound quality and improved workflow, and has a completely rewritten audio engine based on floating-point algorithms, giving you gobs more processing power when using the same hardware as PT 10. You'll be able to push it hard with the Avid Pro Tools|HDX + HD Omni (\$9,999, Mac/PC) package, which includes Pro Tools HD 11, one HDX PCIe DSP card, and the HD Omni interface with preamps, digital and analog I/O and monitoring all in one rackspace.

You can get the feel of a big mixing desk for a much smaller cost of surface area and money. We're lining up three units from the Avid Artist Series: the Artist Control (\$1,667), Artist Mix (\$1,399) and Artist Transport (\$444) DAW controllers. These will give you lockstep control over all the mixing and navigating in PT11 and other software that supports EUCON, HUI or Mackie Control. These controllers provide a total of 12 motorized, touch-sensitive long-throw faders; 16 touch-sensitive rotary encoders; adaptive displays; touch-screen menus; and professional transport options.

You'll probably want some creative options in workstation software, so you can try something new at the drop of a hat. We're recommending an old veteran and this year's debutante. Propellerhead Reason 7 (\$449, Mac/PC) can be as simple or as complicated as you wish. Its infinite rack of samplers, synths and effects can be just the thing for starting fresh and focusing on writing a song or designing sounds.



Picking up on clip-based composition and live performance where Ableton Live seemingly left off, the new Bitwig Studio 1.0 (\$499, Mac/PC/Linux) workstation melds its session and arrange views into one window, includes a click-and-drag modular interface for its array of instrument and effect devices, and adds some cool workflow innovations, such as nested devices and layered editing. Get in on the ground floor with this one!

Our MIDI keyboard includes tight control integration with both Reason 7 and Bitwig Studio out of the box. The Nektar Panorama P6 (\$650, Mac/PC) 61-note semi-weighted keyboard is also a rock-solid board in its own right, including nine fader/rotary strips, 12 velocity and pressure drum pads, transport controls, a dynamic 3.5-inch color display and a motorized fader for DAW channels—all at an impressive price.

No single MIDI controller has it all, so as supplemental units, why not add the most innovative, durable and portable options? Both the Keith McMillen Instruments QuNeo (\$249) and QuNexus (\$199) stretch the boundaries of pound-for-pound toughness. The petite units are nearly indestructible, and both offer tasty new twists: The QuNeo's 16 drum pads can operate in quadrants, forming essentially a backlit 64-button grid, and the 25 button-keys on the QuNexus add Tilt—a new form of control sensitivity in addition to velocity and aftertouch that responds to your finger's position on the key.

PLUG-INS

Like the sequels to The Neverending Story, the Complete bundle of virtual



instruments and effects somehow gets more complete with every version. Native Instruments Komplete 9 Ultimate (\$1,199, Mac/PC, AAX Native/AU/VST) packs 65 products and 16,000 sounds in 370 GB onto a pre-installed USB 2 hard drive—more than a third more content than Komplete 8. You get the Guitar Rig 5 amp studio, the highly supported Kontakt 5 sampler, the limitless Reaktor 5 synth, essential pianos and organs, and the Absynth 5, FM8, Battery 4, Prism, Razor and Monark synths. You have audio processing based on vintage analog gear, and the most bonkers special effects for electronic music and sound design.

Since Komplete 9 is native-only, we're not skimping on high-end, dedicated processing bundles that will harness DSP power. The McDSP Everything Pack HD v5 (\$3,995, Mac/PC, AAX DSP/AAX Native/AU/RTAS/TDM) throws the entire kitchen sink at your HDX card. McDSP reduces the results of some of the great all-time studio hardware down to plug-in form as well as anyone. The Everything Pack's 18 compressors, limiters, EQs, channel strips, tape emulations and assorted effects and filters are a mixer's dream.

For mastering, the Flux Mastering Pack Plus 1.1 (\$1,149, Mac/PC, AAX DSP/AAX Native/AU/VST) delivers the DSP-exploiting goods. The Solera v3 dynamics processor, Epure v3 equalizer, Pure Limiter v3 transparent limiter and Elixir v3 peak limiter give you finely tuned control over your finished sound and support up to eight channels of simultaneous processing for surround-sound.

A couple of one-off plug-ins tie up some loose ends. The most versatile pitch processor available, Zynaptiq Pitchmap 1.5 (\$399, Mac/PC, AAX Native/AU/RTAS/VST) handles the normal auto-pitch correct and transposition tasks. Things get crazy, though, when you use its unique ability to spread the individual parts of a mixed audio signal across the screen and adjust or silence each part. You can play new melodies and harmonies using the audio material from a MIDI keyboard in real time.



For high-level spectral audio repair, we love iZotope RX3 Advanced (\$1,199, Mac/PC, stand-alone/AAX Native/AU/RTAS/VST). RX has long been the go-to for ridding audio of clicks, pops, hiss and hum, but RX3 Advanced steps it up with improvements that rock for video post-production and live performances. A new Dereverb module can do away with unwanted room tone, and the new Dialogue Denoiser can remove background noise from dialog in real time. RX 3 Advanced also includes the iZotope Insight metering plug-in.

MONITORING

The HD Omni's eight analog outputs and flexible routing can handle 7.1 surround or fold-down mixes to any configuration, and PT11's new video engine lets you play and edit HD video formats without transcoding. We chose a 5.1 system, with an alternate set of stereo monitors for the Omni's remaining outputs.

The Genelec 8030.LSE Power Pak (\$7,150) includes five 8030A near-field monitors and a 7060B powered subwoofer with 120W amp. It's optimized for surround monitoring in small spaces; each of the bi-amped 8030As delivers 40W x 40W in a compact speaker with built-in IsoPod mounting stand.

Yamaha's back with a successor series to the legendary NS-10s. Sporting similar white cones, the HS8 (\$998/pair) bi-amped monitors have clear, detailed frequency response and low coloration. The 8-inch LF cone woofer delivers 75W and a 1-inch HF dome tweeter adds 45W for a little extra umph when monitoring stereo.

For long studio sessions (are there any other kind?), you need headphones that match accuracy



with comfort. The AKG K712 Pro (\$699) nail it on both counts.

MIKING

For the HD Omni's two mic inputs, we're endorsing two equally yummy, yet functionally different mics.

There may not be a more sensitive job than recording vocals. With the Telefunken U47 (\$9,995) large-diaphragm tube condenser mic, you have the closest thing possible to the vintage Neumann U47 that was the favorite of Sinatra, the Beatles and so many others. The cardioid/omnidirectional U47 takes SPLs up to 138 dB, so you can use it on amps, drums—basically anything.

The Royer SF-12 (\$2,895) can fill in the blanks for stereo recording and distance miking. Two high-end matched ribbon mics in one body can record dual figure-8, Blumlein, and mid-side stereo. You'll get great clarity and imaging from suggested applications like plucked string instruments or overhead drums.

Let's support those pricey mics with a little slice of a classic Neve board. The Rupert Neve Designs Portico 5012 (\$1,895) 2-channel mic pre utilizes Neve's own custom transformer I/O with selectable phantom power, phase, mute and a sweepable highpass filter.

WINDOW DRESSING

We've still got money to burn and no desire to invest in large-cap derivatives. So if your studio needs some acoustic treatment, try the Primacoustic London 16 Room Kit (\$1,499). The 42 high-density fiberglass panels in the kit—designed for rooms up to 200 square feet—are fabric-coated in beige, gray or black, come with all mounting materials and can address problems in your room such as standing waves, flutter echo and primary reflections.

Glyph has earned its reputation for reliable external hard drives. The GT 062E 6TB (\$599, Mac/PC) hits a good multipurpose sweet spot. Its two 3TB 7,200 rpm drives offer FW800, USB 2.0, eSATA connectivity and RAID compatibility.

Finally, everybody wants the Zoom H6 Handy Recorder (\$499) handheld 6-track recorder. It includes four combo XLR/TRS inputs and XY and mid-side stereo mic modules. You can record straight to SD-card (up to 128 GB) or use it as a portable 24-bit/96kHz USB audio interface.

TOTAL COST (MSRP): \$49,725.

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THE ENGINE ROOM

There are two components we'll have to keep digital, as it would not be cost-effective to specify an analog multitrack tape machine. A tape recorder would require expensive tape and a high regular maintenance cost, so let's assume you have a Mac in place and we'll load it up with Avid Pro Tools 11 (\$699).

I've decided to go with Pro Tools for a few reasons. It is the industry's most used professional recording software and will allow you to carry your sessions across various setups. And it has backward compatibility, allowing you to save sessions as older PT formats (except for the AAX plug-ins). All the third-party plug-in developers are catching up quickly with AAX, so once you're all settled in comfortably with your analog gear, you can add the plug-ins of your choice and turn this into a truly powerful hybrid studio.

THE ANALOG HUB

The centerpiece of any analog studio is the console. Having had serious quality time with API consoles of several vintages, I've chosen The Box (\$17,995) as the workhorse. The Box offers four API preamps, full aux section, two classic 550a EQs and two extra 500 Series slots on the recording channels. You also have 16 return channels on faders, with the same aux sections and insert points on

each channel. The console features a stereo 527 bus compressor that is routable to the recording paths, as well. And with some creative patching, you can turn it into a 22-channel console for mixdown.

THE BRIDGE

We need to get audio to and from our DAW. We have plenty of inputs on the console, and the interface needs to be able to handle a decent number of channels to make it worth it. Universal Audio introduced the Apollo 16 (\$2,999) a little while back. This unit gives you 16 analog in and out. The extra AES/EBU and MADI connections easily allow for future expansion.

STAYING ON TRACK

Assembling a nice, versatile selection of microphones is one of the most important undertakings any studio can make. If the source material isn't right, no amount of mixing and mastering wizardry is going to salvage the job.

The large-diaphragm multi-pattern tube mic is going to be an Advanced Audio CM47 (\$735). This mic was inspired by the famous U 47, and frequency-wise it behaves like a blend of the U 47 and the 67. A great pickup for vocals and acoustic instruments.

Ribbons have proven to be very useful indeed. They tend to be smoother and provide a nice old-school character. The AEA R92 (\$765) is a true chameleon and is unique in that the front and rear lobes of the figure-8 pattern sound slightly different. The front is regarded as the crisp side, and the back is more smooth, making this a great mic for



guitar amps, strings and even vocals.

The Lewitt LCT 640 (\$799) will bring transparency. The 640 large-diaphragm condenser offers multiple polar patterns from omni to figure-8 and everything in between. It's a clear and crisp mic, good for vocals, guitars, percussion and brass.

For stereo applications, we've added the Josophson C42 Cardioid Matched Pair (\$975).

And, of course, we could not forget the timeless, jack-of-all-trades, Shure SM57 (\$99).

OUT OF THE BOX

To complement the sonic character of the API, we're adding a nice selection of outboard EQs, channel strips and compressors so we can dial in the different sounds we want.

We're adding flavor and flexibility with the brand new Manley Core (\$2,000). This all-in-one unit delivers a mic/DI input, ELOP compressor, EQ, limiter and the Manley sound.

One of our free 500 Series slots in The Box will be filled with the Rupert Neve Designs 517 (\$850), adding another mic pre/DI and gentle compressor. The RND's variphase makes it extremely useful when you're combining signals, like a couple of mics on the guitar cab.

In addition to our musical 550a EQs, we'll add the Cartec EQP-1A (\$2,799), a modern-day replica of the classic Pultec—it will add that exact character, really.





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SF-2

Royer SF-2

"We have many wonderful microphones in the Skywalker Sound locker, but once I tried the SF-2 I knew we had to add a pair. It is a beautiful sounding microphone, especially for orchestra instruments like timpani."

Leslie Ann Jones – Multi Grammy-winning Engineer, Director Music Recording and Scoring at Skywalker Sound

"Who would have thought such a little ribbon mic as the Royer SF-2 would have such a magnificent, smooth, AND detailed sound? I've used these babies as main orchestra mics, main chorus mics, solo vocal and instrument mics, and even on Leslie cabinets. The SF-2 is an essential tool in MY bag of tricks!"

Michael Bishop – Multi Grammy-winning Engineer, Telarc, Five/Four Productions



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Manley's Massive Passive (\$5,040) will probably end up taking on most mix and final master EQ duties, but will also provide surgical tweaks on individual channels.

The occupant of our last spare 500 Series slot kind of straddles the EQ and dynamics section. Moog's Ladder (\$769) is described as a filter, but it is so much more than that. Used creatively, the Ladder will turn into a sort of dynamic EQ, allowing you to sculpt the sound and mess around with the envelope—an extremely useful tool.

Even though we have a dual-channel API bus compressor onboard, we're adding a pair of Dave Hill Designs linked Titans (\$3,398 for the pair) to handle the situations where you need more control and snappier compression behavior. The Titans are versatile and will also tackle some heavier limiting jobs.

For all re-amp applications and those times when the guitarist turns up with a bunch of pedals, I've spec'd Jonathan Little's Pepper (\$601). The Pepper turns pedal levels into pro line signals; it's also a DI and impedance matcher.

MONITORING

You could have the best gear in the world, all the best source material, but if you can't hear what you're working on, there's no point.

The Box accommodates two sets of monitors. As our main near-fields, I've selected UK-designed and made Unity Audio Boulders (\$7,183). The Boulder is a Corian-fronted three-way enclosed monitor with a coaxial midrange ribbon tweeter. Don't expect these babies to be all nice and sweet; they are brutally honest and will give you a clear perspective on your work.

Our Boulders will sit and sound nicely on a pair of IsoAcoustics ISOL8R200s

(\$149.99) to decouple them from the surface they'll rest upon.

The alternative monitors will have to give us a more varied "look" at the sound. This is going to be the reference as to how

the rest of the world may hear the mixes. Avantone Active Mix Cubes (\$469) are based on the classic Auratone design, and will give you insight into how things may sound on computer speakers, radios, televisions, etc.

It's always a good idea to check your work on a nice set of headphones, and the Grado Labs SR325is (\$295) are comfortable and sound amazing.

The Grados are not fully enclosed, so they won't cut it in the live room. The Audio-Technica ATH-M50s (\$398 for the pair) are fully enclosed, have a great low-end response and are comfortable during long sessions. I've added two of these, just in case you end up recording a couple of players at the same time.

Avenson Audio's Headphone Amp (\$750) will drive the headphone mixes from the cue sends.

Working in our industry should be fun, creative and passionate. We work long hours, and there's always a need to chill out for a bit. To provide some light relief, I've added in an Oster Old Fashioned Red Theater Style Popcorn Maker (\$59).

TOTAL COST: \$49,826.99. And I'm donating my leftover \$173.01 to Markkus to put toward a piece of analog gear.

Long live analog!



Direct A/B Comparisons between the Earthworks ZDT and Eight of the Best High End Preamps on the Market



Earthworks® ZDT Zero Distortion™ Preamp

- Class A, transformerless design
- Less than one part per million distortion
- 48V phantom power
- Polarity inverse switch
- Clip indicator
- High output level +30dBu
- All discrete components
- No ICs in the signal path
- 22V/μs slew rate
- 1.4μs impulse response
- Separate XLR & 1/4" T-s outputs
- Very low output impedance will drive long lines without interference or signal loss
- 1/4" Phone connector output will drive balanced or unbalanced inputs
- Full differential (balanced) from XLR in to XLR out
- Frequency Response: 1Hz to 200kHz ±0.5dB
- Input Noise: 1.6nV/Hz^{1/2} at 20dB gain; 0.6nV/Hz^{1/2} at 60dB gain
- EIN: -132dBV at 20dB gain; -143dBV at 60dB gain
- Output DC Offset: ±1 mV typical, servo balanced
- XLR female balanced transformerless inputs
- Input Impedance: 10KΩ phantom on, 100KΩ phantom off
- XLR Male balanced transformerless (stepped) outputs
- 1/2" TRS XLR Fem. balanced transformerless (variable) outputs

It is very rare that an audio engineer has the opportunity to do direct A/B comparisons of the top nine high-end audio preamps. This engineer has and his observations are noteworthy.

Wyatt Hill, a seasoned recording engineer, has done direct A/B comparisons between the Earthworks® ZDT preamp and 8 other premium preamps: Manley® Tube Mic Dual, Grace Design M801, Avalon Design AD 2022 & VT-737sp, Universal Audio 2-610, TRUE Systems Precision 8, Focusrite® ISA 828 & Red 1.

Wyatt explains his A/B comparison experience: "I bought my first Earthworks Zero Distortion Technology preamp over ten years ago from the suggestion of my Sweetwater Sales Engineer, Jeffrey Green. This preamp was amazing! The sound was ridiculous! It was so clean and pure. From that moment anytime I thought about buying another preamp I had to compare it with the Earthworks preamp. When comparing the Earthworks ZDT preamp to the Precision 8, Focusrite® and others mentioned above, there really was No comparison. The other preamps were clean but they lacked in the big beefy sound that I got from my Earthworks ZDT preamp. I thought these preamps were clean until I compared them to the Earthworks ZDT. I could hear detail and punch and airiness in the Earthworks ZDT that I could not hear in the other preamps. The Grace preamp comes the closest to the Earthworks preamp in sound but still falls short of the Earthworks stunning clarity, sheen and sparkle! The Manley® Tube preamp is a different animal. Compared to the Earthworks ZDT, the Manley® was clean and had that nice tube sound, but lacked the depth and airiness that the Earthworks has. After comparing the Avalon 2022 & VT-737sp, Universal 2-610, Focusrite® ISA 828, Red 1 and Precision 8 to the Earthworks ZDT, it was very obvious that these other preamps could not live up to the performance of the ZDT preamp! They all sounded so thin and dull compared the Earthworks ZDT. Hearing is believing! In conclusion, I would have to say my favorite preamp is the Earthworks ZDT hands down with the Manley® following in 2nd place and Grace in 3rd place. However, if I were forced to choose between the Earthworks ZDT and the Manley® Tube preamp, I would choose the Earthwork ZDT, as it is all around a great preamp that sounds superb!"

"If you have some great microphones (any mic), the Earthworks ZDT preamp will make a significant difference. You will be hearing (really hearing) your mics for the first time. The

Earthworks ZDT preamp is so pure and clean that you can hear detail and characteristics from your microphone that other preamps just cannot deliver. It's like comparing Belden cable to Mogami® cable. There's no comparison. All my microphones sound great through the Earthworks ZDT preamp with a detail I have never heard before."

"If anyone else were to do the comparisons that I have done with the Earthworks ZDT preamp, I feel very confident that most if not all would come to the same conclusion I have come to. The proof is in the hearing! Specs may be important but bottom line, hearing is believing and that's what is important when you are recording tracks in the studio."

"When clients come to my studio they are blown away by the pristine clarity and cleanliness of the Earthworks ZDT preamp. My clients expect the best and that's exactly what they get with the Earthworks ZDT. You just can't beat it!"

"When a new preamp comes out I always compare it with Earthworks ZDT. Although, many people buy preamps for color or to color the sound, I feel that that is what microphones are for. To me quality comes first! Having a great quality preamp comes first then a great microphone to add certain characteristics and color to your sound."

"If I had my way and could afford it, I would have all Earthworks ZDT preamps in my studio with a couple of Manley's for the tube sound. In my opinion these are the best preamps on the market. The Earthworks ZDT preamps are awesome! You ask, 'Where's the beef?' It's in the Earthworks ZDT! Bottom line the Earthworks ZDT preamp delivers the cleanliness, airiness, punch, detail, sheen, sparkle and clarity any engineer would love to have. I know that is a lot of adjectives to describe this preamp but it is true. See or should I say hear it for yourself and you decide. **The Earthworks ZDT preamps are hands down, the best preamps on the market!**"



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"The Earthworks ZDT preamps are awesome, they are beefy, they have the punch, in addition to the clarity, sheen and sparkle. The Earthworks ZDT preamps are hands down, the best preamps on the market!"

Recording Engineer, Wyatt Hill

DIGITAL AUDIO WORKSTATIONS

IMPROVED WORKFLOW ACROSS THE BOARD

by THE MIX EDITORS

Price has seemingly gone down everywhere, and 64-bit is becoming the new normal. But it seems the big trend recently has been improved workflow enhancements, as manufacturers look to make Digital Audio Workstations an even more seamless tool in professional audio production. Here, then, are the latest professional options in DAWs.



Ableton Live Version 9.1 provides the ability to open two windows on one or two monitors, allowing Arrangement and Session Views to be open side by side, or for Live's sample display or MIDI note editor to be viewed in a separate

window. For users of Ableton's Push, the Live 9.1 update introduces a newly developed melodic step sequencer. Using Push's pads, notes may now be entered manually or played by hand in real time. In addition, all of Live's automatable parameters can now be step-sequenced and edited directly from Push's encoders.



Acoustica Mixcraft Pro Studio 6 has a streamlined interface that includes instruments, effects, loops, recording and editing tools, advanced MIDI and audio routing capabilities, video editing features, a notation engine,

MIDI control surface support, ReWire hosting, and more. Effects include iZotope Mastering Essentials, Acoustica Pro Studio Reverb, Acoustica 31-Band EQ, X-Bass, Transient Vitaliser, Twisthead Preamp, and the FAT+ plug-in for adding deep lows, crisp highs, and gritty tube warmth to recorded tracks.

Adobe Audition CC for Mac and Windows streamlines audio editing and production, and is available exclusively in Adobe's Creative Cloud. Now 64-bit, Adobe Audition CC provides a multitrack environment



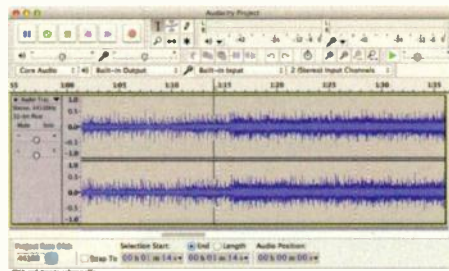
elements of their audio using Adobe Photoshop CC style tools, including powerful selection tools.



(including color-coded tracks, automatic crossfades and clip merging, and other enhancements), traditional waveforms, and a Spectral Frequency Display where users can isolate and repair

Apple Logic Pro X is a versatile production environment for the Mac that is built around an elegant, single-window interface where editors, file browsers, toolbars, and sound controls can be easily brought in and out of view as needed.

Logic Pro offers punch recording, automatic take management, support for 24-bit/192kHz audio and more than 250 audio tracks, and the ability to run hundreds of plug-ins. Its Low Latency mode temporarily bypasses plug-ins that add latency.



Audacity 2.0.5 is a free, open-source multitrack audio recorder and editor distributed under the GNU General Public License (GPL) for Windows, Mac OS X, GNU/Linux and other operating systems with an interface that

is translated into many languages. Audacity records live audio; records live computer playback on any Windows Vista or later machine; converts tape-recorded audio into digital recordings or CDs; edits WAV, AIFF, FLAC, MP2, MP3 or Ogg Vorbis sound files; cuts, copies, splices

or mixes sounds together; changes the speed or pitch of a recording; and more. Audacity supports LADSPA, Nyquist, VST and Audio Units effect plug-ins.



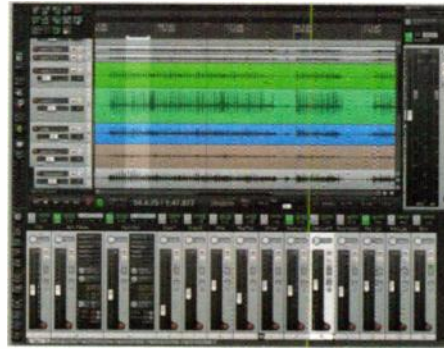
Avid's Pro Tools 11 offers high-powered audio and video engines, 64-bit architecture, expanded metering, and direct HD video workflows. Pro Tools 11 promises exponentially greater processing power compared with pre-

vious versions—using the same hardware—to create bigger, more complex sessions. The Avid Audio Engine enables customers to monitor record inputs at ultra-low latency without sacrificing plug-in performance. Offline bounce to disk speeds up the output of mixes while ensuring ultimate accuracy.



Cakewalk offers three versions of its SONAR X3 workstation. SONAR X3 offers unlimited track and bus counts along with VST3 synth and effects support, 64-bit audio engine, unlimited FX insertions, "speed" comping, YouTube export, direct Gobbler integration, color-customizable "Skylight" interface, 12 software instruments, 27 effects and more. SONAR X3 Studio adds Melodyne Essential with deep ARA integration for pitch processing and audio-to MIDI conversion. SONAR X3 Producer further adds the ProChannel Tape Emulator, "widescreen" fly-out spectrum analysis on every ProChannel QuadCurve EQ, Tone2 BiFilter filter/distortion processor, 57 total plug-in effects, and full versions of both the Rapture and Dimension Pro software synths for a total of 23 instruments.

Cockos Reaper 4 is a complete multitrack audio and MIDI recording, editing, processing, mixing, and mastering environment that works with almost any hardware and can be used in combination with a number of other software programs and plug-ins. It lets you record audio and MIDI from multiple inputs at once, layer recorded tracks and takes over previous



recordings, and edit recordings. It also presents hundreds of audio and MIDI processing effects and is said to support thousands of third-party effects.

Fairlight's Dream Version 4 post-production software is included with its Xynergi and EVO hardware controllers. New features include mouse-based editing enhancements;

controllers. New features include mouse-based editing enhancements;

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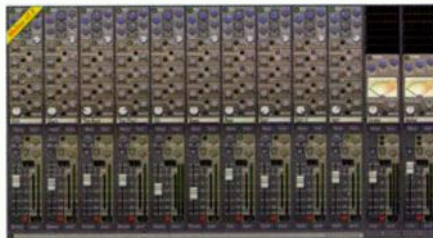
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a single-screen interface with comprehensive per-track controls and new Mix Panel choices; improved dynamics, sidechain and MaxLinking across groups; multi-client ASIO bridge for EVO to host other audio products, such as Pro Tools and Nuendo; Clip Bin and Clip Store functions for storing projects; and increased speed and new features for the Audiobase sound FX database.

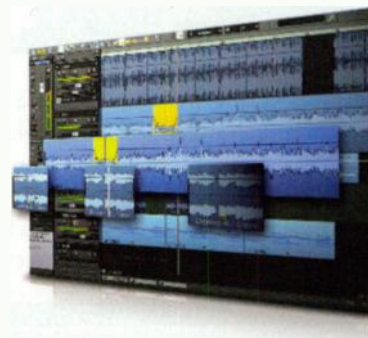


Harrison Mixbus 2.3 is a free upgrade to the company's full-featured DAW with "True Analog Mixing," a knob-per-function interface based on Harrison's renowned 32 Series and MR Series music consoles. Mixbus works on OS X, Windows and Linux, and uses industry-standard I/O and plug-in formats (VST, AU). Mixbus offers precision algorithms for EQ, filter, compression, analog tape saturation and summing. The upgrade also includes three high-end plug-ins for evaluation and purchase.



Image-Line FL Studio 11 represents more than 14 years of development, offering one package for composing, arranging, recording, editing, mixing and

mastering. FL Studio comes in three versions—Fruity, for music composing and arranging; Producer Edition, offering full audio recording and post-production capability; and Signature Edition, which is a bundle of Producer Edition plus a limited collection of the company's "signature" plug-ins. With Producer Edition V. 11, FL Studio and some plug-ins now respond to Multi-touch, with Microsoft gesture functions supported.



Magix Samplitude Pro X offers arranging, recording, editing and mixing, all the way to professional mastering and CD/DVD authoring, with a fully customizable interface. Its audio engine offers 64-bit support, mastering quality plug-ins and 5.1 surround mixing. Samplitude Pro X now supports Avid's Artist Series Controllers using the EuCon protocol, which can be activated in the software's Hardware Controller Settings.



MuTools MuLab Version 5.4.1 for Mac and Windows records, edits and plays multitrack audio and MIDI. Flexible tracks and sub-tracks support audio, MIDI and automation parts. It features easy modular architecture, a high-quality sound engine, multi-core CPU support, automatic mono/stereo handling, a streamlined and versatile mixing desk, integrated synths, samplers and effects, support for audio

and MIDI VST plug-ins, multi-session support, template sessions, extensive drag-drop support, multi-monitor support, and more.



MOTU's Digital Performer 8 is compatible with both Mac OS X and Windows and includes 64-bit operation. DP8 introduced a new video playback engine, Punch Guard confidence recording, 17 included plug-ins, 15 user inter-

face themes, and new plug-in management features. Version 8 ships with two classic guitar amp models, a bass cabinet model, several classic guitar pedals, modeled analog delay, a multi-band dynamic equalizer, a precision delay, a de-esser, the Subkick kick drum enhancer, and Springamabob, a modeled vintage spring reverb processor.



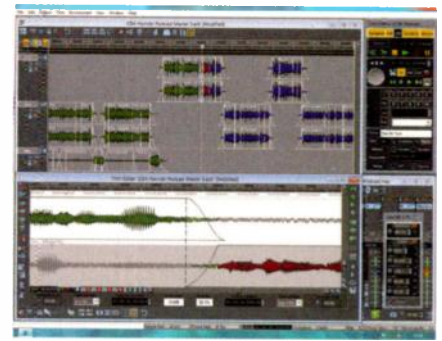
PreSonus Studio One 2.6 for Mac and Windows integrates with PreSonus StudioLive AI-series mixers, Nimbit and SoundCloud. The Fat Channel Native Effects plug-in is a native version of the

StudioLive 32.4.2AI mixer's Fat Channel, including the gate, compressor, limiter and 4-band fully parametric EQ. With the plug-in and the saved mixer scene, you can play your tracks using the same processing and settings that were being used during recording—even if a StudioLive mixer is not available.



Propellerhead Reason 7 music production software studio—comprising an expandable, freely routable rack of instruments, effects and sounds for writing, recording, and remixing tracks—offers an improved mixing console at the end of the chain. Important mixing controls like level and pan are now available in the rack as well, and new bus channels make it easy to group tracks and mixer groups to process them together.

Prism Sound's SADiE 6 is compatible with Prism Sound's audio interfaces as well as a range of third-party Windows-compatible devices with ASIO or WDM drivers, and allows a choice between proprietary audio I/O and DSP processing, or standard sound-card I/O and DSP functions running on the host computer. SADiE 6.0.7 includes a 64-bit version of the application and 64-bit drivers for the LRX2 and BB2 SADiE hardware platforms. SADiE 6 is available in



Continued on p. 63



Multimedia Connectors etherCON | HDMI | USB | Firewire lockable connector system



The etherCON system for harsh and demanding environments | "A," "B," and "D" size receptacles available in feedthrough, vertical and horizontal PCB, or IDC terminations | CAT6 - data rate up to 10 GBit/s | Push-Pull mating design provides secure locking system | USB / HDMI ready-made cable assemblies with removable rugged diecast cable carrier | Firewire IEEE1394a | Push-Pull locking system | Patch Cable dust and water resistant sealing in combination with Neutrik Receptacle | Universally accepted standard D-shape housing | DB15 for RGB video and DB9 for serial data | Anything else! For example: Professional solutions designed for AV

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NEUTRIK

MIX REGIONAL: AUSTIN

ROYAL FOREST IN THE FIELD, WITH IPHONE

Austin-based band Royal Forest likes to fly in the face of limitations and laugh. Sometimes literally. So far, the band has recorded four songs under what one would normally consider bizarre conditions.

"Civilwarland" was recorded in the desert and tracked to a Tascam Porta 04—powered by a car battery—buried in the sand beside the band (the cables weren't long enough to get it out of the shot); "John Denver" was tracked inside a Piper Arrow II single-propeller airplane in flight (it took five flights in total, with two musicians per flight, save the guitar recording as there wasn't space); "Everyone Who Knows You" was tracked inside a WWII submarine (Douglas got permission from the Parks Board; after making a contribution, he's now a lifetime member of the American Undersea Warfare Center); and finally, the band's latest, "Keeping Time," was shot entirely on iPhones using the Vine app, which allows for six seconds of video and audio recording, then loops it.

Guitarist Justin Douglas says it was nearly impossible to get a loop just right using Vine, so the band did more than 1,000 takes. "We did the math: six seconds equals eight bars at 150 bpm, and we performed individually to an in-ear click track. We shot a ton of drum beats and fills in different spaces, then edited them back into a song structure at the studio. We wrote some basic parts in the studio, but most of it was written on the spot."

Once the songs were tracked, Douglas arranged and mixed in Steinberg Nuendo. The iPhone-based track was kept intentionally spare, with very few effects. "The only



Royal Forest guitarist Justin Douglas during the recording of "Everyone Who Knows You." Note the small amp inside the torpedo tube.

filter that happened was when I had my thumb over the iPhone's mic," Douglas says. "It wound up sounding cool, so we kept it. We tracked the song in a park that has large cement drains, so we used the natural reverb and slapback as much as was tasteful.

"Surprisingly, the mixes [overall] tend to take about half the time of regular studio mixes," he says. "I attribute this again to the tracks already being very focused and the feeling or intent of each recording predetermined, so there's not much hunting around in the mix.

"I really believe limitations spawn creativity," he continues. "We've got a great little studio here [Douglas' Austin-based studio, Shine], and can do just about anything we want in it, but so what? So does the guy down the street. It can be easy to get bogged down in options and decisions when time, track count, microphone options and so forth are essentially open-ended. So as a way of getting ourselves out of a little production rut, we decided to go someplace and do just the opposite, and see what happened. For example, small airplanes are extremely noisy in flight, so let's make a noisy version of this song. The submarine is one big mechanical filter and reverb chamber, so let's record the drums and guitars in periscope shafts and torpedo tubes. By taking this approach, everything sounds like it's supposed to be there, instead of fighting inherent acoustic abnormalities."

For an extended interview, visit mixonline.com/032014.—
Lori Kennedy

Arlyn Studios Completes Redesign

Last summer, Arlyn Studios (arlynstudios.com) put the finishing touches on this refurbished A room (pictured). Redesigned by Steven Durr (who designed the studio originally in 1984), the studio features a unique hybrid console.

"After many months of ideas and designs by Freddy [Fletcher, co-owner] and our chief engineer Jacob Sciba, and Harley Baker of Audioelectronics in Dallas, and many, many months of intricate hard work by Audioelectronics and Jacob, we have completely 'married' our vintage Neve and vintage API with a custom center section by Fred Hill of Nashville," says studio co-owner Lisa Fletcher.

The 7,000-square-foot Arlyn occupies the historic Austin Opera House building and now offers expanded facilities, including an SSL 4048 G+ equipped B room that the owners and Durr completed just before SXSW 2013.—*Barbara Schultz*



SESSIONS: AUSTIN



Photo: Aaron Kimbrey

EAR owner/engineer James Stevens in the studio.

EAR (EAST AUSTIN RECORDING) STUDIOS

Songwriter Bill Carter worked on new material with studio owner/engineer James Stevens—cut to Pro Tools and mixed on an SSL to 1/2-inch tape...Punk-rock band Yuppie Pricks, along with producer Mark Hutchins and engineer Stevens, cut material to 2-inch 24-track, transferred to Pro Tools, and mixed on the SSL...Indie-pop band Charlie Belle worked with producer/engineer Stevens on new tracks...Pop-rock band These Fine Moments recorded material with producer Stephen Dorster and Stevens engineering...Singer-songwriter David Halley worked on new tracks with producer Will Sexton and engineer Stevens...Pop-rockers Moonlight Towers shared producing and engineering duties with Stevens on new material...Folk-Americana group Loves It! Worked on new music, with Stevens producing and engineering.



Spoon in the studio working on their latest LP.

a vintage Neve 8016, with Eno producing and Eno, Bell and Gerhard engineering.

PUBLIC HI-FI

Rock band Spoon have been tracking their eighth LP, with Britt Daniel and Jim Eno producing and Eno, Brad Bell and Matt Gerhard engineering...Indie singer-songwriter Dana Falconberry worked on material for her upcoming full-length, with Eno producing and Eno, Bell and Gerhard engineering. Two of the songs will be released on the studio's 12-inch single series Public Hi-Fi Sessions. The majority of sounds on the two tracks were created using the Teenage Engineering OP-1 keyboard...Indie-rock band The Kickback worked on their first full-length record—tracked mostly live to a Studer 827 tape machine—with Eno producing and engineering, and Bell and Gerhard also engineering...Rock band Mainland recorded a four-song EP, which was tracked and mixed through



Engineer Tim Palmer tracks indie-pop band Yuma.

STINSON RECORDING STUDIOS

Metal band Trivium recorded drums for its latest album, Vengeance Falls, with David Draiman of Disturbed producing...Stinson engineers John Stinson, Jet Jaguar and Patrick McCurry recorded Grammy Award-nominated choral ensemble group Conspirare at The Carillon in Austin using the studio's mobile recording rig...Indie-pop band Yuma recorded a few singles with engineer Tim Palmer...Hip-hop artist Drastik recorded a single with producer Matt Noveskey of Blue October...Blue Bear recorded their 2013 EP *Santa Fe*, with Stinson engineering.



Black Books has been doing some tracking for a new forthcoming album on Believe Recordings.

ORB

Matt Noveskey produced and Kevin Butler engineered and mixed four songs on songwriter Joshua Radin's latest album, *Wax Wings*...Butler mixed a few tracks and handled a couple of overdubs for alt-rock band Blue October's album *Sway*...Alt-rockers Courier did initial tracking for their new album in Studio A...Rock band Quiet Company did tracking—almost entirely live into a 40-in, 40-out Pro Tools HDX rig—for their new album...Dream-pop/folk/rock band

5th Street Studios Commissions 1972 EMI Console



The 1972 EMI MF10 console at 5th Street Studios.

As part of a successful effort to lure local rock gods White Denim (Downtown Records) back to Austin to record their sixth record, *Corsicana Lemonade*, 5th Street Studios acquired a rare example of a Carl Lindstrom 1972 EMI MF10 console. The board was secured from Hamburg, Germany, and under the direction of producer Jim Volentine brought to a secluded Lake Austin waterfront home that was converted into a vintage analog studio for six weeks. "There's a lot of history with the console; for example, the V376 amplifiers were pulled from the broadcast equipment used at 1972 Munich Olympics," says studio owner Ryan Joseph. "Additionally, the console is responsible for the vast majority of late Austrian composer Herbert von Karajan's post-1972 recordings."

Currently residing in a room now dubbed "Studio Ronjo," the console complements 5th Street's 8058 MkII and custom SBC 80 Series Neve consoles. The studio also features one of the finer collections of vintage analog equipment in town, and has become a mainstay for Volentine, who, since finishing White Denim's *Corsicana*, has also mixed artist Trey Rosenkamm's upcoming release, as well as White Denim vocalist/guitarist James Petralli's solo debut as Bop English.

BLUE ROCK ARTIST RANCH

Deep in the Heart of Texas

BY BLAIR JACKSON

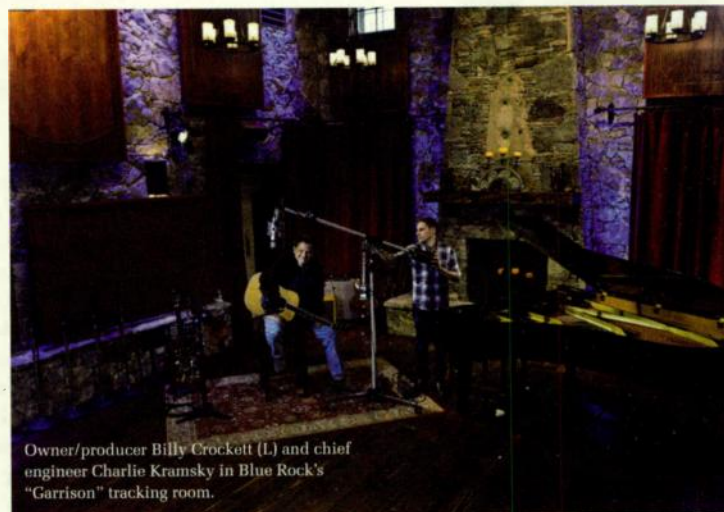
As Texas' music mecca, Austin has developed a healthy recording scene to service the ever-growing number of acts who have grown up there or, just as likely, migrated there from all over. (Few cities have a calling card as compelling as South By Southwest—SXSW—which started in 1987.) There are studios of every size and for every budget dotting the metropolitan area, and one of the coolest and most beautiful recording spots is found about half an hour southwest of downtown, in the scenic Hill Country, in the small town of Wimberley (pop. 2,600)—Blue Rock Artist Ranch and Studio.

Now in its eighth year, Blue Rock was built from scratch by musician, songwriter and producer Billy Crockett (yes, he's a distant relation of Davy Crockett, of Alamo fame). And speaking of the Alamo, Crockett says that the look of the sprawling Blue Rock compound was inspired by his own love of Texas history.

"This land was so inspirational," he says. "We used 19th century architectural elements and studied court documents of old churches and old garrisons—back when Texas was a republic [1836-46]—and used them as a guide in building it. We have this mythology that there is a garrison where the officers slept, and there is a corral out front where they would water their animals, and a lookout tower. There are acres of trails, and we used all native materials and hand-gathered stones for the building of it. We let the stone and wood be our guide, so it looks like it grew out of the ground here." Austin's Lou Kimball was the architect, while the central acoustic consultant and studio builder was Nashville-based Michael Cronin.

The studio's main tracking room—The Garrison—is built completely out of stone and wood, from floor to vaulted ceiling, with large, custom-made, movable acoustic panels on the walls, "so if you want to, say, track solo piano and have the character of the room be an active participant in the sound, you can do that. Or, if you want to really tame it so you can control two or three acoustic instruments in the same space, you can do that, too," says Crockett, who got his audio education at the University of Miami, toured for decades as a working musician, and did production and A&R in Nashville for several years. "The panels have a fiber board and cloth side, and they have a hard walnut side, so when the walnut side is facing out, they become a bass trap from the back and very reflective from the surface. We can turn them any direction, and we can also take them all the way down and pull the drapes out. The room is quite tunable."

The Texas Room is actually bigger—it's 24x31x22—and is used for the studio's popular long-running live concert series, which has featured such artists as Joe Ely, Sarah Jarosz, Bill Frisell and Carrie Rodriguez, Jesse Winchester, Butch Hancock, Shawn Colvin, Iris Dement, Christopher Cross, Kelly Willis and many more regional performers, playing before a small audience. A brand-



Owner/producer Billy Crockett (L) and chief engineer Charlie Kramsky in Blue Rock's "Garrison" tracking room.

Photo: Rodney Bursiel Photography

new addition to the studio's multimedia portfolio is the 30-minute Blue Rock Live sessions webcast series. "We videotape almost everything now," Crockett notes. "We have a video crew and HD cameras, and we're all trying to invent ways to keep the integrity of the music but also get the fans involved more."

At the heart of Blue Rock's control room is a new Neve 5088 console. Comments Blue Rock's chief engineer, Charlie Kramsky, "Rupert Neve lives just down the road from us, so we're really close to the Neve people. They're really great to work with, especially when we were putting the console together, because they did a bunch of mods for us." Kramsky grew up in Dallas, studied engineering at Texas State University in San Marcos (close to Wimberley), and was an intern at Blue Rock before departing for four years in New York, where he learned the ropes at Avatar Studios. In fact, one of his first major lead engineering projects at Avatar was Bobby McFerrin's *spirityouall*, which won a Grammy this year for arranger Gil Goldstein.

"Everything I learned at Avatar works here," Kramsky says. "The studio itself is just really well-built, the rooms sound so good, and everything in here—the mics, the gear—is fantastic. And there's a lot of variety to the work and who comes in here."

The appeal for some acts is that Blue Rock can serve as a comfortable residential studio for out-of-area artists, with a separate three-bedroom "Band House" and smaller "Producer's House." As Crockett says, "We're set up for full-tilt hospitality, with lodging and a full studio staff. I tried to dream big about a place where artists could come and go deep, deep, deep into what they love, and get a chance to turn off the world and immerse themselves in the thing that they're here to do."

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Tech // new products



PRISM ATLAS INTERFACE

No-Compromise USB I/O

The Atlas from Prism (\$6,995) is a USB interface featuring 8 channels of analog I/O with mic preamps, two Hi-Z instrument inputs, stereo digital I/O (S/PDIF and AES) and optical I/O (ADAT, ADAT S/MUX or TOSLINK). Other features include MIDI and wordclock in/out, two headphone outs with a single

volume control, one Ethernet port, one USB 2 port and eight line outputs. For use with Pro Tools HDX, there is an MDIO expansion slot that can host an optional card. Atlas offers drivers for Windows Vista 7 and 8 and Core Audio on Mac OS X 10.4 and up.

STEINBERG UR44 USB INTERFACE

iPad Compatible I/O

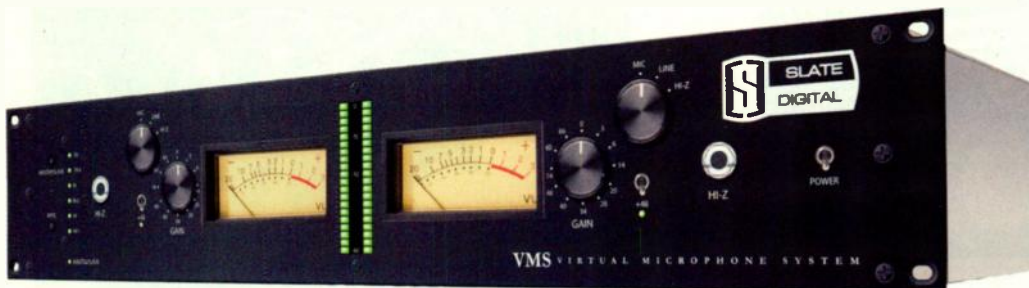
This 6-in, 4-out USB 2 audio interface from Steinberg (\$399) operates at up to 192 kHz/24-bit and features MIDI input/output, Class-A D-PRE microphone preamps and class-compliant mode for iPad use. Other features include latency-free monitoring with the DSP-powered REV-X reverb and the Sweet Spot Morphing Channel Strip in Cubase, or any other DAW software via the included dspMixFx application. The UR44's four Neutrik combo inputs offer D-PRE mic preamps with switchable phantom power, Hi-Z instrument inputs on channels 1 and 2, and line attenuation on inputs 3 and 4. Other features include two individually controlled headphone jacks and cross-platform compatibility for Windows, Mac OS X and iOS. The UR44 ships with Cubase AI DAW software featuring Guitar Amp Classics and other processing options.



UNIVERSAL AUDIO APOLLO TWIN INTERFACE

Thunderbolt I/O with DSP for UAD

The Apollo Twin (\$899) is UA's latest UAD-2 compatible interface offering 2x6 Thunderbolt I/O and up to 24-bit/192kHz audio conversion. The Twin is available with UAD-2 SOLO or DUO processing and features two mic/line preamps, two line outputs, front panel Hi-Z instrument input and real-time UAD processing for tracking through UA's extensive list of plug-ins at -2ms latency. The new Unison technology promises stunning models of classic tube and transformer-based preamps. Also featured are two digitally controlled analog monitor outputs and eight channels of digital input via an optical connection. Twin comes with "Realtime Analog Classics" UAD plug-in bundle, offering the LA-2A Classic Audio Leveler, 1176LN Limiting Amplifier and Pultec EQP-1A Program Equalizer, plus Softube Amp Room Essentials, 610-B Tube Preamp and more.



SLATE VMS VIRTUAL MICROPHONE SYSTEM

Modeling Magic

The Slate VMS (Virtual Microphone System, \$TBA) consists of both hardware and software that promises to model the most popular microphones of the last 50 years. It consists of the ML-1 side address, ML-2 front address microphones, the VMS dual-channel preamp/converter and the VMS plug-in module. Both mics feature a flat frequency response and "super wide bandwidth," offering a blank canvas the user then passes on to the VMS preamp/converter. The unit uses a "super linear and clean circuit" that presents the uncolored audio signal to the software. The plug-in module offers an array of mic models, including a classic U 47, C12 and popular dynamic and ribbon models.

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FAST

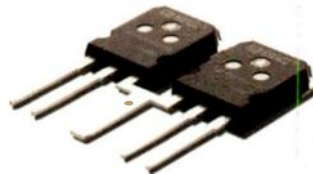
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World Radio History

THE CONTINENTAL CLUB

Austin's Home Base for Performing Musicians

BY BARBARA SCHULTZ

Jamie Wellwarth, production manager at Austin's Continental Club, has been mixing shows, advancing dates and maintaining gear at the venerable roots-music house for more than seven years, and he jokes that he's still sort of the new guy.

"Some of the people who work there—some of the bartenders and managers—have worked here for close to 20 years, and they still love their jobs," Wellwarth says. "I'm still one of the guys with a shorter time here. It's the kind of place where you get in and you don't want to leave."

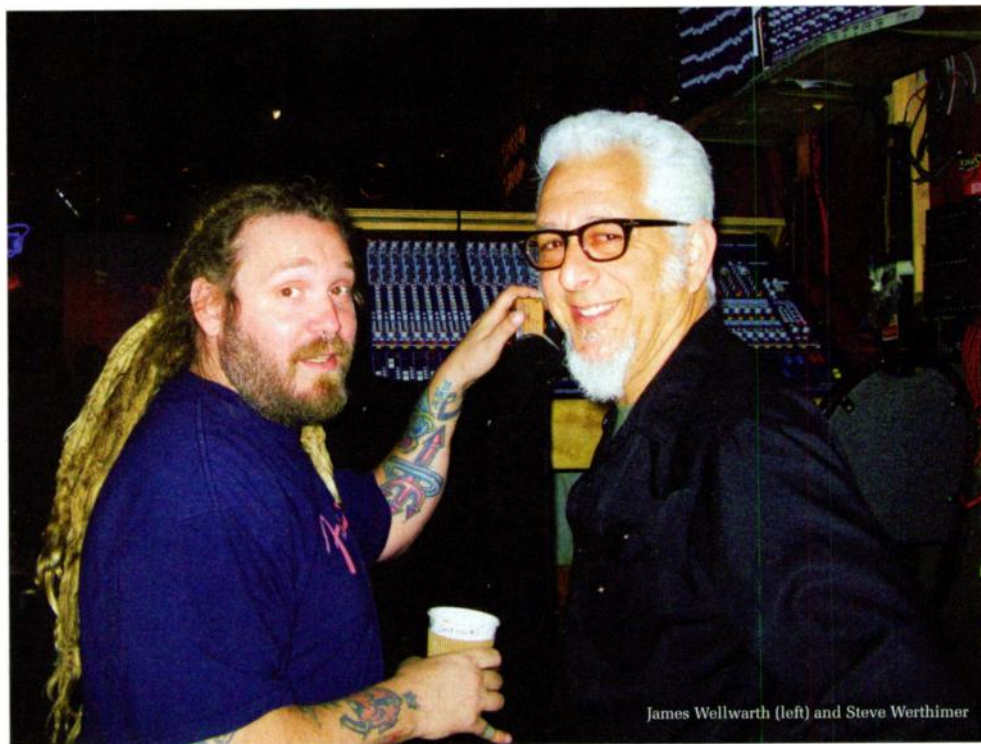
The Continental Club opened as a high-class dancehall in the late 1950s, when the stage saw performances by visiting swing bands of Tommy Dorsey, Glenn Miller and others. After a gear-shift to burlesque performance in the '60s, the club returned to pure music, hosting roots and punk acts, including Stevie Ray Vaughan, Joe Ely, The Cobras and the Butthole Surfers.

Then in 1987, current owner Steve Werthimer took over and refocused the Continental on regional and national roots artists. Stars of the later-minted Americana format, such as Dale Watson and James McMurtry, are frequent guests, and luminaries like Robert Plant and Patty Griffin have played once-in-a-lifetime gigs in the 250-capacity club.

"Steve has done a wonderful job of building a wonderful place for musicians to call home in Austin," Wellwarth observes. "The Continental is known as a place where musicians are treated fairly. You get a fair wage, you're taken care of, and it's all about the music. It's one of those special places."

Wellwarth's career is definitely all about music. In addition to mixing at the Continental Club and servicing the club's sound system (Midas Verona 240 board and E-V QRx212H/75 dual 12-inch two-way and E-V Crossover loudspeakers, as well as Telefunken m-80, m-81, and m-82 mics, etc.), he's the touring FOH engineer for Fitz and the Tantrums and a sales manager for local sound company Nomad Sound, which provides any supplementary gear that the Continental Club's visiting artists might need.

"It helps that I have great people to work with at the Continental Club," Wellwarth says. My assistant, Katrina Lucas, and another engineer, Eric Carter, pick up a lot of slack."



James Wellwarth (left) and Steve Werthimer

Wellwarth's worlds collide during SXSW, however, and it's all hands on deck. During the festival, the Continental Club opens around noon and hosts dozens of visiting roots-music icons day and night. At press time, this year's schedule includes showcases for indie labels Yep Roc, Bloodshot Records and New West—which means performances by John Doe, Dave and Phil Alvin, Lydia Loveless, Luke Winslow King, Robert Ellis, etc.—with loads of announcements still to come. At the same time, Nomad Sound's workload explodes, as the company supplies gear for 16 SXSW stages, including the festival's Austin Music Awards ceremony.

"It's a double-edged sword," Wellwarth says. "You see some of the best musicians in the whole world come through your club, but it's 18-hour days of working, which can break you if you're not up for it. I've been doing this a long time, but I still enjoy it and I look forward to it. I just love being in Austin and being in this business. I wake up and think, I can't believe I get to go do this. I'm mixing Jimmie Vaughan tonight." ■

Barbara Schultz is a frequent contributor to Mix and Electronic Musician.

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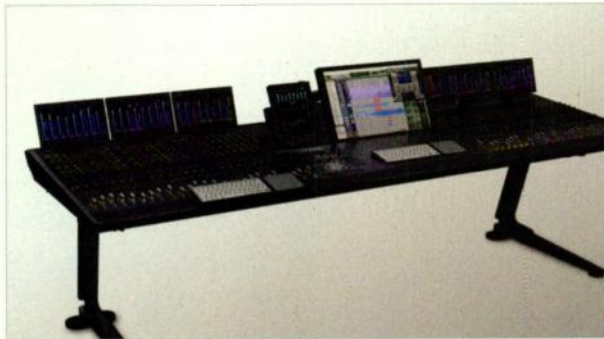
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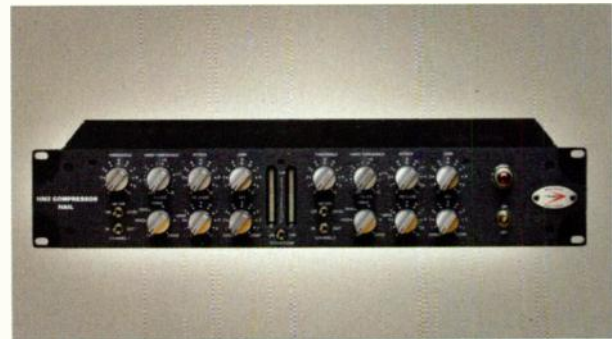
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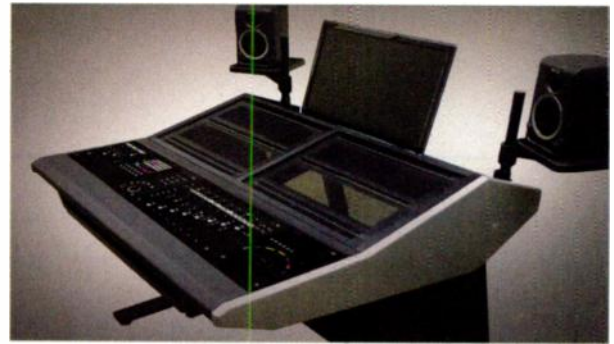
NEUMANN TLM 107

Far from evoking vintage or retro nostalgia, the standard-setting TLM 107 represents an impressive, modern studio mic



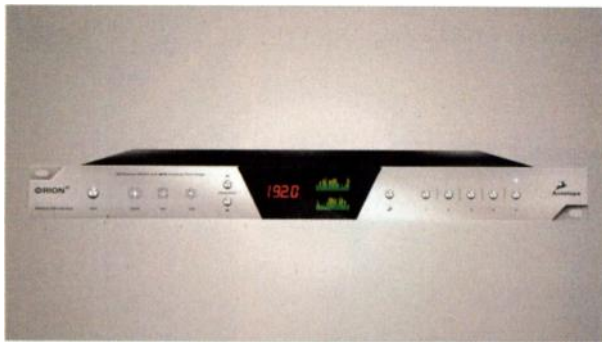
UNIVERSAL AUDIO APOLLO TWIN

UA's new 2x6 Thunderbolt audio interface reinvents desktop recording once again, complete with real-time UAD processing



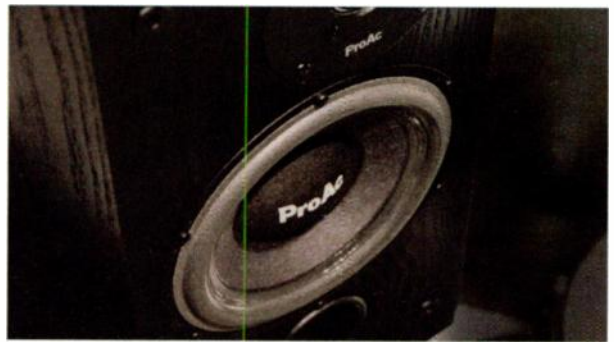
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PRISM ATLAS INTERFACE

No-Compromise USB I/O

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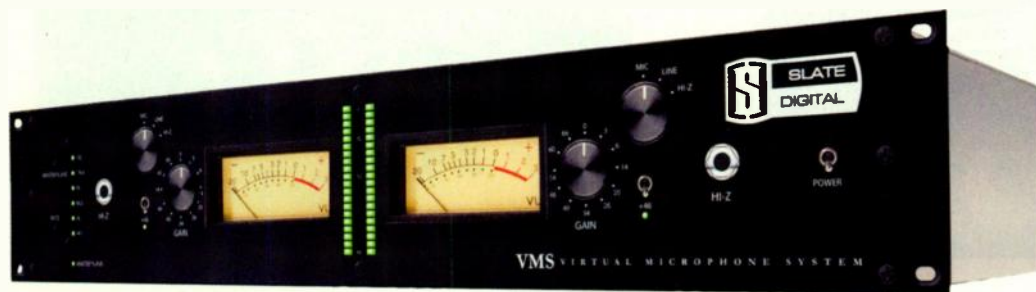
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M-AUDIO M-TRACK EIGHT INTERFACE

USB Converters with Octane Preamps

Adding to M-Audio's popular line of interfaces, the M-Track Eight (\$TBA) lives up to its name by offering eight Octane preamps, eight XLR + 1/4-inch combo inputs, and eight balanced 1/4-inch outputs. Channels 1 and 2 are mic/line/instrument selectable, and there is selectable phantom power in banks of four channels. Also offered are a dedicated control room output, USB/Analog Direct Balance control, dual headphone outs (source selectable), and operation up to 24-bit/96kHz. The M-Track Eight ships with Avid Pro Tools Express and an iLok USB key.

HARRISON 950MX CONSOLE

Designed for DAW Use

The Harrison 950mx console (\$ per config) was specifically designed to minimize common ergonomic issues found in today's studio using DAW and outboard-based setups. The two-tiered front bolster is wide and deep enough for a keyboard and mouse, and the flat top is ideal for monitor(s) and/or small speakers. The frame comes in standard 12, 16 and 24-modules, where mono mic/line inputs or stereo line inputs can be purchased in groups of four. Each module features an insert switch, 3-band EQ, paner, polarity reverse switch, line selector, preamp gain, four aux sends, solo switch and 100mm fader. Other features include four-LED input meters, stereo mix bus compressor, oscillator, talkback mic, headphone jack and more.



RADIAL SPACE HEATER

Summer Is Looking Good



Radial Engineering has released the Space Heater (approx. \$2,000), a single-rackspace, combination 8-channel tube drive and summing mixer. The unit offers 1/4-inch

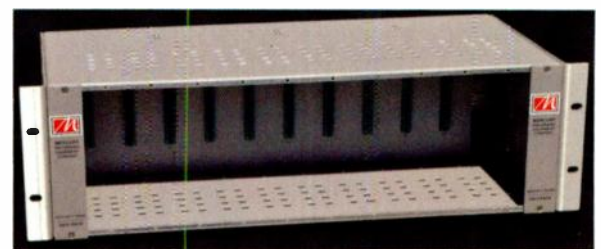
TRS or D-Sub inputs with each channel pair offering left/right output controls, and separate drive control to drive the 12AX7 tube harder, as well as a separate output control. A Heat switch lets the user apply 25, 50 or 100 volts to the tube, coloring the signal with harmonic distortion at lower voltage levels. Also featured is a highpass filter on each pair, insert in/out and a master section with level control, headphone amp and choice of XLR or TRS outputs.



SONODYNE SRP SERIES MONITORS

Five for Your Ears

Sonodyne's SRP Series of bi-amplified, die-cast aluminum studio reference monitors come in five models, ranging from the 350, 400, 500, and 600, to the large SRP 800. Back-panel controls adapt the SRP Series loudspeakers to a wide range of room conditions, and tapped inserts at the bottom and rear allow for a variety of mounting options. Clean self-power ranging from 20+20W in the SRP 350 to 175+100W in the SRP 800 is perfectly matched to the acoustics of the drivers and enclosures. The range is available in black, charcoal gray and white.



MERCURY D SERIES G810 RACK

Raising the 500 Bar

The Mercury D Series G810 500 series rack (\$TBA) features 10 open slots, thick aluminum rack ears, a durable steel chassis plus a power spec much higher than the maximum 500 standard. The Mercury Power Regulation Circuit allows each channel to be isolated from the channel next to it or any other channel in the rack. Other features include a Chain switch to enable signal flow between adjacent modules, a Link switch for ganging the operation of modules that support a link feature, and a Soft Start Circuit allowing power to be gradually applied to modules on startup. The back panel provides Gold Pin XLRs (for Channels 1-10) and DB25 (DSUB) connectors for Channels 1-8. The Mercury G810 is rack-mountable but can also be used on a desktop.

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D.A.S. EVENT SERIES LINE ARRAY

Two Tops and a Boomer

Targeted for use in permanent installations and mobile systems, the Event Series line array from D.A.S. offers two line arrays and a companion bass system (\$TBA). The Event 208A and the Event 210A line arrays are three-way powered in double 8-inch and double 10-inch configurations, respectively. The units feature a single M-75 compression driver and injected aluminum high-frequency waveguide. Both Event line arrays are powered by a 3-channel Class D amplifier providing 360 W peak per channel. The rear panel features Neutrik XLR and powerCON connectors, status LED and D.A.S.'s Easy-DSPTM interface, which simplifies preset selection for the number of units and throw depth. The twin 18-inch companion subwoofer is a front-loaded system powered by an efficient 3,600 W peak Class D amplifier achieving a rated maximum peak SPL of 140 dB. The amplifier has a Cardioid Preset mode switch that offers specific signal treatment for easy setup of pairs of systems in cardioid subwoofer applications.

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Legendary parametric EQ from the SSL E Series

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The sound of Neve's flagship 88RS console in the palm of your hand



DAKING MIC PRE 500

Class A discrete, +24 headroom, variable high pass filter to 200Hz

STANDARD AUDIO STRETCH

Multi-band dynamics processing to liven up and enhance any mix

GREAT RIVER PWM-501

Versatility reigns with this new forward-thinking compressor

Tech // reviews

SOLID STATE LOGIC SIGMA

16-Channel SuperAnalogue RackMixer for Your DAW

Solid State Logic's Sigma Summing Engine is a remote-controllable 16-channel analog summing engine with a monitor section. It uses the same SuperAnalogue technology as SSL's Duality and AWS consoles, accepting 16 stereo channels of line-level audio from any DAW I/O unit(s) over Tascam standard AES59 25-pin D-sub connectors—four stereo pairs per DB25 cable. No other hardware is required for basic summing of 16 stereo pairs to a stereo mix bus plus monitoring.

FRONT AND BACK

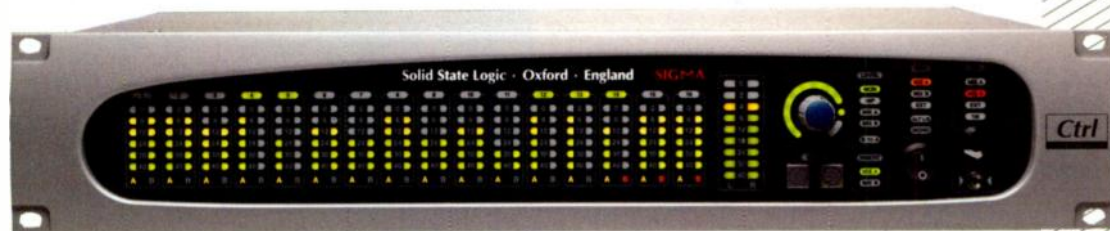
The thick, sculpted aluminum front panel of Sigma frames a large number of individual color changing OLEDs mounted behind it showing input level metering for all 16 channels, plus a larger, high-resolution stereo master meter. Each of the 16 channels can be configured as a stereo or mono source—but you cannot split a single stereo channel into two mono channels.

The green channel number LEDs light up to show channel(s) that are programmed to use the left side of a stereo source as mono. There are indicators for the individual channel assignments to either Mix Bus A (orange) or Mix Bus B (red). Any channel can connect to both Mix A and Mix B at the same time or none at all—for use of each channel's direct output only.

Other features include two user-programmable buttons, a 1/8-inch mini-jack for connecting a mobile player as a monitor source, 1/4-inch stereo headphone jack, and power on/off switch. A blue knob rotary encoder selects (via its push function) front panel local control for: control room monitor, headphone, and both Mix Bus A and B master fader levels.

Sigma's back panel has 16 stereo/mono inputs and 16 direct outputs using eight D-sub. Two more DB25s provide connections for Mix A and B bus insert send/returns, a stereo headphone output with volume control, and two external stereo source inputs.

Sigma's monitoring section has three pairs of analog line level L/R, XLR outputs for Mix A, Main and Alternate monitor. The rear panel offers a 12-volt DC inlet jack for the line lump power supply. There is a programmable footswitch jack, an RJ45 Ethernet socket, and USB socket/switch for SSL diagnostic use.



Sigma can be run wirelessly via tablet or Smartphone, or wire controlled through your computer's Ethernet port.

SIGMA SETUP

Although you can use any analog I/O with Sigma, I opted to run Pro Tools 11 using Solid State Logic's MAD1 system. I installed the MADIXtreme 64 PCIe interface card and its driver (version 1.3) into my MacTel 8-core running OS 10.8.5 and Pro Tools 11 HD and was good to go for up to 64 channels of simultaneous input/output audio at 44.1 or 48 kHz, or 32 channels for 88.2 /96 kHz, all running Core Audio. (Host based—no Avid card or interfaces.)

I used a 3-meter twin glass multimode 50 /125µ fiber optic cable (about \$60) to connect to and from the MADIXtreme card to an SSL XLogic Alpha-Link MX 4-16 DAW I/O (\$1,699 bundled with the MADIXtreme PCIe card), which was then fiber-looped to a second MX 4-16 (\$1,449). The two MX 4-16s and MADIXtreme 64 card provide a total of eight analog inputs and 32 analog outputs at a total cost of \$3,148.

I then installed ipMIDI software (version 1.6)—a utility that shows up in Audio MIDI setup app in Mac OS X. Next I connected a NetGear GS105 5-port Gigabit switch between my Wi-Fi router, Sigma, my SSL X-Patch and my computer.

You can also directly connect to your computer's Ethernet port (fixed IP), but you'd lose wireless operation and any connectivity to the Internet. After powering up and launching Safari, Sigma's browser GUI was available and ready for use.

For wireless control using my iPhone and iPad, I connected via the Mac's Bonjour feature. The Sigma User Guide walks you through many networking configurations using either a fixed IP address or a DHCP, and controlling Sigma on Wi-Fi-connected devices.

BROWSING SIGMA

Sigma's browser GUI has three main pages. The default Master page has buttons

TRY THIS

Sigma's Mix Bus B can be injected into Mix A by engaging the "B To A" button in the web browser. I used this function to get some additional mix bus coloration by turning up Mix B's master fader above 0 dB (it goes up to +10 dB) and turning down Mix A's master fader. This is an intense sound that does not sacrifice brightness and clarity for the sake of loudness.

PRODUCT SUMMARY

COMPANY: Solid State Logic.

PRODUCT: Sigma Summing Engine

WEB: www.solidstatellogic.com

PRICE: \$4,500

PROS: Awesome analog summed sound.

CONS: Serious configuration required.

and drop-down menus for meter source switching, master insert routing—including an insert sum function to connect a second Sigma—headphone source and level, footswitch setup and designating the function(s) of the two front-panel pushbuttons. There is a MIDI Learn feature for generic MIDI controller programming for specific changes such as Mix Inserts in/out.

The Channels page mimics Sigma's front panel but with fader levels indicated in dB and all channel names. It has buttons for global setup and solo modes, plus 16 Mono buttons for changing any channel to mono. A pan pot will pop up for panning the new mono channel across the stereo bus(s). There are solo and cut buttons for each channel.

The Settings page has the DAW/Protocol and ipMIDI Port/Channel, IP address shown (fixed or DHCP), Meter scaling, solo modes (SIP/AFL, Latch/Alt) and software version and update button.

Configuration/setup created in the browser can be named, modified and saved as .xml files, with the last setup reloaded at start-up. When you save in the browser window, it always defaults to: "SigmaSettings.xml"—it does not track the given name of your last save—you'll have to retype it every time and replace the old one. I saved and named (by song or artist) setups for both mixing and tracking sessions.

After connecting 32 stereo analog sources from the Alpha-Link interfaces, I set the global operating levels for +24 dBu via the browser. Mix A and Mix B buses have separate stereo inserts and (normally) sum together—with Mix B able to be routed pre/post Mix A. You could have all your vocal tracks on Mix A and all your instruments on Mix B for different stereo insert processing on each, and then combine them—relative to their individual master fader settings.

WORKFLOW EXPLAINED

Mixing and recording using Sigma requires organization and forethought to maximize its potential and the good use of its console center section monitoring. However, with so many routing and monitoring scenarios possible via this unit's extensive I/O, I would recommend using a well-labeled, external patch bay.

Besides using it as a static summing amp and sending mix-leveled stems to Sigma for analog sum-

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An advertisement for Acoustics First.com. The top part features the company name 'Acoustics First.com' in a large, stylized font with a red arrow pointing to it. Below the name is the tagline 'Materials to Control Sound & Eliminate Noise.™'. The main image shows several different acoustic diffusers and absorbers, labeled 'Model Q', 'Model W', 'Model F', 'Model C', and 'Model D'. The 'Quadr-Pyramid' logo is also visible. At the bottom, there is a 'Toll-Free Number: 888-765-2900' and a QR code.

ming, there are two methods for sending fader-level automation data: HUI/MCU and MIDI Absolute (mutes are not supported).

HUI/MCU protocol in Pro Tools designates the first 16 faders in your mix must be audio tracks and uses ipMIDI ports 1 and 2 set in Pro Tools' Peripherals/MIDI Controllers page. Sigma's MIDI Absolute mode designates ipMIDI Port 9 and channels 1 through 16 to control the Sigma. MIDI controller faders in Pro Tools use up no voices and can be located anywhere in the mixer and freely assigned (individually) to any Sigma channel.

I preferred MIDI Absolute, and I got into the habit of naming the 16 MIDI faders by what they control and locating them near the track/buses they control. In addition, I copied the stem bus names used in PT back in Sigma's browser window. HUI/MCU mode automatically sends the names from the first 16 faders to Sigma's screen but MIDI Absolute does not.

I like to record and playlist all mix passes into a new stereo audio track in Pro Tools, so I routed Sigma's Main Mix A output to the first two inputs of the first Alpha-Link MX 4-16. The mix's return used Sigma's last stereo output channel 16, and I deselected both Mix A and Mix B buttons—to prevent a feedback loop. Inputs 3-4 of the first MX 4-16 I reserve for last-minute overdubs during the mix.

For monitoring, I connected channel 16's direct outputs to the L/R stereo External Input of Sigma via the rear panel DB25s. I selected External for the monitor source and controlled main monitor, alt monitor and headphone volumes with the rotary controller.

Sigma's Mon L and Mon R XLR outputs connected directly to my pow-

ered monitors, and the Alt L and R go to the amp that powers my Yamaha NS-10M speakers. Back in Pro Tools, I solo isolated the mix track and locked it to Input monitoring while developing a mix.

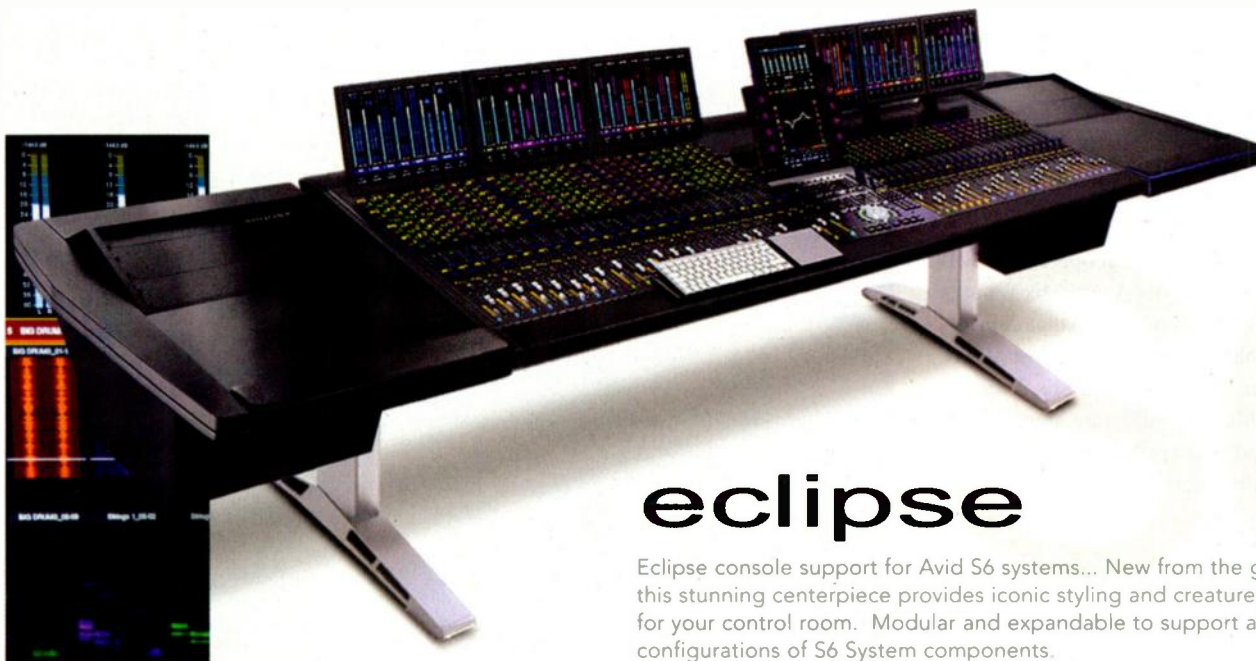
IS SIGMA FOR YOU?

My Sigma review rig provided a tremendous amount of detail, stereo width and space without audible noise. Patching external compressors and/or equalizers between the Alpha-Link's outputs and Sigma worked well. Because I used both Mix A and B buses all the time, I usually put the backing track on Mix A and the vocal production on Mix B. I also reserved channel 15 for routing all stereo effect returns generated in Pro Tools. In Sum mode, Mix A and B inserts sum the insert return with the original main stereo mix bus signal and work excellently for separate processing of the track and vocals.

I performed my automation moves either on my Pro Tools screen with a mouse, or by using my PreSonus FaderPort motor fader. I liked the monitoring facilities built into Sigma, especially when going wireless from my iPad or iPhone. That way I can walk around the room and change volume on the monitors as I like.

Sigma is a step up from typical in-the-box mixing. I'm getting everything I love about mixing music on large and expensive analog consoles without any down side. I have the dynamic sound of analog summing—combined with modern automation and ease of mixing in the box. What could be better? ■

Barry Rudolph is an LA-based recording engineer.



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World Radio History

FABFILTER PRO-MB

Groundbreaking and Intuitive Multiband Dynamics Plug-In

To provide the most flexibility and power, a multiband processor should be able to increase or decrease gain not just in select frequency bands but also at either end of a track's dynamic range, top or bottom. Pro-MB provides upward and downward compression and expansion in up to six independent frequency bands. Each band can operate in stereo or M/S mode and use variable stereo linking and sidechain filtering. The plug-in's extremely comprehensive and powerful feature set is augmented by highly intuitive operation that breaks the mold.

The cross-platform Pro-MB is available in 32- and 64-bit versions in VST, VST3, AU, AAX Native and AudioSuite formats, and in 32-bit RTAS format. I reviewed V1.00 of the AU plug-in in Digital Performer 8.05, using an 8-core Mac Pro running OS X 10.8.5.

HOW IT'S DIFFERENT

To use a traditional multiband dynamics plug-in, you begin by specifying its crossover frequencies. The drawback to such a paradigm is that you have to guess at the resulting center frequencies (where the processing will exhibit its greatest depth for each band). It's arguably a round-about way of working.

Pro-MB takes a more intuitive and direct approach: You click in the GUI's frequency plot to create a new band at the specific center frequency you wish—just like you would when creating a new node in an equalizer plug-in—and then drag graphic crossover controls to adjust the filter's bandwidth. You can place up to six bands anywhere in the spectrum. The spectrum between two non-contiguous filters automatically remains unaffected—you don't need to set up crossovers just to bypass processing there. If you prefer to use the traditional crossover-based approach to multiband processing, you can extend the width of Pro-MB's individual bands until they snap to crossovers for adjacent bands.

In addition to traditional and linear-phase modes of operation familiar to equalization wonks, you can select an innovative dynamic-phase mode that completely eliminates phase artifacts within a band when it's not processing (such as when signal level is below its compressor's threshold); dynamic-phase mode eliminates latency and potential pre-ringing artifacts



Fig. 1: Pro-MB offers six independent bands for implementing upward and downward compression and expansion. Each band has its own sidechain with tunable bandpass filter (shown here as a red horizontal line above the GUI's control knobs).

inherent in linear-phase algorithms. The dynamic- and linear-phase modes allow you to continuously vary each filter's slopes (independently at high and low crossovers!) to be between 6 and 48 dB per octave. This independent slope adjustment lets you shape and focus the influence of the dynamics processing within each band more precisely than in any other multiband processor I'm aware of.

NUTS AND BOLTS

Selecting a band displays its control set in the GUI; the controls for the other bands remain invisible until they're selected. (You can select multiple bands at once and adjust their parameters using a common control set.) Conventional crossover filters split the signal into bands. Each band provides compression and expansion modes and offers continuously variable controls for setting

TRY THIS

Use upward compression to raise the level of a mix's weak guitar intro. Click in Pro-MB's frequency display to create a filter. Drag the filter's upper crossover fully right and the lower crossover all the way to the left so that the band covers the entire audio spectrum. Set the range control to roughly +3 dB, and crank the ratio control. Set the threshold higher than the signal level during the intro, but lower than the level when the full band enters the mix. The intro will be louder!

threshold, ratio, range (maximum gain change), attack and release times, knee, look-ahead time, output level and pan. The threshold control has a concentric ring around it that shows the band's signal level. The pan control forms a concentric ring around the output level control; it lets you assign the band's output to the mid channel (when set fully counter-clockwise), side channel (fully clockwise) or both channels to varying degrees (intermediate positions). The attack and release controls are adjusted from 0 percent to 100 percent instead of in milliseconds because their times are highly dependent on program content and the frequency band they're assigned to. You can bypass, solo, mute or delete each band independently.

The graphic display's amplitude range can be switched to ± 3 , 6, 12 or 30 dB. A global wet/dry-mix control allows parallel processing. A defeatable real-time frequency analyzer can be sourced either pre- or post-processing (or show both spectra at once), and you can freeze its display to show peak values over time.

Also included are I/O level controls, L/R output meters (with level readouts and clipping indicators), A/B workspaces, Undo and Redo buttons, preset selectors (for each band and the plug-in as a whole), defeatable balloon help, a MIDI Learn facility and a switch for enabling oversampling (up to 4x). The MIDI Learn facility lets you assign any MIDI controller to any of Pro-MB's parameters.

Clicking on the Expert tab next to a band's controls opens a side



Fig. 2: Pro-MB de-booms a mono acoustic guitar track.

panel containing additional sidechain and stereo-linking facilities. The sidechain can be triggered either internally or externally (by your DAW). Clicking on the Band button selects the band's input signal as its trigger source, whereas clicking on Free displays a frequency slider with upper and lower handles you can drag to create a bandpass filter for the band's



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I found when using the IsoAcoustics stands under my NS10s that I had an easier time mixing due to a more stable stereo image and clearer bass frequencies.

Elliot Scheiner, Grammy Award Winning Recording & Mixing Engineer

Pretty remarkable, ingenious, clever device.... and they work.

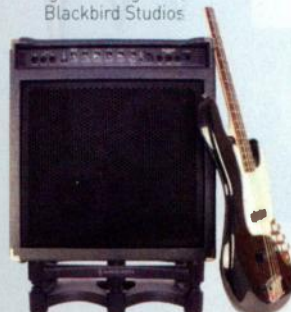
Frank Filipetti, Grammy Award Winning Producer

I noticed immediately a clarity in the stereo image and the frequency response that had been missing in my NS10's... The IsoAcoustics generally made them more enjoyable to listen to, no small feat as I am sure you know...

Vance Powell, Grammy Award Winning Chief Engineer, Blackbird Studios



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PRODUCT SUMMARY

COMPANY: FabFilter

PRODUCT: Pro-MB

WEBSITE: fabfilter.com

PRICE: \$229

PROS: Outstanding sound quality. Powerful and comprehensive feature set. Intuitive operation. No apparent bugs.

CONS: Cluttered, slightly obscure GUI.

sidechain. The Audition button lets you hear the conditioned sidechain signal for the band. A stereo-link slider adjusts the degree of stereo linking between left and right channels from 0 percent to 100 percent; at settings above 100 percent it has no effect on stereo linking but progressively (and exclusively at its maximum setting) processes the mid or side channel input for the currently selected band, depending on the channel chosen in a drop-down menu.

MIXING AND MASTERING

To de-boom an acoustic guitar track using

downward compression, I chose Compress mode and lowered the range control to a negative value (see Fig. 2). I centered the filter at 210 Hz and narrowed the bandwidth to one octave. I fashioned a very high (48dB/octave) slope for the upper crossover to all but eliminate compression above 400 Hz, and I set a mild (14dB/octave) slope for the lower crossover to extend the compressor's action down to 20 Hz (well below the filter's ostensible lower limit). I lowered the band's output level 1 dB to attenuate its effect even when signal level was below threshold. I clicked on the Free button so I could filter the sidechain. Clicking on the Audition button let me hear the sidechain as I adjusted its response to 147-229 Hz so that only the boomiest notes triggered compression. The end result sounded outstanding: smooth, transparent, focused and free of compression artifacts such as pumping and loss of depth.

On a mastering session, I employed upward compression to bolster a weak guitar intro for a full mix (see Try This). The same song had a dull-sounding kick drum that would benefit from having more pronounced beater slaps. I selected Expand mode and a positive range value to increase peaks in a band centered at 4 kHz. To prevent stereo guitars and keys from being expanded, I assigned the band to the mix's mid channel. Weeding out vocals was easy: I filtered the band's sidechain to pass only frequencies below 80 Hz. I could also prevent the bass guitar from triggering the effect by setting the band's threshold above its level in the mix (but below that of the kick). I plunged the attack and release controls to their lowest values to make the 4kHz filter expand immediately on kick-drum hits and then quickly reverse back to unity gain. The effect was flawless, affecting only the kick drum.

Pro-MB appeared to be free of bugs. My only complaint was with the GUI layout: The fixed panel for band controls often obscured grid lines demarcating frequencies near the bottom of the GUI, making it difficult to assess spectra in the display above. I would prefer having the control panel reside below the frequency display for a larger but unblocked GUI.

Still, Pro-MB is extremely powerful and very intuitive in operation, and its sweet filters sound outstanding. Highly recommended! ■

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



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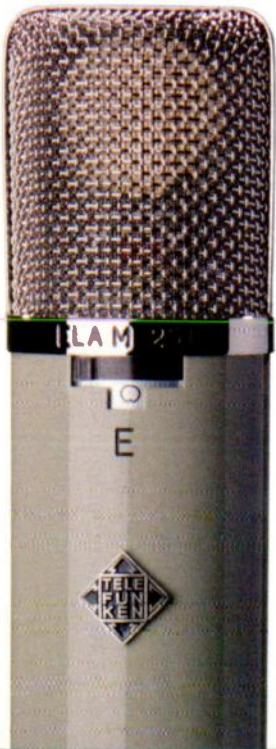
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ADAM F7 MONITORS

Great-Sounding, Small Footprint, Two-Way Speakers

This German company started out in 1999 with strictly high-end offerings, which were endorsed by many high-profile audio engineers. That “high dollar, rarified air” club has been brought down into the realms of affordability, with several offerings in the home studio and project arena, all of which keep the philosophy of the air motion transformer tweeter design intact. This high-frequency transducer has characteristics all its own, which some engineers prefer.

The ADAM F7 is the latest offering that breaks price barriers and delivers performance to the tabletop production environment that has been, in recent years, unobtainable in a speaker with this tiny of a footprint. Built for near-field environments, the F7 delivers reliable, linear response for home, project studios and editorial stations, at an affordable price point.

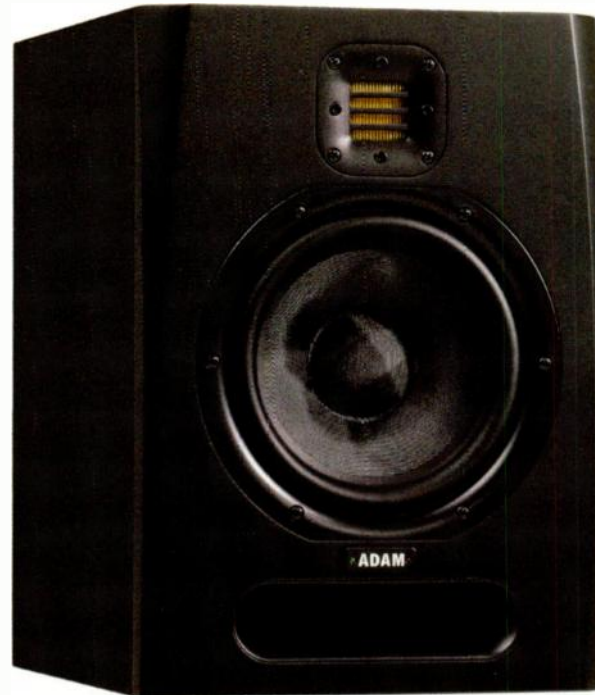
POCKET ROCKET

The F7 is the larger of the two F Series speakers from ADAM, sporting a 7-inch combination Fibreglas/paper woofer, along with the characteristic air motion transformer tweeter (the same tweeter used in the more expensive A Series), all enclosed in a small-footprint 12.5H x 9W x 10.5D inches enclosure; perfect for tight spaces, desktop production and even remote recording. The front port is elongated, utilizing a molded plastic insert, with a “rounded edge” design to not only increase low-frequency response but also to reduce port turbulence and edge diffraction. This forward, front port makes it easy to mount the speakers in tight situations, such as broadcast trucks or near a wall, achieving a good, linear, low-end response without having to deal with the problems that can be encountered with a rear-port design in these situations. Frequency response is published as 44 Hz to 50 kHz; yes, the air motion transformer tweeter has an extended high-end reproduction.

Conventional Class-A/B amplifiers provide amplification, with 60W RMS going to the woofer and 40W RMS sent to the tweeter. This more conventional configuration adds a bit of weight (compared to the lighter Class-D amps), with each box weighing in at 19.8 pounds.

TAILORED RESPONSE

On the back of the box, signals arrive at a balanced XLR or unbalanced RCA inputs. An input sensitivity control ranges from $-\infty$ to +6 dB, allowing the amps to accept many different sources



The affordable F7s use the same air motion transformer tweeter found in ADAM's more expensive models

and levels. A high-shelf EQ, which starts at 5 kHz, has ± 6 dB of cut/boost to tailor the response of the high end to your room. The low shelf activates at 300 Hz, with the same ± 6 dB characteristic. I found this to be useful in my room, attenuating the low end by approximately 1.5 dB to create a more linear reproduction, due to the front bass port. An 80Hz highpass filter rounds out the controls on the back panel, which can be inserted if you are using a sub-woofer. (ADAM makes a matching “SubF,” which was not available at the time of this writing.) The crossover frequency is 2.6

TRY THIS

Most home and project studio workstations (furniture) have a bridge, which is a convenient place to mount your speakers but not the best place to achieve accurate reproduction. Get some speaker stands and get those speakers out, away from the big reflective surfaces. Best case would be to put your speakers behind the desk, get them up in the air, and point them toward a point at the back of your head. This will give you a direct radiation of the sound, with the temporal fusion associated with your first big early reflection coming off of your desk virtually eliminated. With less bounce, there will be less phase-related issues.

kHz. No information is given about the design of the crossover, but the coupling characteristics of the two transducers sounds very smooth, with no apparent separation.

A speaker of this size begs the big questions: "Does it translate to other speaker systems? And, "How is the detail?" In other words, "Can I mix on these and be comfortable knowing that what I'm hearing is accurate?" I think we've all mixed on speakers that are "not quite accurate," then endured the process of remixing or going back and "re-learning" our speakers. I can certainly say that this speaker has proven well for me; it matches up very well with my reference speakers, which cost four times as much, and having the opportunity to test them against another manufacturer's ribbon tweeter design, I can say that they are close in response to speakers retailing for almost twice the price. What you lose is a minute amount of midrange response. This could translate into mixing the midrange hotter, or, a bit more forward to compensate, compared to your go-to mains. Again, at this price point (approximately \$400/ speaker), you are not going to get the clinical accuracy of an \$8,000 (or \$80,000!) speaker system. And a Ford is not going to respond like a Bugatti, but, you can learn this speaker and mix on it!

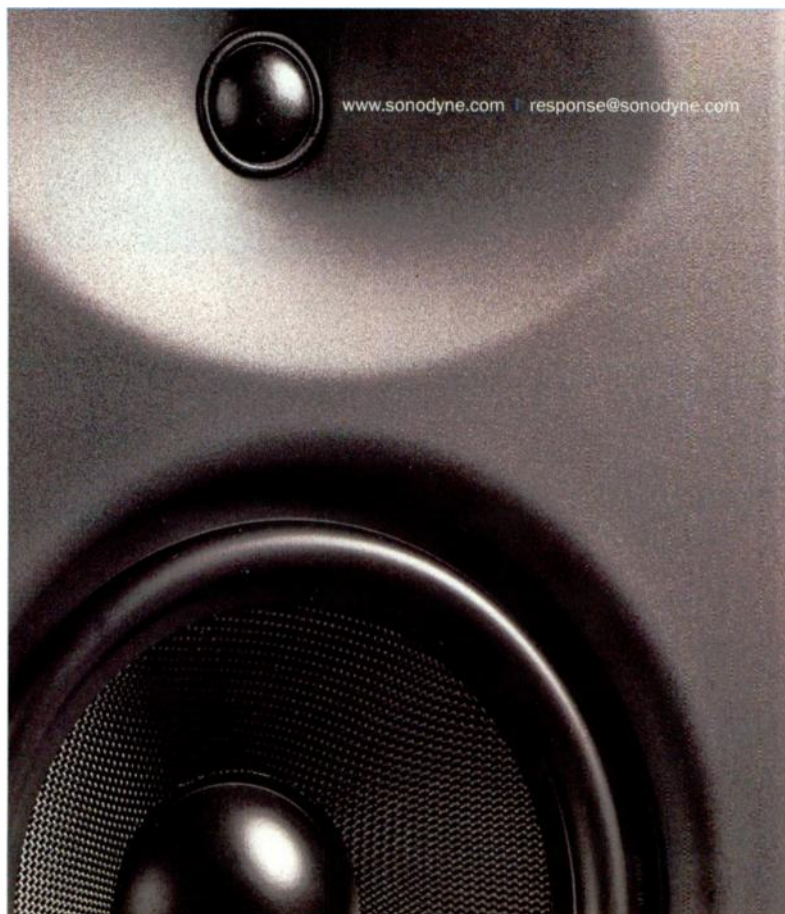
PRODUCT SUMMARY

COMPANY: ADAM Audio
PRODUCT: F7 Monitors
WEBSITE: www.adam-audio.de
PRICE: \$449 each
PROS: Sound great (read: accurate)! Small footprint, smooth response between tweeter and woofer, plenty of power, extremely affordable, accurate response, user adjustments, front-ported for punchy low-end response.
CONS: No VESA mounts, no networking, no variable bell EQ for tabletop adjustments, no digital inputs, will need a sub-woofer for the lower octave.

I'M FEELING PUNCHY

The low-end punch was exceptionally good—I elevated the levels using my reference audio (well-known mixes from many different genres, as well as my own original Pro Tools files), and found the imaging and soundstage to be well placed. The phantom center was solid, and the sweet spot was wider than I had anticipated. I was impressed with the air motion transformer tweeter response. The "ringing" that is sometimes associated with other designs was virtually non-existent. I found the air motion transformer tweeter to be smoother than other systems, even in the ADAM line itself. At low SPL levels, listening to detail and blend, the mix moved down accordingly, and accurately. With some speakers, there is a huge difference in accuracy of the mix levels at different SPL levels, say 105 vs. 65. The F7s held up very well from the "dance level" to the background levels.

While evaluating orchestral music, which can be extremely telling of speaker response and linearity, I found the soundstage to be accurate, and the blend of instruments to have very little phase-smear; the piccolos on the Bolshoi Theatre Orchestra's rendition of "Beethoven's 9th Symphony" were without coloration or resonance, a nod to the accurate reproduction characteristics of the air motion transformer tweeter. The



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“Flower Duet” from Lakmé brought the vocalists front and center, with distinct separation between the two female performers. The reproduction of Wagner’s “Prelude to Act III” of *Lohengrin* produced harmonic power to the string section that I’ve never quite witnessed in a speaker of this size and price point.

Electronica and EDM brought the synthesized bass and drums, along with the huge harmonic richness of solo synths, into the room with clarity and presence. Some of my favorite pop recordings (a tip of the hat to Mutt...) kept up with my reference speakers, with only the slightest dip in the vocal presence—a truly exceptional compliment to modern speaker design. Small speakers keep getting better and better.

Another good evaluation of a speaker is to launch your favorite orchestral Norwegian Death Metal and see how the guitars shift com-

pared to your reference speakers. I can tell you, there was only a slight receding of the guitar tracks on the jaunty renditions by Dimmu Borgir—these speakers will work well with many different genres of music. The separation was not lost among the instruments of this particular genre, which can have a tendency to get crowded.

CONCLUSIONS

I have listened to many ADAM speakers over the past 15 years. As with other companies, some of the boxes I like, some not so much. Every speaker system takes some dialing in with placement, along with adjustment of your room acoustics. What impressed me regarding the F7s was not only the performance vs. price point, but also the clarity of reproduction and the separation of instrumentation—important characteristics in any speaker design.



Welcome to a world of
infinite possibility



You will be able to track and mix, knowing that what you are hearing can translate to other speaker systems (presuming you have true, accurate room acoustics). The air motion transformer tweeter design is an effective and more efficient way of reproducing high frequencies, but as every engineer will tell you, each tweeter design sounds different. Be it a silk dome, titanium, beryllium or ribbon, you have to find the top-end transducer that you can work with, bringing home a mix that translates to many other speaker systems. I can attest that this is “the little speaker that could....” At this price point, the ADAM F7s are definitely worth your time to give a listen. ■

Bobby Frasier is an engineer, musician and writer who knows almost everything about The Beatles.

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Continued from p. 39



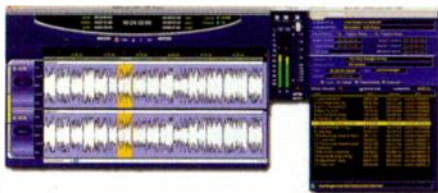
a range of packages: Lite, Professional, Radio Producer, Post Suite, Mastering Suite and Sound Suite, which contains all the SADiE manufactured plug-ins.



asic upload Website from within the application.

Steinberg Cubase 7.5 incorporates workflow enhancements, version updates to its instruments and new effects. TrackVersions lets users create, re-

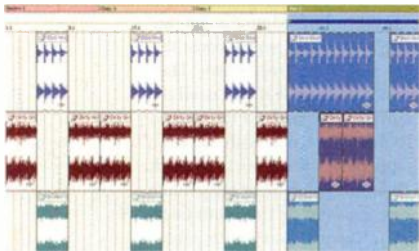
name and manage multiple versions of one or more audio, MIDI and instrument tracks. Also available for chord, tempo and signature tracks, TrackVersions allows users to create and switch between variations of track content, including all events and corresponding lanes. Workflow optimizations for audio editing include automatic detection of waveform transients in the background for skipping between transient peaks at all times. Meanwhile, Steinberg Nuendo 6 provides full integration with Nuage pro audio hardware, new mixing facilities featuring full-screen mode and scalability, Insert View for displaying activated insert slots, plug-in and channel search, and integrated Control Room.



Renoise 3 for Windows, Mac OS X and Linux lets you record, compose, edit, process and render production-quality audio using a tracker-based approach, where the music runs from top to bottom in an easily understood grid known as a pattern. Renoise has dozens of built-in audio processors, alongside support for all commonly used virtual instrument and effect plug-in formats. Scripting lets you control Renoise using a MIDI or OSC controller. Renoise comes with more than 26 native effects, including reverb, delay, filters, compressors, EQ, distortion, flanger, phaser and more.

Sonic Studio's soundBlade systems (LE, SE and HD) are based on the Sonic Studio Engine (SSE) digital audio processing technology and offer a workflow that is optimized for mastering and editing audio. At the high end soundBlade HD adds 8- or 16-track recording editing and delivery, 384kHz support, precision QuickTime interlock, support for multiple projects, flexible syncing capabilities, the Sonic Studio Mastering EQ AU plug-in, and Wholegrain Trio AU plug-in.

Sony Creative Software Acid Music Studio 10 debuted in 2014 and provides 24-bit/192kHz audio support, MIDI track freeze, event grouping, and drum grid editor key maps. Users can also publish to the SoundCloud original mu-



Traktion 5 for Mac, PC and Linux systems is available from Traktion Software Corporation (TSC), which acquired the Traktion platform from LOUD Technologies Inc. in January 2012. Traktion offers a single-screen approach that presents the user only with the options needed for the task that is currently underway. T5's new Edit Clip format eliminates the need to create submixes allowing users to embed multitrack material as if it were a single audio clip. T5 also introduces a System Resource Manager and Freeze Point technology, giving the user precise control over which session elements should be automatically pre-rendered. ■

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BETTERMAKER AND MAAG AUDIO

Two 500 Series EQs

Over the past two years, 500 Series preamps and processors have matured in design sophistication and sonics. Processors such as the Empirical Labs DocDerr, Elysia nvelope and xfilter have set the bar high, and others have answered the call. The two units reviewed here offer a unique look at EQ for the format and will ring the bell of those looking to step beyond plug-ins into hardware solutions. Both have their strengths and unique features that put them in the best-in-class category.

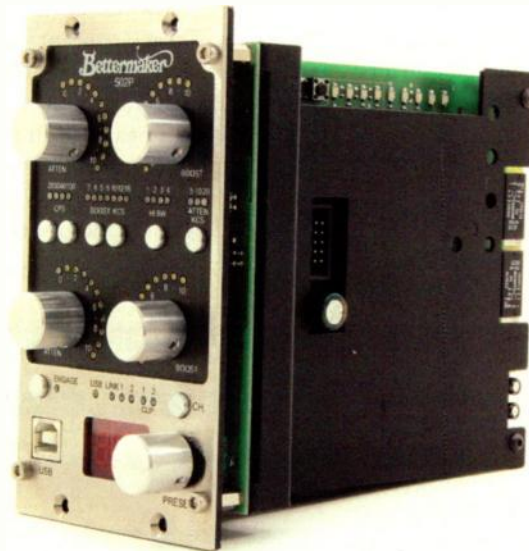
BETTERMAKER EQ502P

This beefy and shiny doublewide 500 Series unit created in Poland by Marek Walaszek and the Bettermaker team takes a design cue from Pultec's EQP-1A and Bettermaker's own rack-mount EQ232P. It steps up the 500 Series workflow by adding digital control. With a free plug-in, you can control the unit via USB and even write automation.

The front controls are simple. The unit is broken into HF and LF sections with separate Boost and Atten controls for each frequency (± 14 units based on Pultec measurements). You get four LF choices and seven HF, plus a basic four-level HF bandwidth control (1 narrow to 4 wide), and extra Atten at 5, 10 and 20 KCS. This last bit is great for boosting using the HF control but cutting the absolute top, or high-mid range or vice versa. This is versatility defined in a simple set of controls and is why the Pultec design from the 1950s is coveted and used to this day.

Unlike the Pultec, however, with the EQ502P, if you find something you love you can recall it with laser-like accuracy by storing a setting in the hardware or in the plug-in.

The rotary knob on the front of the unit allows you to store and recall 399 user presets. The interface is simple and easy to get your head around. To save a setting, push and hold the rotary control for two seconds. When you see No, rotate the knob to Yes and tap the button once to store it. Recall and zeroing the unit is just as easy—you just tap the knob once to recall a setting and twice to



PRODUCT SUMMARY

COMPANY: Bettermaker
PRODUCT: EQ502P
WEBSITE: www.bettermaker.eu
PRICE: \$1,595
PROS: Great sound, digital control of analog hardware.
CONS: Numbers on front of unit are tiny and tightly spaced.

TRY THIS

When mixing, patch the 502P across your drum overheads, zero the unit by double tapping the Preset knob, then put it in Linked mode. Set the Boost KCS to 5 and gently boost the High Frequency control to taste. Don't be afraid to crank it if you need it; this unit sounds great all the way to 10. Reprint the track with the EQ, then repurpose it for your bass track. Zero the unit, patch your bass into a channel, boost 60 or 100 Hz to taste, print it. Rinse, lather and repeat.

return the controls to zero. Made a mistake and zotzed your setting? Rotate the knob to 400 and recall it by tapping once. The hardware has one level of undo in case you accidentally clear the unit or recall another preset.

I installed the unit into slots 7 and 8 of my Radial Workhorse 500 Series rack. I patched a bass across the left channel but heard a loud pop each time I cycled through the controls and bypass. The Radial slots are rated at 150mA if power is distributed evenly across all eight slots, but I believe units in place before the Bettermaker were sucking the power that this beast needed. Once I moved the EQ502P to slots 1 and 2, all was well. Again I patched the Pro Tools output of my bass track into the left channel of the Bettermaker, then out into a Dangerous 2 Bus for monitoring. I chose 60 Hz and cranked up the LF Boost knob. Rich bottom end sprang forth, making the bass spread across the bottom of the track—just where it belonged.

Next I tried the EQ502P in stereo mode across drum overheads. I set the BW to 4 for a wide cue, then boosted 10k. Although the band is a bell, because the unit goes out to 40k you can create



PRODUCT SUMMARY

COMPANY: Maag Audio
PRODUCT: EQ2
WEBSITE: www.maagaudio.com
PRICE: \$599
PROS: Versatile frequency controls, Input gain control.
CONS: No cut, just boost.

TRY THIS

When you want guitars to shred through any mix, set the Air Band to 2.5k and crank up the gain until you love it. The EQ2 sounds great out to the fringes. In this application, the bottom band at 400 Hz gives you some excellent body to pair with the beautiful buzzsaw you're creating in the upper mids. Flip the cue/alternate frequency control back and forth and hear the subtle differences this makes.

a shelf by choosing a higher frequency that puts the right hand slope of the bell beyond Nyquist. I then kicked the HF down to 5 kHz, which worked great. Even at the extremes of 14 dB of boost, the EQ still sounded natural, not strident. This is a very musical box.

I tried the Bettermaker across a range of applications, but one of my favorites was on raging guitars. I recorded a Marshall 4x12 cabinet gassed by a JCM800 head using a Royer R-121 and Coles 4030L, two ribbon mics that are very complementary. For the mix, I bused them both across a channel of the EQ502P, set the BW to narrow and boosted 3 kHz. I also cut at 5 kHz, which gave me more control of the slope. The Bettermaker had all the gain I needed to channel AC/DC into the track.

You might think that the EQ502P is pricey at \$800 a channel, and you'd be right. But for what it can do both sonically and with digital controls you can automate in your DAW, it's worth it. Highly recommended.

MAAG AUDIO EQ2

The Maag EQ2 is a different take on EQ. It's a simple 2-band, single-space 500 Series unit with 11 pre-chosen frequencies in the LMF band and six shelving choices in the Air Band. I fell in love with Maag's approach way back when the now-discontinued NTI EQ3 Nightpro was released. Both units offer designer Cliff Maag's frequency choices and Air Band, which boosts out to 40k, adding a deliciously silky top end to cymbals, hand percussion and other items you want to sit in that area of a mix.

The EQ2 brings this and more to your 500 rack. I had two for the review, which gave me the luxury of stereo options. One of the best features is the input at-

tenuator, which is essential for DAW use and a feature I'd like to see on other 500 Series units. It's a lifesaver when you're boosting and need that extra chance to trim the output before it hits your converters on the way in.

Other features include an in/out button on each band and a handy wide/narrow cue switch that slightly alters the frequencies and bandwidth in the LMF band. For instance, you can boost at wide Q at 220 Hz or switch to narrow band at 150 Hz. Some other swappable choices in this fashion are between 400 Hz/250 Hz and 1.4 kHz/1 kHz, which are very musical.

I used the EQ2 on a number of applications but loved them on screaming guitars. I spent a week cutting a Marshall stack recently and used the Maag extensively to sculpt the tones. I found myself leaning toward boosting 2.5 kHz at the top and 400 Hz at the bottom. The Maag could dish it out at nearly full gain and sounded great to the edge of too much. I found myself wishing for one more choice at the Air Band at 1.4 kHz or so, but nonetheless, the choices available were great.

The EQ2 excelled on acoustic guitars, as well as drum overheads and individual drums like snare and toms. I liked how the wide/narrow switch gave me some extra choices and offered subtle differences in how much area I was covering at a chosen frequency—it's a very usable feature. The only thing I really pined for when using the EQ2 was the ability to cut as well as boost. The addition of this capability would really bring the EQ2 to the next level. That said, this is a great-sounding 500 Series EQ and one you can easily fall for. It is quality-built throughout, sounds like no other EQ and just works. What's not to love? ■

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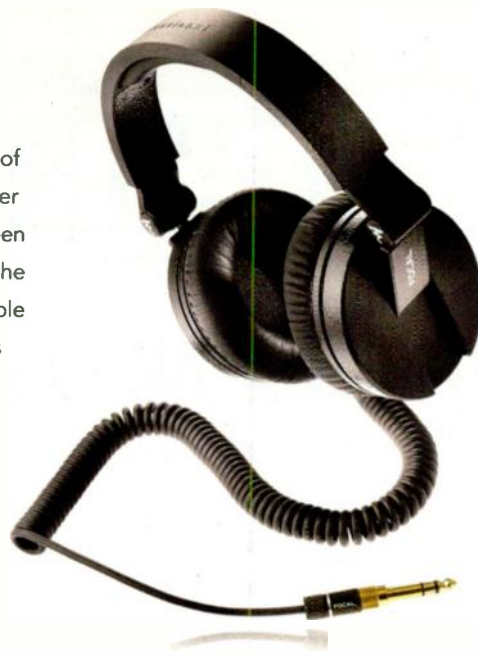
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OLD TRICKS, NEW DOGS



By Kevin Becka

All through high school and years beyond, I played in bands. I made my living that way. When I first moved to L.A. after a year of college, it was to study with great guitar players and interact with a better pool of musicians. Los Angeles was and is a hub for musicians, much like Austin is now—a place where live music is everywhere and live recordings capture the moment.

From the studio side, the concept of a band was elevated to art 50 years ago when musicians played live in studio and made records that drove generations. Then, as the song from Quincy Jones' album *Body Heat* tells us, "Everything Must Change." From the 1960s forward, you can trace how technology, endless tracks and digital production has made it less necessary for musicians to play off each other.

But like skinny ties, The Beatles, vinyl, Don Draper and hipsters, making real music is again en vogue. Right now in Nashville, recording musicians in the same room is hot and contagious. Jack White, Kings of Leon and engineers like Peter Coleman and Ken Scott have set up shop here. Ken's chops come from that era where recording live musicians in the same room was it.

Bands live eat, and sleep in vans and crowded hotel rooms together; why shouldn't they make music with the same level of camaraderie. Fans and bands are getting it. I recently watched Ken Scott work with Ryan Ordway and his band during a week of sessions at The Blackbird Academy. The cool thing to watch was first how gassed the musicians were to be there in the presence of the master. This was a band of young, accomplished players who are like many of the bands playing at SXSW this month: Hungry and talented believers in the future of music and what they can bring to it.

Ken was right there with them, collaboration was king and the age divide was gone. It was great to watch how he was mixing from the first downbeat. He spent more time standing in front of the drums while the drummer hit them and making suggestions than he did bringing up sounds at the console. In other words, get it right at the source first, then press the red button. The toms are too tubby, can we put some tape here? Can you tune the snare to make it less edgy? Have another snare? Perfect!

It's nothing anyone hadn't done before, but the sum of tweaks added up to a larger total. What Ken was doing was essential to the vibe and outcome of the recording. The musicians, students and seasoned pros in attendance were eating it up. If I had to sum up the attitude of the players, it was as if no one had cared this much

how their instruments sounded before. There was a hunger for excellence and a drive for what the interplay between audio pros and musicians in a great studio can bring.

It was all about taking it to the next level. For instance, there was a steel guitar part suggested by band member Ryan Hommel. Ken sat and listened intently, then said, "We need to make this sound less like a steel guitar. Do we have a Leslie?" We did. Once it was all hooked up, the part took on another meaning and was one of those hooks on a record that prompt you to say, "How cool is that?" Multiply these descriptions by ten and you get an idea of what went on.

I sat in on a session with engineer Ben Fowler just last night as he was setting up for an A-list of Nashville session players. While it wasn't a band, per se, these guys make music together more often than many established groups. Drummer Shannon Forrest, Mark Hill on bass, guitarists Brandon Hood and Jerry McPherson, along with artist Steve Olsen—all there to make a record. When I asked Ben about the setup, he said he wanted the musicians placed closely together so they could vibe. The only player who was isolated was Steve, who put down a scratch vocal on the first pass, and Brandon, who produced and played acoustic guitar. Everyone else was in the room and it was fantastic. We had all heard the demo as they played it for the band in the control room, then the pros went out to the studio and took it up 20 notches. Ben moved some mics and changed some preamps, Shannon tuned his drums to perfection, Mark provided more growl from his bass rig and Jerry did what they called his "Jerry thing." It was an amazing collaboration at a high speed and large scale, and it all worked.

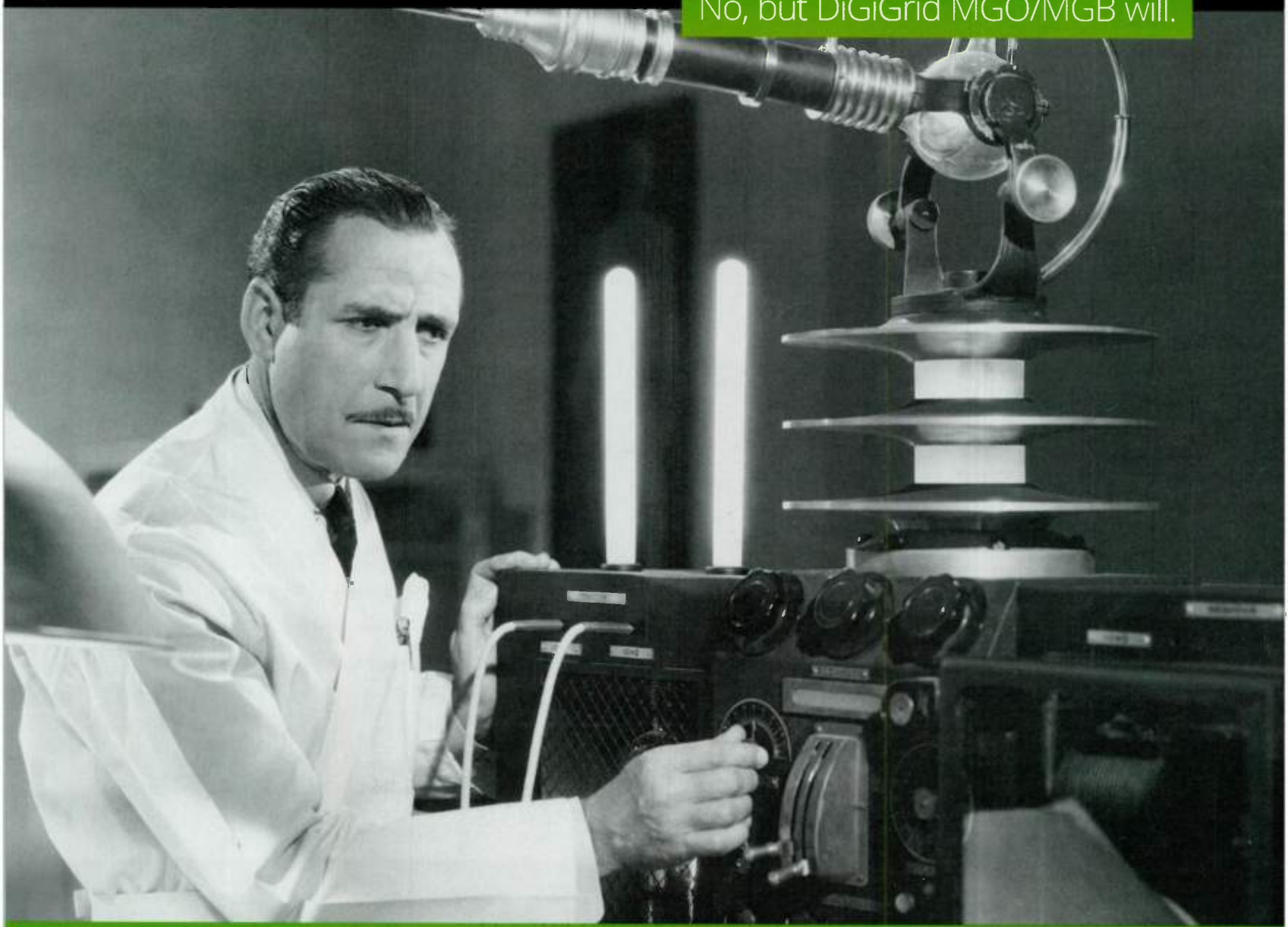
The point is that music is at its best when those with diverse backgrounds join forces. Even Daft Punk's *Random Access Memories*, a record you wouldn't consider "live," blended a range of talents. Engineer Mick Guzauski, producer/writer/musicians Nile Rodgers and Pherrell Williams, and of course those shy, French, robot dudes who spent two years putting it all together and made it happen. I love that record. It sings with art, spunk, and infectious grooves. In my book, if it makes you forget yourself and feel good, it's real music.

No matter how much music production changes, we always get back to the essential truth. Humans are at their best when they're making things together. Be it art, architecture, music or a connection with that person sitting next to you, the tools and techniques may change, but the foundations stay the same if we're lucky: Rain comes from the clouds. Sun lights up the sky. And hummingbirds do fly. ■



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