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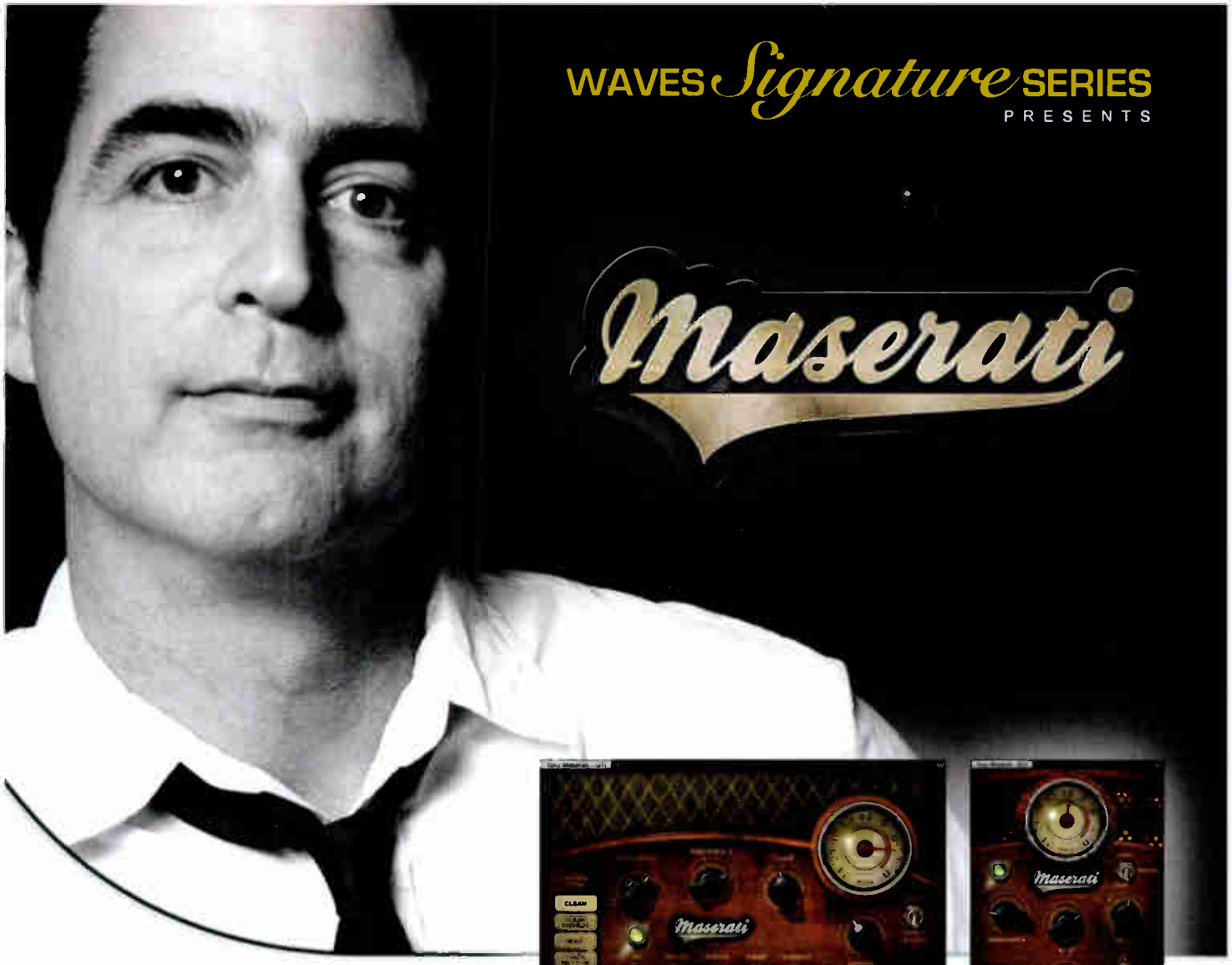

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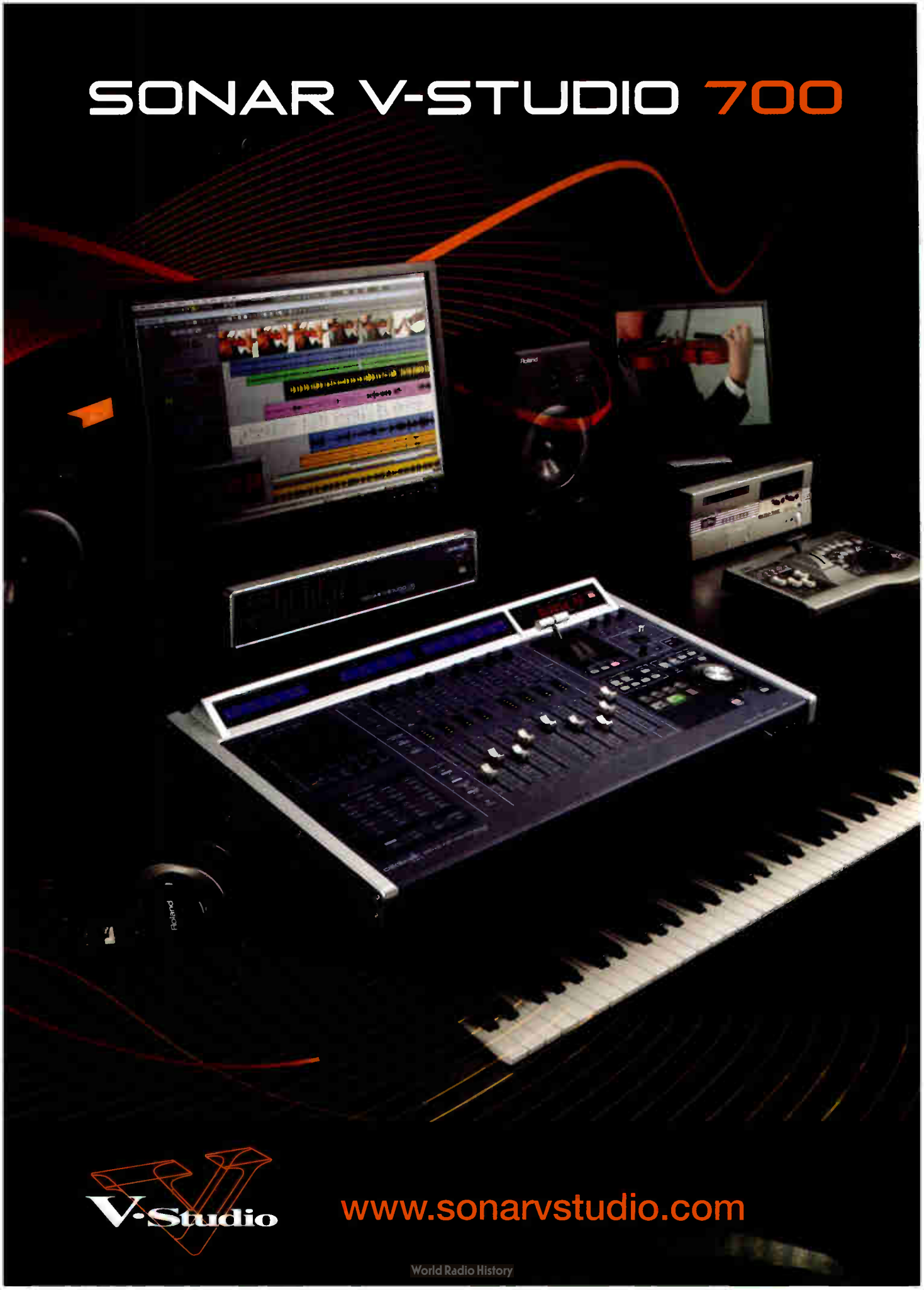

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CONTENTS

MIX MARCH 2009, VOLUME 33, NUMBER 3

30

28

ON THE COVER

Even with the recent addition of a Trident A Range console, EastWest Studio 3 (Hollywood) will look familiar to those who frequented Western or Cello. However, other spaces have been reinvented by avant-garde designer Philippe Starck. See story on page 16. **Photo:** Ed Freeman. **Inset:** Steve Jennings.

features

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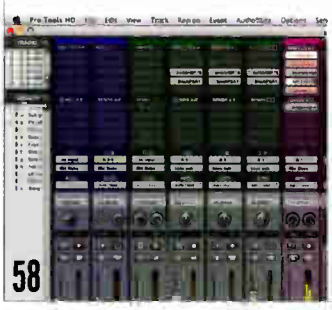
CONTENTS

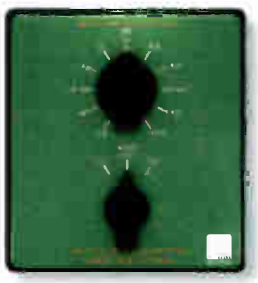
music

live

tech

66





65

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Music, Interrupted

Ten years ago, Rocket Network launched a revolutionary new "Internet recording studio" technology. The idea was big, the possibilities endless: track drums in South Africa, record vocals in Nashville, mix in LA...work anywhere, with anyone, anytime.

At a lavish party in downtown Los Angeles to showcase the technology, a crowd witnessed a live networked recording session, featuring a superstar combo led by Herbie Hancock and Marcus Miller, with members of The Roots at a studio across town, and other players online in London. As we watched, the musicians in the room started playing and laying down tracks, while text messages and files from the remote studios began flowing across large computer displays.

The track files synched smoothly, without a glitch. But as the musicians continually started and stopped, sending suggestions about hooks and bridges and passing takes back and forth, it was clear that they were growing increasingly frustrated with the stilted exchange. Hancock finally stopped, turned to the technology team and said, "Can we just turn this off and *play*?" Granted, this was during the early days of the Internet, but the technology was there. The problem lay in unrealistic expectations.

As Marshall McLuhan once wrote, "We become what we behold. We shape our tools and then our tools shape us." And that maxim holds true for computer-based production: Consider how easy it is to shift perspective from overall picture to microscopic detail and back again, how editing waveforms brings a visual perspective to audio manipulation. Tremendous opportunities abound in Web-based production, whether it's remote auditioning and approving mixes, broadening a client base or accessing far-flung talent—all functions that previously were impractical, expensive or even impossible. Rocket technology was eventually acquired by Avid and evolved into the Digidelivery system, widely used today for file transfer and approvals. And now, a decade after Web collaboration became reality, horsepower and the bandwidth have evolved to the point where it feels almost like we're in the same room... but not quite.

The Internet is great for communication—but remember, that type of communication is devoid of nuance, tone. And live music is all about those nuances, visual clues and the energy in the room.

There will just never be a substitute for that collaborative spirit of musicians playing together in a room, where magic really happens. That said, it pays to take advantage of all the ways that Internet collaboration can enhance your creativity, but remember to preserve every opportunity for that face-to-face connection: jam in the studio, play mixes for your friends and keep the magic in the process.

How has Internet technology changed the way you make music? Let us know by dropping us a line at mixeditorial@mixonline.com. Or write on our Facebook wall, or tweet...or just drop by for a chat.

Sarah Jones
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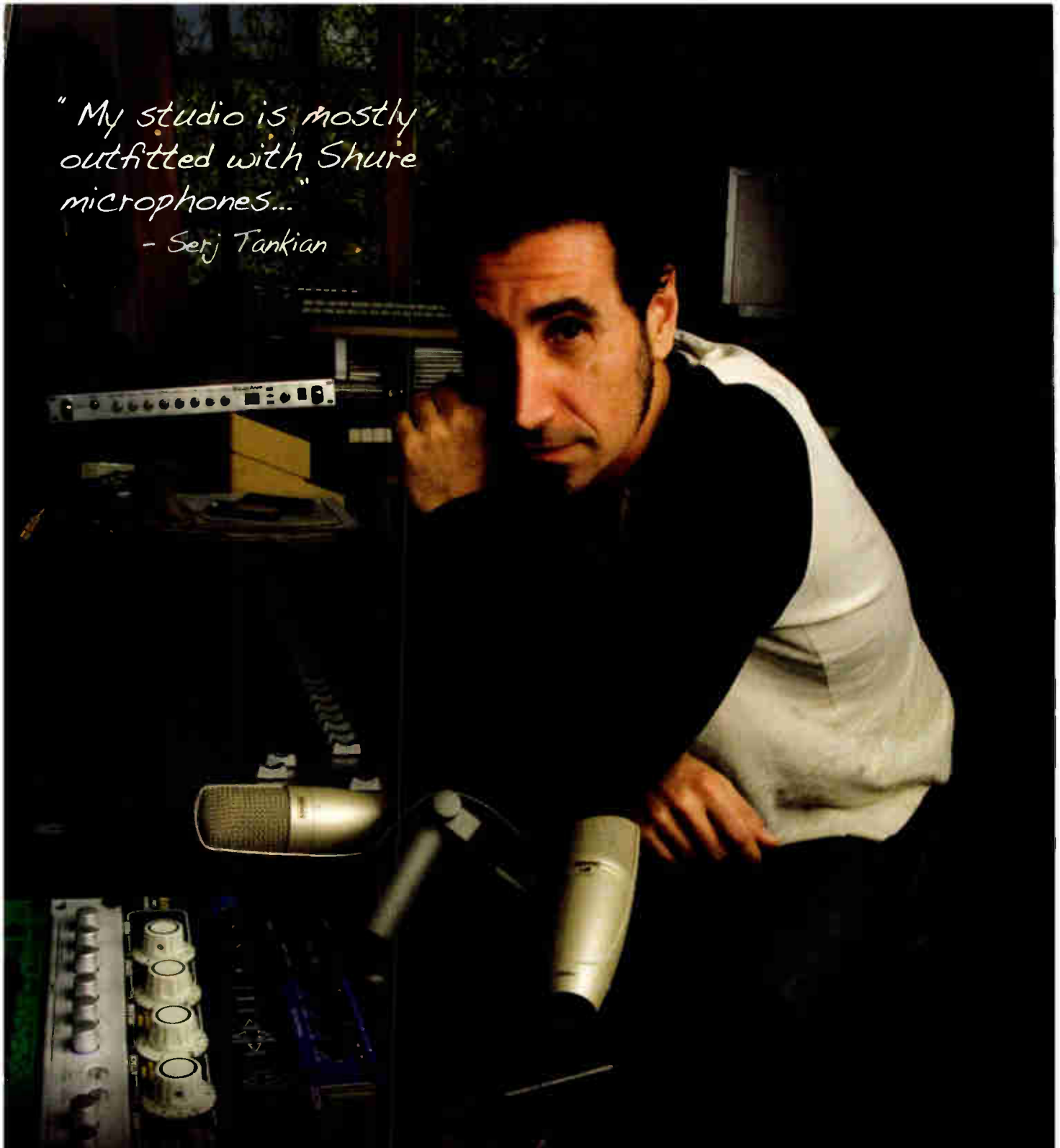

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ONCE UPON A TIME IN NEW YORK CITY

While I was in college in New York City in 1978, I worked in the morning as a lifeguard for a swim program at the "Y" on Lexington Avenue and 53rd Street. One day I happened to look back through the window behind me into the waiting area where I saw a man, an older Asian woman and a young boy. Not thinking anything of it, I looked back at the pool and then froze. My mind was racing as I thought, "No, it can't be him."

So when I had a break, I casually walked up and asked if he was here for swimming lessons. He answered in that legendary, unmistakable voice: "They're not for me, they're for my son." The little 3-year-old was Sean. Of course, as a New Yorker I had to be cool and couldn't show how excited I was. So I just said, "That's great. It's good to start them early. Good luck." He warmly thanked me and I went off to school on cloud nine after a brief yet unforgettable encounter.

Mathew Price, C.A.S.
Production sound mixer

Eds. note: If you've ever met one or more of The Beatles in person, e-mail your story to mixeditorial@mixonline.com.

Mix readers tell us about the craziest place they've ever recorded.

Out to Sea

I've made a lot of studio recordings and on-location recordings, but the oddest was recording for a film shoot on the Legendary Rhythm & Blues Cruise.

Robert Mugge is known as a filmmaker with lots of music film credentials, and he hired Big Mo Recording (College Park, Md.) to handle audio for this. I have worked a lot with Big Mo owner Greg Hartman, including seven years as a main-stage recording engineer at Bonnaroo, and Greg brought me in for this project.

My station was at stage-right of the 600-seat theater, down in the bow of the ship, and Greg took the outdoor stage up on the Lido deck near the pool. Rolling decks required some creative bracing, such as winding a spare length of audio snake around the casters to block them, along with lots of gaffer tape, bungees and whatever else could be improvised. Also, a ship has no true ground, and we discovered that our UPS backup wouldn't work. Greg faced the additional issue of salt spray, which played hell with the DTRS backup recorders. We each ran solid hard disk recorders (Tascam MX-2424s) and Tascam DA-78 recorders, all configured for 48 tracks. I had an analog mixer, and Greg ran a couple of Yamaha digital mixers.

After a full week of remarkable blues and soul music, we returned with audio intact and the results were later released on a limited-edition DVD titled *Deep Sea Blues: A Robert Mugge Film About the Legendary Rhythm & Blues Cruise.*

Mark Williams

Pep Rally Run Amok

We had been hired to record the Clemson Tiger Band pep rally, with the band performing in the middle of the football field in Death Valley Stadium in Clemson, S.C. To keep multiple mic lines down to reasonable lengths, we parked our van midfield along the sideline, but there were no AC power outlets at midfield. Not to worry: Our 10/3 power cable unreeled back to an outlet in the end-zone complex.

About five minutes before show time, the band's P.A. tech came aboard the truck asking if he could tap into our power because he didn't have an extension cord long enough to reach an outlet. Without thinking, we agreed. The band plugged its on-field P.A. into our truck, and up until show time all was routine.

Then as the opening announcement boomed into the stadium, our lights dimmed and the onboard voltmeter dipped to about 95 to 100, with voltage being modulated by the announcer's voice. In our frantic efforts to dump load, we briefly considered dumping the P.A., but that would have been a show-killer, so we dumped everything else on the truck but the mixer and recorders. At the time, we were transitioning to a [Sony] PCM-F1. The Ampex reel-to-reel machine died early in the brownout, but the PCM-F1 rig kept rolling.

Ed Snape
Encore Recording, LLC

A Mix reader tells us about his most memorable live gig:

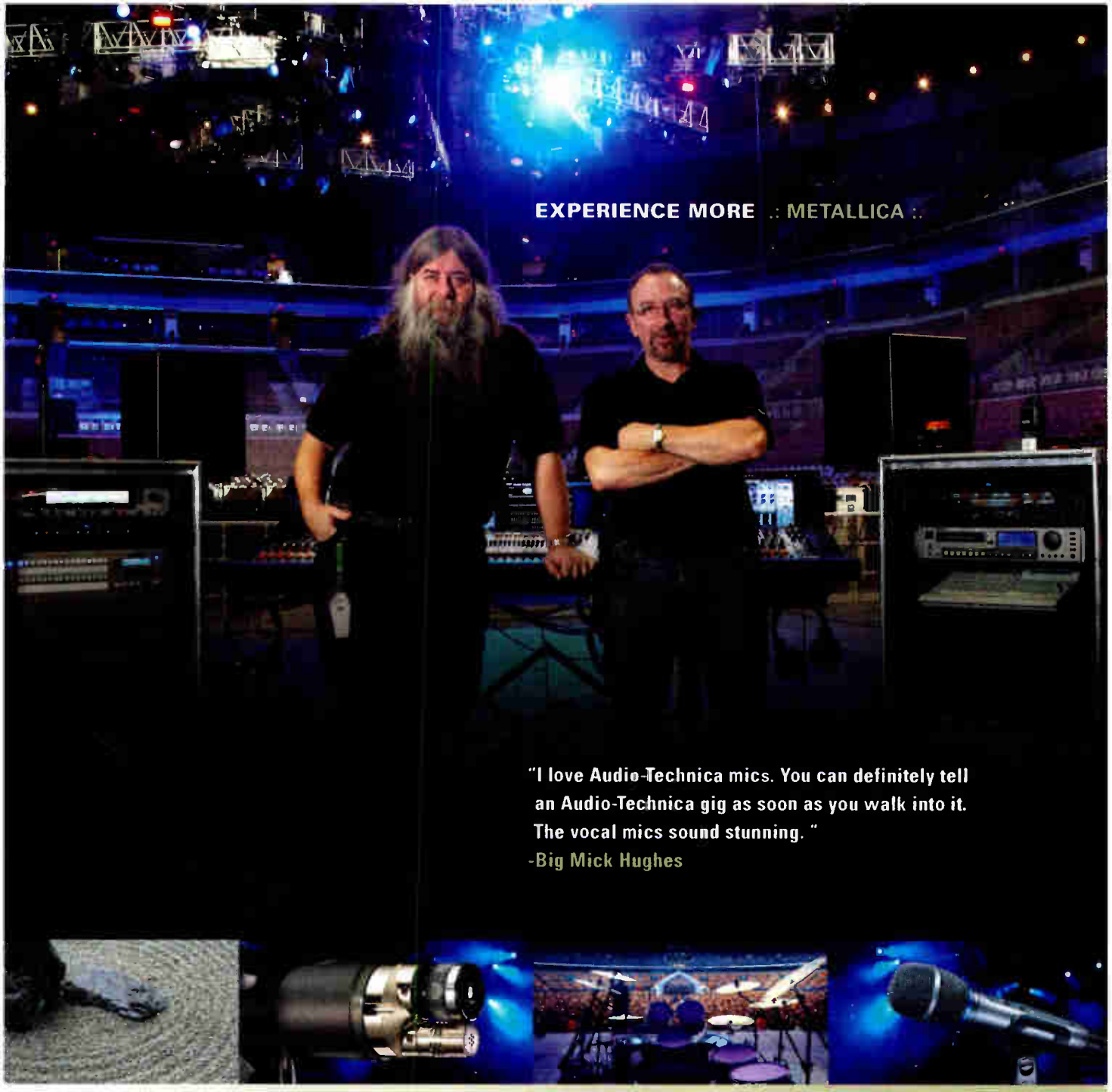
I had a pretty significant show to do in Miami and didn't think my Yamaha MC2404 board was going to be sufficient for the job and so I rented a 40-channel Allen & Heath board (with a Whirlwind snake). I also brought my Yamaha and a nice old Peavey 16-channel mixer with me, just in case.

The venue was an old church that had been converted into a community center. I got as far from the stage as I could without running cables all over the place. I rigged a good spot for my outboard rack and had an old drafting table for the desk, so I thought I was comfortably away from the "public."

I was seriously wrong. An intoxicated gentleman had just purchased a 32-ounce beer in the lobby and decided to get close to my station.The dude tripped and poured the entire beer directly into the console. It shorted the board to the point that it just shut itself down. Thankfully, I had the two backup desks with me. After about a 20-minute delay in swapping equipment, I had the audio back online and erected a huge barricade around me.

Bruce W. Hansen

Was postponing the FCC change-over to June a positive decision, or did it simply add to consumers confusion? E-mail us at mixeditorial@mixonline.com.



"I love Audio-Technica mics. You can definitely tell an Audio-Technica gig as soon as you walk into it. The vocal mics sound stunning."
-Big Mick Hughes

Metallica's legendary front-of-house & monitor engineers, Big Mick Hughes and Paul Owen, rely on Audio-Technica microphones tour after tour, year after year. Mick puts it simply: "I love Audio-Technica mics." Paul adds: "The AE2500 is one of the best mics that has ever come into this business." On everything from voice to drums & guitars, Audio-Technica mics have stood tough across the stage with Metallica for a decade & counting. Wherever your passion for music takes you, experience more. audio-technica.com

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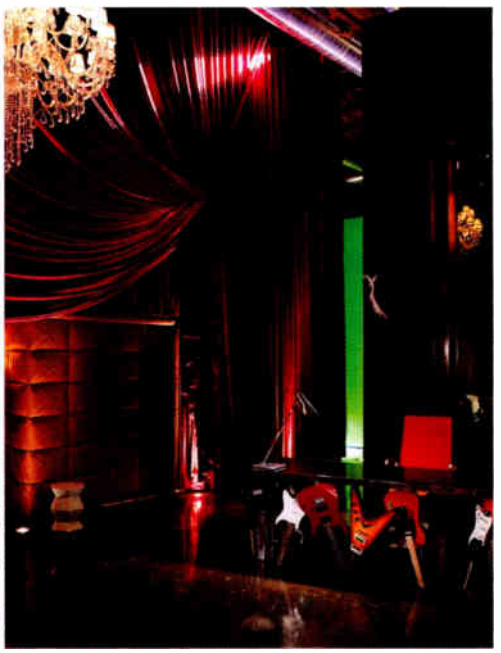
By Bud Scoppa

EastWest Updates Legendary Hollywood Studios

Engineers and artists who've put in time at Western Recorders, more recently known as Cello, are certain to be disoriented when they enter the hallowed edifice, brilliantly designed by Bill Putnam in 1961. "Nothing looks the same except the studios—that's the whole point," says Doug Rogers of EastWest, who bought the rundown facility in January 2006 and reopened it two years later as EastWest Studios (www.soundsonline.com/studios).

The acquisition of Western/Cello ended Rogers' search for a set of great-sounding rooms to make virtual instruments, one of EastWest's primary product lines. "Having a very successful software company enabled us to spend more here than the average studio owner," he asserts. "It would be financially impossible to do what we've done here if that was our only business. But there are only two producers in our company, and we can't use all five studios. The other three rooms that we're not using will be hired out."



Above: Doug Rogers and Ken Scott. Right: This entry area is part of Philippe Starck's "jewel box" design.

It was Rogers who had the brainstorm of bringing in Philippe Starck—who's renowned for his nontraditional designs of hotels like New York's Royalton, Paramount and Hudson; San Francisco's Clift; and L.A.'s Mondrian—to radically reconfigure the look of one of L.A.'s most beloved recording studios.

"When I bought this place, I only bought it for the sound of the rooms," says Rogers. "But then I asked myself, 'What do I do with it?' I brought in some designers initially to give me some ideas, and they all had the same idea—to turn it into the same as every other recording studio. I kept saying to them, 'No, I don't want that. We're in Hollywood, which is becoming the center of L.A. once more and has glamour. This studio had glamour, so we must be able to re-create the glamour once more.' They kept saying, 'Well, what kind of style do you want?' I'd say, 'Well, what Starck does with hotels.' And after about the third time, it was like, 'This is crazy. Maybe I'll ask *him*.'"

Rogers didn't know Starck, but he sent him an e-mail and a month later got a reply from the intrigued designer, who flew to L.A. to survey the site. "When I arrived, there were five gems covered by a mountain of shit," says Starck in his thick French accent, sitting with Rogers at a table in one of the studio's posh lounges. "I said, 'Okay, the building will be a jewel box with the five jewels inside.' Just this one phrase—and Doug said, 'Love it! We'll do it.'"

"It just totally made sense to me," adds Rogers. "I think that if you're asking people to create and deliver something extra-special, then you need to put them in an extra-special environment to bring that out. And this was anything but. The studios themselves were magic and have had that magic for 50 years, but everything around them was in utter disrepair. We could've simply repaired it, but that wouldn't have created the vibe that we've got now."

"The only way to proceed was to protect the jewels in a religious way," Starck explains. "That meant to absolutely not touch the studios, to be sure that the acoustics were protected. Finally, we made a sort of globe, like in the museum, to display and protect these five jewels. And now we have these five principal temples, and around them we create life. We create a sort of village where we think they can feel free and concentrate very comfortably."

Starck describes his design as "a boiling bucket of culture, and you cannot even define the style. There is *no* style, just the addition of surprises, of strange light, of perspective, which bring you into a sort of *Alice in Wonderland* where you lose gravity and you can create music. It's a home now, a home for creators."

Rogers did make one significant change to the control rooms, installing ATC SCM300ASL (dual 15-inch, three-way soffit-mounted) and the SCM150ASL (single 15-inch, three-way, mid-field) monitors. "Our acoustic consultant, Nick Whittaker of Electroacoustics, recommended them highly, as did both Doug Sax and James Guthrie, Pink Floyd's engineer and producer. We got an evaluation pair, liked their sound and, more importantly, their brutal accuracy, so we purchased ATCs for all the rooms." Consoles within the five studios are Neve 8078 and 8028 in Studios 1 and 2, respectively; a Trident A Range was purchased for Studio 3; and a rare EMI REDD tube console and EMI TC12345 in 4. Studio 5 is now used as a digital editing/programming room.

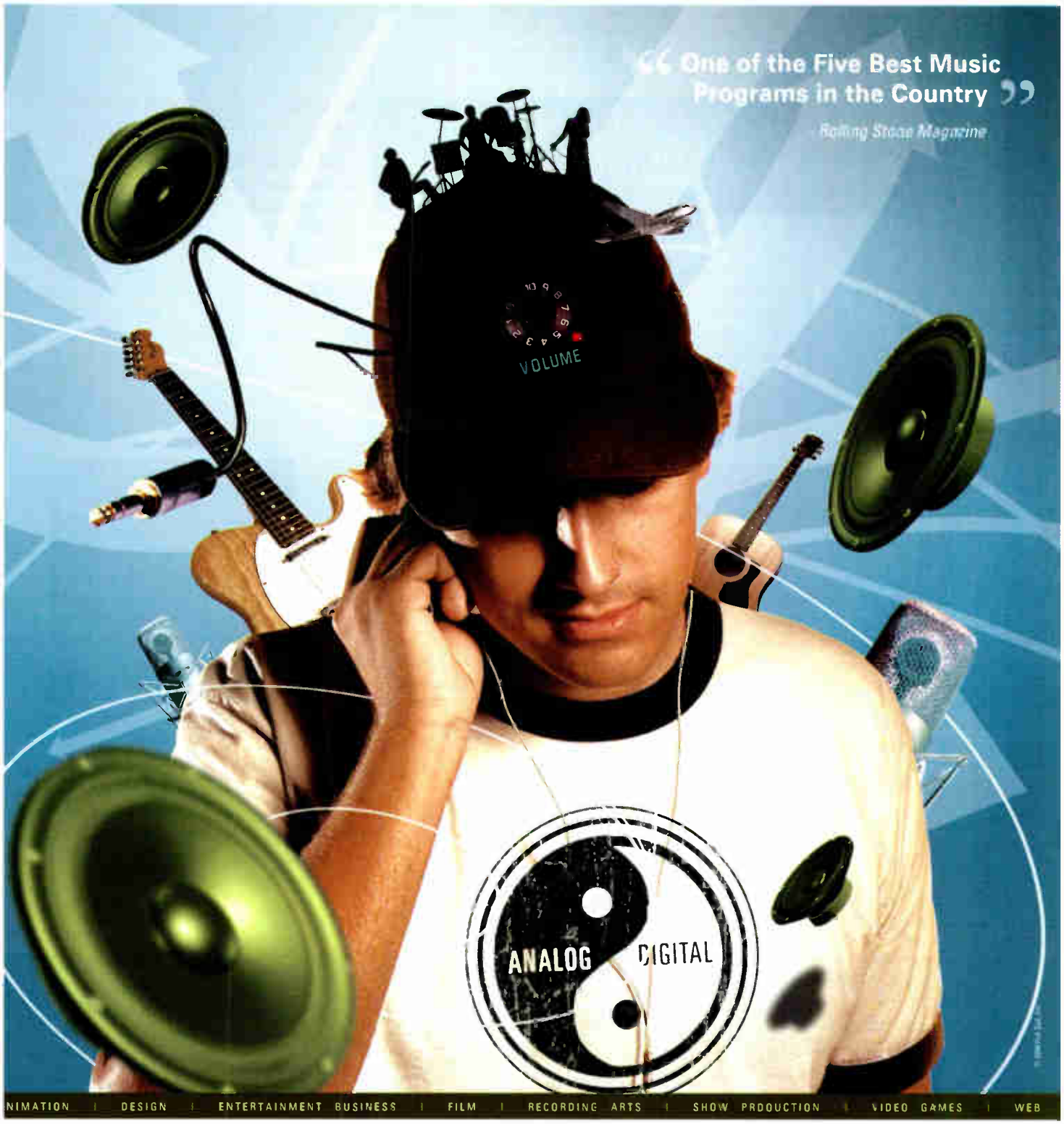
"Doug spent, I'm sure, 10 times what he wanted to spend, and 10 times the time he wanted to spend on it," Starck acknowledges. "But I've never had a partner who was so obstinate, so stubborn, to have the right result, and so confident."

The proud owner runs his eyes over Starck's dazzling creation and sighs with satisfaction. "Everybody wants to come here," he says. "They already know that the place sounds amazing, and they can't wait to see what this man, who virtually reinvented the hotel, has done to reinvent the recording studio. We hope that it stimulates artists and producers to create something special, because that's ultimately what this is all about. If they walk out of here with a great record, we've done our job—it's a success." III

Bud Scoppa is Mix's L.A. editor.

Recording Arts

Associate's Degree Program



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As usual, the Southern California weather was sunny and warm for NAMM week, and following a near-disastrous CES show, where this year's attendance plummeted by some 30 percent, NAMM looked pretty good by comparison. True, the guest and visitor badges seemed to outnumber the coveted blue "buyer" badges by about 10 to 1, but those who did attend were serious about business and NAMM officials seemed genuinely relieved by the respectable turnout. As in past years, there was no single "gotta see it hit," but there were plenty of updates to existing products, such as Cubase 5; lots of other gear that is finally shipping, such as Hagstrom's 8-string bass reissues; and lots of almost-dones, i.e., N.A.M.M.s (Not Available—Maybe Musikmesse). Visit emusician.com/ms/namm for full product debuts and more than 50 product videos.

Viral Music for Change

Express Peace's first viral CD, *Something You Wanted to Hear*, brings with it a lofty goal: giving a minimum of $1 million to established charities by January 1, 2010, to help end human trafficking (through the Salvation Army's Anti-Human Trafficking division) and to feed impoverished children (Feed the Children) around the world; the rest of the profits will be used to expand the band's campaign.

Here's how it works: A physical CD lands in a listener's hands for free, given to him or her by a friend or colleague. Express Peace asks that users who enjoy the music go online and buy the album or a single or two, and then pass the CD to someone else. The band is also offering promotional copies online so fans can buy 10 or more CDs at a discounted price to help spread more viral CDs around.

"I thought this would be a good way to demonstrate that you don't have to be an activist to change the world; you don't have to give your whole life to it—few people can," said the project's Derrick Davis. "But what my music is doing is showing that everyone can do something with what they have, to help bring hope into the world. If you like the album, cool, buy it online and help us change the world for the better; if you don't like it, then give the promotional CD to someone else and at least tell someone to read about our goal to help end slavery and feed impoverished people."

The album, available on CD/DVD 5.1 combo, is also available on iTunes, Rhapsody and other sites in a variety of formats and can be purchased through those channels. Check it out at www.expresspeace.com.

Tunes From the Way-Back Machine

Performing classic videogame tunes from games such as *Delta*, *Commando*, *Monty on the Run*, *One Man and His Droid* and *International Karate*, the Netherlands-based C64 Orchestra—that is, Commodore 64!—takes a classical spin for approving audiences. The 1980s computer's composer Ron Hubbard provided scoring for the live pieces conducted by Bas Wiegers. Front-of-house engineer Jorrit de Kort specs a four-way active P.A. system and an analog desk. In his rack are Lexicon LXP15, Yamaha SPX-90, BSS DPR 901, TL Audio 2051, and PL Dynamax and Transient Designer. Check out performance videos at www.myspace.com/c64orchestra.

seen&heard

"Music is not simply a distraction or a pastime, but a core element of our identity as a species, an activity that paved the way for more complex behaviors."

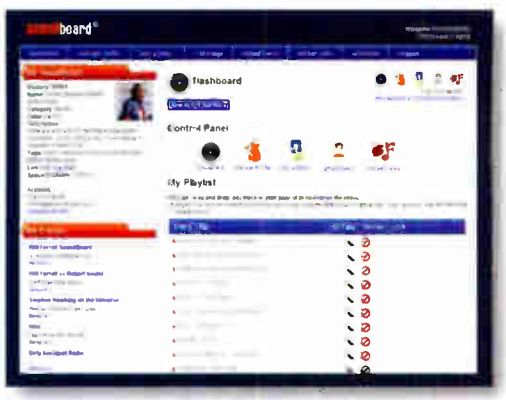
—Daniel J. Levitin on his new book, The World in Six Songs: How the Musical Brain Created Human Nature, www.yourbrainonmusic.com

1.7 Billion

Music tracks downloaded in 2007 (a la carte downloads and digital album sales, each counted as single tracks)
—*Nielsen Soundscan 2008*

$1 Billion

—Sales of *Guitar Hero III: Legends of Rock* in North America after 14 months on the market
—*Activision Blizzard*



Share Your Sounds

Audio-sharing community Soundboard.com contains more than 170,000 sounds and sound bites in 20 categories (ranging from sports to travel to history to radio to movies and celebrities), where registered members can create, customize and manage their "soundboard." Board builders can then share clips and link boards, while visitors can download, embed or "send a sound" via e-mail.

Rock '09 Hall of Famers

The Rock and Roll Hall of Fame (rockhall.com) will induct Jeff Beck, Little Anthony & The Imperials, Metallica, Run-D.M.C. and Bobby Womack this year. In the Early Influence Category is rockabilly pioneer Wanda Jackson, while bassist Bill Black, drummer DJ Fontana and keyboardist Spooner Oldham will be named in the Sidemen category. The ceremony (broadcast live on Fuse TV on April 4) will take place in Cleveland for the first time since 1997; a slew of weeklong events are also planned.

How much would you pay for a digital track?

$0.50:	$0.99:	$1.25:	$2:	Nothing:
25%	31%	4%	6%	31%

—*mixonline.com poll results*

Industry News


Matt Larson


Freddy Meyer

Group One Ltd. (Farmingdale, NY) appointed **Matt Larson** as its national sales manager...New hire at **Prism Sound** (Cambridge, UK): **Dan Foley**, telephony solution strategist, as well as sales rep for test and measurement solutions in the Eastern U.S....New director of U.S. sales, Western region for **QSC** (Costa Mesa, CA) is **Perry Celia**...Joining **Meyer Sound**'s (Berkeley, CA) European technical team is **Jan Frederick Christoph Meyer**...**Hervé Odini** is **Digigram**'s (Grenoble, France) new international sales and field marketing director...New face at **Harman Music Group** (Salt Lake City) is **Jay Woolley**, marketing director for portable sound...**Future Sonics** (Bristol, PA) hired **Dayna Gelenberg** to fill the director of communications position...New distribution deals: **TransAudio Group** (Las Vegas) is now handling U.S. and Canadian distribution for **Tube-Tech** (Denmark); **Clavia** appointed **American Music & Sound** as the exclusive distributor of Nord products in the U.S.; **ARX Systems** (Victoria, Australia) appointed Scottsdale, Ariz.–based **Olsen Audio Group** as its distributor for the U.S., Canada and Mexico; and **LOUD Technologies** (Woodinville, WA) named **Onkyo Tokki** as the exclusive Japanese distributor for its Mackie and TAPCO brands.

Infrasonic Sound—One-Stop With an Old-School Vision

Above: The main tracking room is spacious, allowing a full band to record. Right: Jeff Ehrenberg (left) and Pete Lyman in the Infrasonic control room.

There's more to draw you to Infrasonic Sound Recording Co. (www.infrasonicsound.com) than its ample collection of vintage gear. Located in East L.A., Infrasonic harkens back to classic facilities of the mid-20th century by encompassing a recording studio, mastering suite, record label, publicity department and even a retail outlet. (It serves as the West Coast showroom for pro audio distributor Vintage King.)

Infrasonic opened in 2004 when Jeff Ehrenberg and Pete Lyman built a control room into an industrial space that once housed a motorcycle paint shop. "We started running snakes out the door as soon as we had the control room," Lyman explains. "We'd spend a couple of weeks doing construction, then two weeks making a record."

"The idea was to have an open and spacious tracking room, with a nice live performance feel," Ehrenberg adds. "We didn't want a studio that was divided into small spaces. We wanted to create a comfortable setting for artists and be able to accommodate any project they have." The studio offers a number of analog and digital formats to work in, allowing for a hybrid approach when artists are on a modest budget.

"We'd like to keep it all tape, but the high cost of tape makes it impossible to do 100 percent of the time," notes Ehrenberg. "Often we track basics to 2-inch, then spool that into Pro Tools, do overdubs on the computer, then mix through the console to half-inch tape." Their tape machines include an Otari MTR 90 with 16- and 24-track head stacks paired with a Rupert Neve Designs 5088 32-channel console.

The studio's off-site mastering suite includes Mytek 8-channel 192kHz converters, a custom Shadow Hills mastering compressor, and B&W monitors with Perreaux amplification controlled by a Crane Song Avocet.

Infrasonic also offers vinyl mastering and direct-to-disk recording using a Neumann AM-32 lathe that once belonged to mastering engineer Richard Simpson, who also plies his skills at the studio. (Simpson's track record spans four decades and includes work at RCA cutting masters for Lou Reed, David Bowie and Elvis Presley.) "I became interested in mastering after meeting Richard," Lyman explains. "In 1999, I apprenticed with him, and eventually he moved over here with us."

Recently, Lyman mastered the vinyl version of the Mars Volta's *The Bedlam in Goliath*. Direct-to-disk clients include Beck, who assembled an all-star band for a week of sessions. "The main studio is wired to the mastering room specifically for this purpose," Lyman says. For more details about Infrasonic, visit www.mixonline.com. —*Laura Pallanck*

project studio

Embarka Studios

Jef Stott (left) and Kush Arora (facing page) share Embarka Studios in San Francisco.

Jef Stott and Kush Arora—both independent producer/artist/DJs in the San Francisco Bay Area—share Embarka Studios (www.embarkarecords.com), which is situated in a mixed-use building in San Francisco's trendy Hayes Valley neighborhood. Stott describes Embarka as a "small boutique studio for voice-over, singer/songwriter, world music, electronica, hip-hop, Foley and sound design. It's a little spot, but it's kind of mighty."

Both Stott and Arora are rooted in electronic and world-music genres. Stott specializes in Middle Eastern styles; he founded Embarka Records in 2005 and is also signed to Six Degrees Records. Arora oversees Kush Arora Productions (www.kusharora.com). "Most of the music I record here is dance hall, dub step, Bhangra and electronic-dub styles," Arora explains. Arora also does voice-over and post-production work for Web and video. Embarka's clients include Electronic Arts, Showtime, New Line Cinema and Caravan Records.

Sound Pure Offers Boutique Studio, Gear

Todd Atlas at the console and Chris Boerner in the guitar shop at Sound Pure

Todd Atlas opened his Sound Pure (www.soundpure.com) business in Durham, N.C., 10 years ago as a way to improve his own, and other engineers', access to boutique high-end mics. He worked as a sort of middleman, purchasing prized, limited-edition gear, keeping what he needed and selling what he didn't. His inventory and areas of specialty expanded over the years until he decided, in 2006, to really let it explode: He took on a new hire, producer/guitarist Chris Boerner, and he purchased an 8,000-square-foot, red-brick warehouse in downtown Durham. They transformed the building into a unique combination of studio and boutique, offering handmade guitars and equipment, as well as commercial recording services.

"The things we are doing are not new," Atlas says, "but the combination of services we offer is unique. And we see the industry in general going in the direction we've been going in all this time—emphasizing high-quality, boutique outboard gear rather than massive studio consoles."

The studio facilities at Sound Pure comprise two control rooms, both equipped with Pro Tools HD3 rigs, an array of collectable new outboard gear and Focal Twin6 Be monitoring. The tracking room, Studio A, contains a Steinway grand and was designed to serve as a testing zone for clients of the guitar and pro audio businesses, as well as a commercial room and a base for music/audio seminars and events.

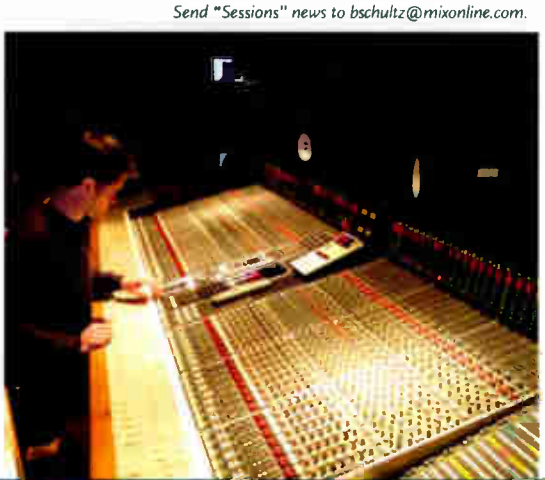
"Last week, we hosted an event with [roots/blues musician] Otis Taylor. We were able to video the jams. The room was full of guitar and banjo players playing amazing blues. If we couldn't use the studio this way and put these things on our Website to promote the studio and the shop, we wouldn't be succeeding."

—*Barbara Schultz*

Track Sheet

Doppler Studios (Atlanta) hosted vocal sessions with none other than Whitney Houston, whose first album since 2002 is set for release this year. Producing and composing in the studio with Houston was Grammy Award–winning R&B artist **Johnta Austin**. **Aaron Holton** engineered and **Lloyd Cooper** assisted. Other recent sessions at Doppler include **Soulja Boy** writing and producing his own tracks, engineered by **Rick de Varona** and assistant Cooper...Still channeling Billie Holiday, **Madeleine Peyroux** recorded her latest in Avatar (NYC) Studio B with producer **Larry Klein**, engineer **Brian Montgomery** and assistant **Fernando Lodeiro**...**Rob Tavaglione** produced and engineered tracks for **Carmona**'s next album...Former NYC engineer **Pier Giacalone** has relocated his studio to Hope, Penn. First projects in his new digs include mastering for Philadelphia-based band **TJ Kong** and the **Atom Bomb**...In his **Skip's Place** (Northridge, CA) studio, Skip Saylor worked with fellow engineer **Ian Blanch**, mixing releases for singer/songwriter **Adjoa Skinner** and **Mike Corrado**...**Ted Wulfers** visited **Mad Dog Studios** (Burbank, CA) to record tracks for his upcoming CD. Wulfers co-produced with **David Rieley**, and **Eric Corne** engineered.

Send "Sessions" news to bschultz@mixonline.com.



Doppler Studios engineer Michael Hastie gets the SSL 4000E/G console ready for a session in Studio E.

by Matt Gallagher

Stott and Arora had outgrown their first shared studio in an artistic collective called Cell Space. In mid-2006, Stott discovered their current room, whose previous tenant had left behind a control room with a built-in window and some acoustic treatment. "It just needed a little refinement on its surfaces," Arora notes.

"We have four spaces," Stott says. "There's a 3x4-foot window that looks into our [WhisperRoom] isolation booth, and next to [that is] a 12x20-foot performance area. The foyer is probably 6x10, and the control room is 8x12."

The studio partners maintain opposite work schedules and use separate DAW systems. Stott's Power Mac G5 runs MOTU Digital Performer Version 5 and Ableton Live V. 6, as well as virtual instruments from Native Instruments, Spectrasonics, Propellerhead and LinPlug, and Waves' Platinum Native Bundle plug-ins. Arora primarily works on a Dell Inspiron E1505 laptop PC and has a custom tower PC containing Universal Audio UAD-1 and UAD-2 cards. He uses Nuendo, Ableton Live, Adobe Audition, and various soft synths and plug-ins. Both partners monitor on Dynaudio BM 5As and share a collection of outboard processing and microphones.

This month, Arora is releasing *The Dread Bass Chronicles* and *Boiling Over* on his label. Stott recently produced *Eastern Wind*, and will soon begin production on his next solo release. Looking to the future, Stott says, "I think I'm going to make Embarka a multimedia, interactive design studio, expanding the palette and the client list." III

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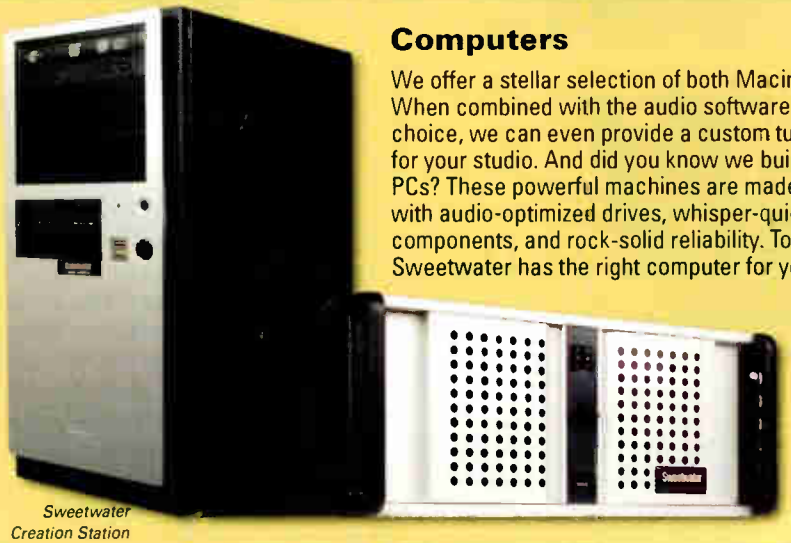

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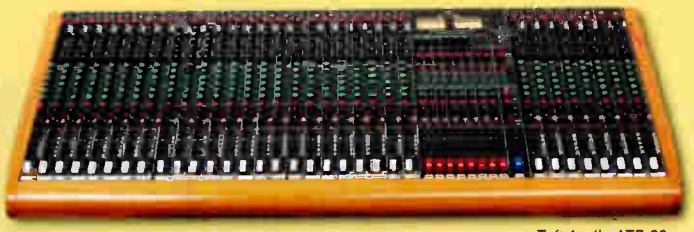

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NEW YORK Metro

by David Weiss

You know that thing they say about history? It's something about forgetting it and then repeating it. If New York City's next generation of studio operators is any indication, history has been studiously observed and its repetition just may be avoided.

Stadiumred owner Claude Zdanow in Studio One

Instead, updated business models are arriving.

One Manhattan dweller intent on leading the charge into the future is Claude Zdanow, who two years ago took over Harlem's Harmolodic space on 125th and Park (formerly owned by Ornette Coleman), renovated it and renamed it Stadiumred (www.stadiumredny.com). An entrepreneurial spirit, to say the least, Zdanow learned in his teens that it *is* possible to make money with a small recording studio—he founded RockIT Studios in his parents' Long Island basement and managed to attract major-label projects. Short stints in college and touring as a bass player convinced him that his heart lay not in academia or on the road, but in tracking, mixing and managing.

Now at the tender age of 20, Zdanow is making sure that Stadiumred has what he believes current world-class New York City facilities need to survive and thrive: ground-up flexibility, from both a technical and managerial perspective. "Initially with being a young entrepreneur, there's a backlash—some people in the industry don't take you seriously," he says. "But I saw myself as being 100 percent with the technology of the times, and I'm not afraid to do things differently. I started the studio with the platform of starting strong relationships with people, being diverse and making no-B.S. decisions."

The core of Zdanow's philosophy can be seen in his 32-fader Digidesign ICON D-Control ES with 7.1 capability. "After microphones, in our main room and our other three rooms it's all in the box—everything digital is so good, there's no reason not to embrace that," Zdanow says. "People are surprised when they come in and see an ICON, but it has multiple advantages. From a hardware standpoint, the analog boards have a lot of upkeep and maintenance, and you're getting 64 channels of the same sound. We went with a lot of preamps that compensate for not having an SSL.

"With the ICON, the biggest thing is its integration with Pro Tools. Pro Tools is the Number One DAW in my eyes—nothing comes close to it for mixing and recording audio, and the amount of control with which you can do things with the ICON is unreal. I was building a studio to make as many people as possible happy and to do as many jobs as best as we could do them. The ICON is great for surround, and it's also ideal for mixing 80 or 100 tracks."

Originally designed and subsequently renovated under consultation with Alan Fierstein of Acoustilog, Stadiumred offers an extremely appealing 900-square-foot live room and spacious 400-square-foot control room. Zdanow's confidence in the facility's versatility has allowed him to attract a wide range of clients, including rock engineer Joseph Pedulla, hip-hop engineer Ariel Borujow and leading classical engineer Tom Lazarus, who mixed there in 5.1 for Oliver Stone's *W* and in 7.1 for the San Francisco Symphony.

"The backbone of our diversity is the people we're bringing together," Zdanow states. "From a technological standpoint, with the ICON in the main room we're not spending hours to recall sessions. Every piece of gear we use was put there to do the best job it can and be as flexible as possible.

"Another part of being diverse is being able to offer a variety of things to an artist that comes into a studio. There's a division of the studio that manages artists and can do everything a label does—now it's so easy to distribute music and function as a record label, and the recording studio gives you a platform to move forward with that. We also do video editing for commercials. So by working out of Stadiumred, you have access to a much broader range of services you wouldn't be able to get otherwise. Another thing that's been successful for us is giving tours [to the general public] of the facility—it's interesting for people to come in and see where artists are working behind the scenes."

Zdanow will be the first to admit it hasn't all been a joyride, starting with first-hand lessons on getting burned by deadbeat clients and how to avoid them. But this wunderkind is into music recording for the long haul.

Stadiumred occupies a space formerly owned by jazz great Ornette Coleman.

"To be a successful businessperson, you have to love what you do," he counters. "I've been a musician and a songwriter my whole life. I wouldn't be able to grow any business that I wasn't personally involved in."

Send New York news to david@dwords.com.

NASHVILLE Skyline

by Peter Cooper

Dierks Bentley is on something of a roll, having made a couple of Number One country albums in a row and notching a few Number One country single hits, including "Every Mile a Memory," "Free and Easy (Down the Road I Go)," "Come a Little Closer" and "What Was I Thinkin'." So some would say that he should stay on the path he'd cleared, should record something along the lines of the other things he'd done and should probably do so while nodding to the current economic climate and get things done as quickly and as cheaply as possible.

Engineer/associate producer/mixer Luke Wooten (left) and co-producer Brett Beavers at Station West during work on Dierks Bentley's *Feel That Fire*

"We did exactly the opposite," says engineer/associate producer/and mixer Luke Wooten. "We decided to buck the trend." And so Wooten and co-producers Bentley and Brett Beavers recorded in different studios with different players—blending touring pros and session musicians.

"I told them at the beginning of this, 'I'm going to give you guys your first grays,'" Bentley says. "I knew it was going to be hard. But I also knew we were going to get something good out of it."

The "something good" is Bentley's *Feel That Fire*, which was massaged and altered, considered and adjusted more times than some albums are played.

"The last few records we'd done the same way with a great group of guys at Ocean Way in Nashville, where I love the board," Beavers says. "Dierks wanted to throw all that out the window. We decided to cut some stuff with his band and use it as pre-production, and then take any of that we could and work it into the record. It was more drawn out, exploratory and time-consuming, which I guess could be called 'difficult' just because it was more work. We wound up having some kind of recording of 30 or 40 songs, and some of those wound up as Frankenstein tracks on the finished album. There'd be a rhythm track from pre-production with things from months later added on."

Feel That Fire was finished at Station West, a home base for Bentley, Beavers and Wooten, and one of the few places in Nashville where the mixing board is a Harrison Series 12, which features an analog engine and a digital control surface.

"Brett and I love the sound of tracks that are mixed analog," Wooten says, "but you have to be able to get back to things nowadays. This gives you the best of both worlds, where you have analog sound but you can do an instant recall that's not approximating pictures; it's a true digital recall with an analog mix."

The thing is, Bentley is one of those fellows who wakes up at 4 a.m. and writes notes about possible adjustments. Or he stays up past 4 a.m., writing notes about possible adjustments.

"Dierks is always very highly involved," Beavers says. "Maybe it's a word he doesn't like or one place where the guitar is up too high, but he drives around listening to everything over and over, right up until mastering. He keeps ideas flowing, and we wind up doing a lot of changes."

Wooten says that every mix on the album was tweaked at least once on the day before mastering. Made in Nashville, the Harrison provided a means to reach inside each mix in seconds, make changes and make deadlines. But no one was interested in using available equipment to tighten tracks into digital lines.

"We don't strive for perfection," Beavers notes. "No town can hold a candle to what we do in Nashville, day in and day out, in terms of chops and creativity. We hire the best, and we let them do what we do, and we don't go in and line up things when they already feel right. It's going to be good when these guys cut it, but we refuse to make it sound like a machine."

Wooten adds, "When you've got the best musicians in the country and you use tools designed for amateur musicians to make them sound like they can play in time, you end up with something that's so gridded and tight that it doesn't feel real."

Bentley's vocals went through a Neve 1073 preamp and a Tube-Tech CL1-B compressor, as always. Microphone choice was no choice at all, as every song on every Bentley album finds him singing through an AKG SolidTube mic, a large-diaphragm microphone that seeks a happy compromise in the solid-state-vs.-tube argument. Although the vocal setup was as per usual, Wooten and Beavers noticed the extent to which Bentley's voice has evolved when they were going back through older tracks. Part of that evolution has to do with comfort level: Station West is right across the Berry Hill neighborhood street from Bentley's office, and it has become a kind of audio campground for Bentley, Beavers and Wooten. But the difference also has something to do with the past few years' intense touring schedule.

"He has more rasp and character now," Wooten says. "If you listen to things from the first or second album, you're like, 'Who's that kid?' That's the difference in five years and 1,200 dates."

Wooten compares Bentley's voice to the many kinds of footwear often worn on the streets of Music City. "It's an old boot, man," Beavers says. "The more you wear it, the better it fits. He's confident and comfortable singing, and he gets in the vocal booth and pours it out every time."

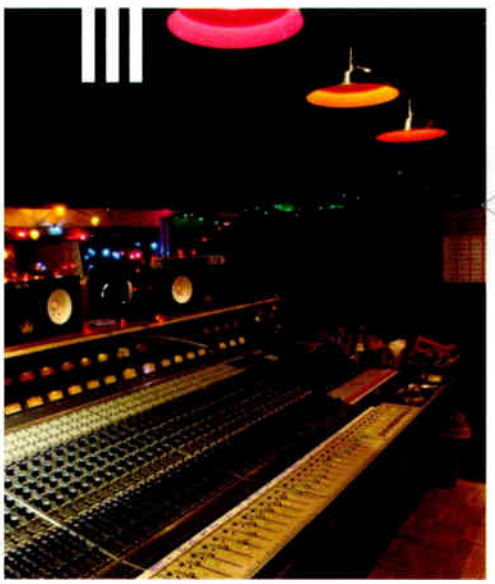
Send Nashville news to peter@petercoopermusic.com.

L.A. Grapevine

by Bud Scoppa

There's a lot of history embedded in the funky walls of Sound City, which is celebrating its 40th anniversary this year. So this is the perfect time to check in with Tom Skeeter, who's owned the place since 1970, and Toronto-born Shivaun O'Brien, who's functioned as studio manager for going on 18 years now. "When I took the job, I questioned my sanity," O'Brien admits. But it's turned out to be quite a ride.

When I dropped by recently, I wasn't surprised that nothing had changed since my last visit two years ago, or any previous visit I'd made there since the late '70s. That's because Sound City's loyal clients—including artists Tom Petty and Ry Cooder, as well as renowned producers Rick Rubin and Jim Scott—demand that those walls never be repainted nor the linoleum floors replaced for fear that the sounds that pass through the two iconic Neve consoles lose their legendary magical quality.



Mood lighting at Sound City

Among those who have shown their belief in the magic of Sound City's accidental perfection by tracking all or part of their latest albums at Sound City are Metallica, Weezer, Nine Inch Nails, Elvis Costello and Mavis Staples (with Cooder producing)—not too shabby (pun intended).

"Nobody 'designed' that room," says producer Scott of Studio A, where such landmark albums as Petty's *Damn the Torpedoes*, Nirvana's *Nevermind* and Rage Against the Machine's 1992 debut were tracked. "You walk in and bump your head on the speaker—nobody designed that. It's very homemade, but very rock 'n' roll, and there's a lot of soul here."

The nondescript facility, located in an industrial park in a section of Van Nuys whose prime attractions are the Budweiser brewery and Dr. Hogly Wogly's BBQ, became a studio in 1969 when Vox Instruments sold the building to a couple of neophytes. After a year in which the clients included Neil Young and Charles Manson, the owners sold Sound City to a West Virginia holding company that included ex-Marine Skeeter. "They were looking to put some Hollywood glitz into the stock," he says with a laugh, peering out at the cinderblock structure that's been his baby ever since.

"It didn't take long to realize that it wasn't going to happen unless it was upgraded to state-of-the-art," Skeeter continues. "So we took out a loan and bought a Neve console. Keith Olsen, who was our staff engineer, picked it and helped customize it. That turned out to be the smartest thing we ever did because that same original console is still sitting there in Studio A. Rupert Neve said it was probably the only console of that vintage that's been in the same spot since it was manufactured."

That would be Studio A's centerpiece, a 28-input, 16-bus, 24-monitor 8028 with 1085 EQs and *no automation*. Studio B boasts an 8078 with a GML Mac interface that O'Brien picked up from Memphis' House of Blues. This is a righteously old-school setup, to say the least.

Sound City has proved to be an excellent training ground for engineers and producers. Among the notable studio artisans who started out as runners or assistants are Greg Fidelman, Joe Barresi, Nick Raskulinitz, Mike Terry and Billy Bowers.

When O'Brien took the gig in 1991, the place was in shambles. She sold the 8068 that was then in B to Rubin "to get the studio out of debt and restore the Studio A console," she explains. The producer's interest was piqued when he stopped by, and he wound up cutting two tracks for Petty & The Heartbreakers' *Greatest Hits* in A, including the awesome "Mary Jane's Last Dance." Those sessions coincided with the huge buzz surrounding *Nevermind*, and all of a sudden the joint was jumping again. "We went from pretty much starving to coming into the office and finding 50 messages on the machine," says O'Brien. "We went from no bookings to booking six months in advance. It was insane, but it was a really exciting time."

In the decade-and-a-half since, the place has maintained its rep as one of the last major all-analog studios. Sound City doesn't even own a Pro Tools rig; when a producer requires Pro Tools, the cost of the rental is incorporated into the rate.

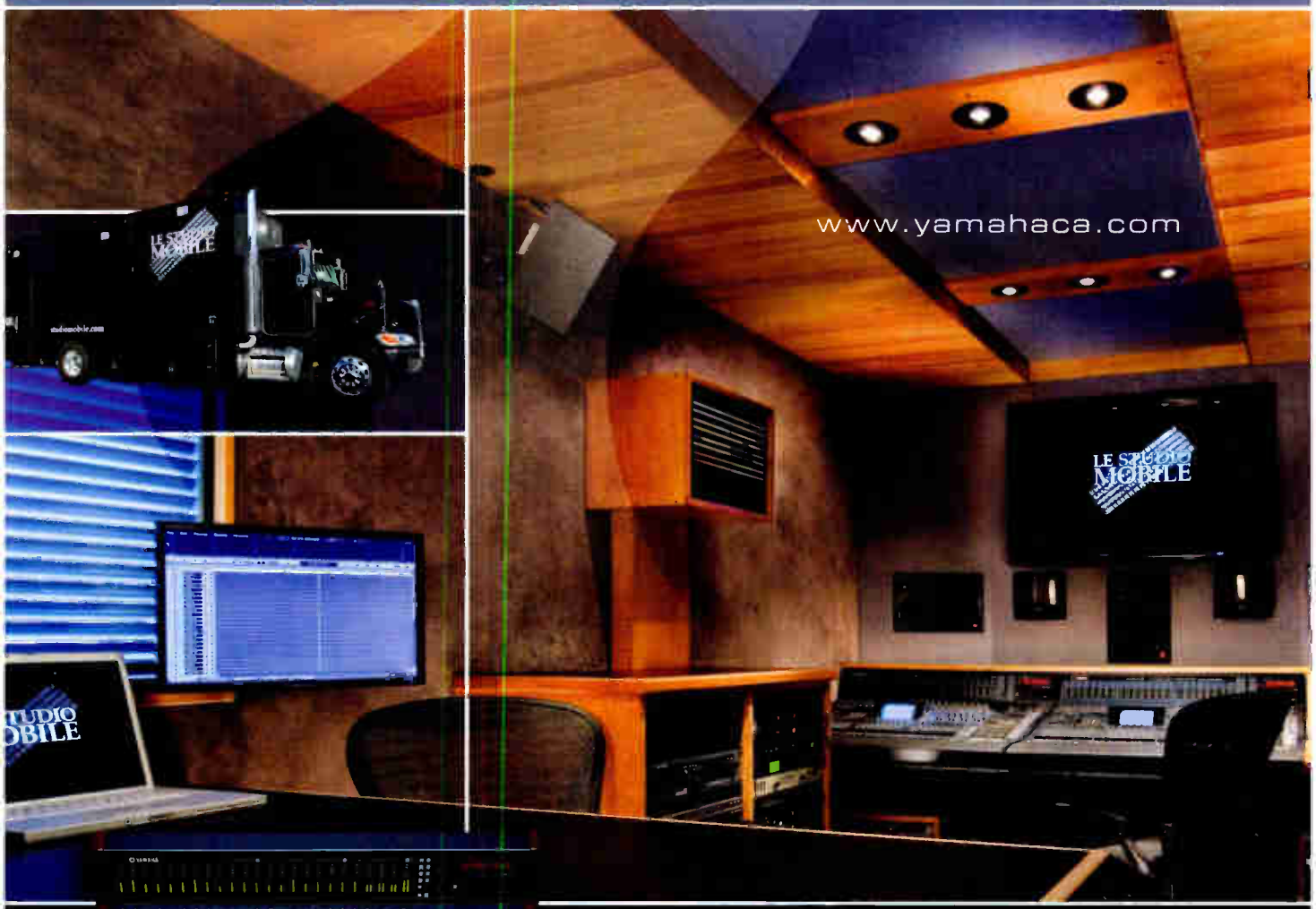
O'Brien also operates her own company, Platinum Samples, in which A-list engineers like Andy Johns, Barresi and Scott create drum samples working with virtuosos like the Heartbreakers' Steve Ferrone and the Chili Peppers' Chad Smith.

Improbably, the studio's shabby/chic look has actually influenced the décor of other L.A. facilities. Faced with patched holes in the ceiling and walls that couldn't be repaired lest the magic disappear, O'Brien put up tapestries and brightened up the rooms with Christmas lights. Then there was the aroma. "When he was doing *Wildflowers*, Tom Petty said, 'Sound City smells like 40 years of sweat, pot smoke and cigarette smoke.'" O'Brien remembers. "So we started burning Nag Champa incense at Rick Rubin's suggestion to get rid of the smell."

The always-cool Ry Cooder frequents Sound City, where he produced Mavis Staples' *We'll Never Turn Back*.

She insists that Jack Joseph Puig's transformation of Ocean Way's Studio A into a rock 'n' roll Fantasyland was inspired by what she'd done with Sound City. "And we just did it because we're the funkiest studio in town," Shivaun says with a laugh. "J.J.P. stole my vibe!"

Send L.A. news to bs7777@aol.com.



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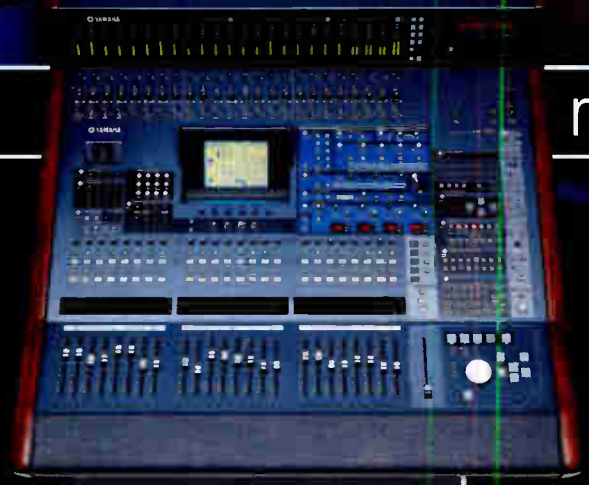


DM2000VCM

Whatever the need, wherever the gig, Le Studio Mobile is on the job and ready to go. Based out of Montreal, Quebec, Le Studio Mobile has easily become one of Canada's most trusted resources for remote recording. Their latest truck, outfitted with dual DM2000's, provides 24-bit, 96 kHz performance at 96 channels, surround sound panning, a full mixdown automation system and sophisticated DAW control. Supporting major acts such as Celine Dion and Sting and shows at the magnitude of the Montreal Jazz Festival, Le Studio Mobile delivers solid performance every time every place.

When you need help, time zones shouldn't matter. Yamaha provides coast-to-coast 24/7 technical support across the United States. With dedicated staff and regional service centers, assistance is around the corner. If we can't fix it over the phone, we'll put a part or a person on the next plane out. It's that simple.

YAMAHA
commercial audio

Big Sounds From Small Boxes

Powered Mini Monitors

By David Weiss

While grown-up ears come in a fairly predictable range of sizes, monitors span a vast expanse of dimensions. Don't have the budget or space for a set of wall-sized Augspurger mains? Relax—there are options aplenty with a much more diminutive footprint and price tag.

The popularity of self-powered mini monitors—defined here as units with single woofers smaller than six inches—is consistently growing across the board, especially with producers and operators involved in interactive/gaming audio. Typically, these professionals are creating, mixing and mastering their audio in a wide variety of settings not specifically tailored for sound.

And for those working in multipurpose edit/post suites, temporary setups at a client's office—or even in hotel rooms—the availability of high-performance, low-profile, affordable monitors is more important than ever. As client approval is frequently being sought in these situations, the playback mechanism has to be able to reach a group sitting in the room, meaning more than a set of headphones is needed. When the sound of sword swishes, cricket footsteps and detonating explosions must be heard by multiple ears outside of a pro studio setting, the small speaker reigns supreme.

In addition, music artists recording in the field or working on preliminary tracks in their personal facilities before heading to the studio have found that powered mini monitors are in the sweet spot for their needs.

The technology under the hood that drives these miniature powerhouses is evolving rapidly. Onboard amplification electronics continue to get smaller, and heat has become less of an issue as designs become increasingly efficient. Genelec helped pioneer onboard amplication in the mid-1980s, and today such packages have become the rule rather than the exception. In addition, digital crossovers are constantly improving, as minimal electronics serve to split the signals between the tweeter and subwoofer with optimal efficiency and accuracy.

Flexibility is also becoming the norm, as manufacturers keep in mind the possibility that these speakers may be constantly moving around. The Yamaha HS50M is one such example, with trim switches that let users custom-tailor low, mid and high-frequency response according to the environment or application. Some form of room response is also available on units from Genelec and Phonic.

Keeping things in sync are a battery of welcome ergonomic touches. For example, the Stereo-Link function on ADAM's A5 offers the option of controlling the overall system volume from any one speaker's gain control. In a world where matching the individual speakers would be difficult and time-consuming, such features are both acoustically beneficial and convenient. In a nod to the desktop user, many systems also have a front-mounted volume control.

If your world calls for little more than a computer, an interface and a quality pair of speakers, the following chart should point you in the right direction. They may be "fun size," but today's mini monitors are strictly business.

Blue Sky MediaDesk 2.1

Tascam VL-A5

Klein + Hummel D 11

Behringer MS40

ADAM Audio A5

JBL LSR2325P

Genelec 6010A and 5040A

POWERED MINI MONITORS FOR THE STUDIO, AT A GLANCE

Company	Model	Drivers/Amp	Inputs	Dimensions	Weight/ Pair	List Price/ Pair	Notes
ADAM Audio; www.adamaudiousa.com	A5	5.5"/ART ribbon; 25+25 W	XLR, RCA	7.2x6.8x11.9"	22 lbs	$799	ART ribbon tweeter, Stereolink single knob gain control
Alesis; www.alesis.com	M1 Active 520 USB	5"/1"; 50+25 W	TRS, USB	n/a	n/a	n/a	new at NAMM
Alesis	M1 Active 520	5"/1"; 50+25 W	TRS	6.5x10.5x7.75"	26 lbs	$499	bass density control
Avant Electronics; www.avantelectronics.com	Avantone Active MixCubes	(1) 5.25"; 100 W	Combo XLR/TRS	6.5x6.5x6.5"	17.6 lbs	$459	rear volume control, mic stand mount
Behringer; www.behringer.com	MS20	3.6"/0.75"; 10+10 W	RCA, S/PDIF	9.4x6x7.4"	12.7 lbs	$149.99	analog & 192kHz S/PDIF input
Behringer	MS40	4.75"/0.75"; 20+20 W	RCA, S/PDIF	11x6.8x9.7"	17.8 lbs	$189.99	analog & Toslink 192kHz S/PDIF input
Blue Sky; www.abluesky.com	ProDesk 2.1	5.25"/1"; 60+60 W	XLR	10.9x6.6x11.4"	48 lbs	$1,595	includes 100W, 8" powered subwoofer
Blue Sky	MediaDesk 2.1	4"/1"; 55 W	XLR, RCA	9.5x6.25x6.25"	10 lbs	$799	includes 60W, 8" powered subwoofer
Blue Sky	Exo	3"/1"; 35 W	XLR, RCA	8x5x5"	6 lbs	$399	includes 90W, 8" powered subwoofer
Digidesign; www.digidesign.com	RM1	5.5"/1"; 80+50 W	XLR, AES/EBU	11.4x6x11.8"	28 lbs	$3,499	uses PMC's Advanced Transmission Line technology
Focal Professional; www.focalprofessional.com	CMS50	5"/1"; 80+70 W	XLR, RCA	11.4x7.5x7.9"	34 lbs	$1,300	front volume control, Al/Mg tweeter, rubber decoupling base
Genelec; www.genelec.com	8020A	4"/0.75"; 20+20 W	XLR	9.5x6x5"	16.2 lbs	$1,150	room response controls, front volume control, iso-pod stand
Genelec	6010A	3"/0.75"; 12+12 W	RCA	7.5x4.75x4"	6.2 lbs	$750	room response controls
Genelec	5040A	6" woofer, 40 W	RCA	9.9x12x12"	28 lbs	$750/ each	matching subwoofer for 6010A w/ bass manager
Genelec	8030A	5"/0.75"; 40+40 W	XLR	11.75x7.5x7"	24.6 lbs	$1,700	room response controls, front volume control, iso-pod stand
JBL Professional; www.jblpro.com	Control 2P	5"/0.75"; 35+35 W	Combo XLR/ TRS, RCA	9.3x6.3x5.6"	10 lbs	$249	stereo volume control, headphone jack.
JBL Professional	LSR2325P	5"/1"; 50+35 W	XLR, 1/4", RCA	11.75x7.4x9.6"	30 lbs	$498	new at NAMM
JBL Professional	LSR6325P	5.25"/1"; 100+50 W	XLR, RCA	10.6x6.8x9.5"	34	$1,050	THX pm3 approved
Klein+Hummel; www.klein-hummel.com	O 110	5.5"/1"; 80+80 W	XLR	10.5x6.7x7.5"	22 lbs	$2,700	digital version available for $3,400/ pair
Klein+Hummel	M 52	(1) 3"; 24 W	XLR	6.8x4.7x4.6"	9.2 lbs	$870	digital version available for $2,296/ pair
KRK; www.krksys.com	VXT4	4"/1"; 30+15 W	Combo XLR/TRS	10x7x7.3"	27.5 lbs	$399	Kevlar woofer
KRK	RP5 G2	5"/1"; 30+15 W	XLR, TRS, RCA	11x7.3x9"	26 lbs	$598	next-generation RockIt
Mackie; www.mackie.com	MR5	5.25"/1"; 55+30 W	XLR, TRS, RCA	11.5x7.75x10.5"	28.6 lbs	$459	HF/LF filters
M-Audio; www.m-audio.com	Studiophile DSM1	6.5"/1"; 100+80 W	XLR/TRS, S/ PDIF, AES/EBU	12.8x9x10.3"	28 lbs	$199	headphone out, 1/8" aux input
M-Audio	Studiophile BX5a Deluxe	8"/1"; 40+30 W	1/4" TRS, XLR	10x7x8"	22 lbs	$399	Kevlar woofer
NHT Pro; www.nhtpro.com	M-00	4.5"/1"; 75 W	TRS, XLR, RCA	9x5.7x7.3"	28 lbs	$700	near/mid-field switch
Phonic; www.phonic.com	P5A	5"/1"; 140+70 W	XLR, 1/4" TRS	11.6x7.7x9.1"	25.8 lbs	$440	room compensation controls
Roland; www.rolandus.com	Edirol MA-7A/ BK	(1) 3.5"; 7 W	1/8", RCA	8.5x5.75x7.7"	11.4 lbs	$129	subwoofer output
Roland	Edirol MA-15D/ BK	3.9"/1"; 15 W	1/8", RCA, S/ PDIF	9.9x5.6x8.75"	16.6 lbs	$219	bass enhancer switch, subwoofer out
Samson; www.samsontech.com	Rubicon R5a	5"/2" ribbon; 50+20 W	TRS, RCA	8x13.25x9.25"	32 lbs	$799	ribbon tweeter
Samson	Resolv A5	5"/1"; 50+20 W	TRS, RCA	8x12x8.75"	30.5 lbs	$750	HF tilt control
Samson	MediaOne 4a	4"/1"; 20 W	RCA	6.6x7.6x9.1"	19 lbs	$420	headphone jack
Samson	MediaOne 5a	5"/1"; 20 W	RCA	8x9x11"	25 lbs	$560	headphone jack, stereo input jack
Tannoy; www.tannoy.com	Reveal 5A	5"/1"; 40+20 W	Combo XLR/TRS	11.75x7.25x12"	34 lbs	$798	Neodymium tweeter
Tapco; www.tapcoworld.com	S-5	5.25"/1"; 60+60 W	XLR, TRS, RCA	11.3x7.6x9.1"	34 lbs	$798	HF/LF controls
Tascam; www.tascam.com	VL-A5	5"/1"; 60+30 W	Combo XLR/TRS	11.4x7.8x13.6"	33 lbs	$399	
Tascam	VL-A4	4"/1"; 16+12 W	Combo XLR/TRS	9.7x6x7.6"	16 lbs	$199	
Yamaha; www.yamaha.com/ca	MSP5	5"/1"; 40+27 W	XLR, TRS	7x11x8.2"	35 lbs	$598	titanium dome tweeter
Yamaha	HS50M	5"/0.75"; 45+25 W	XLR, 1/4"	6.5x8.7x10.5"	26 lbs	$498	room control

Austin City Limits

Keeping Music TV Real for 35 Years

By Elianne Halbersberg

Now in its 35th year, *Austin City Limits* remains the flagship for how live music should be presented to viewing audiences. When artists perform on *ACL*, there are no special effects, no panels of judges, no props, no dancers—and no second chances. It is live music in its truest sense, warts and all. This, no doubt, is why the show continues to thrive, why free tickets for tapings are snapped up, why artists of all genres are eager to be booked and why the show is carried on 97 percent of PBS stations.

And although some things have changed since the show debuted in 1974—it's now high-definition and in 5.1 surround sound, for example—much remains the same, from the simplicity in approach to some of its staffers.

The original concept or philosophy of the show is unchanged: "a platform and showcase for new and original music not found in other places," says Terry Lickona, the show's producer since 1978. "It has evolved light-years from the 1970s showcase for Austin and Texas and the outlaw music of Willie Nelson, who did the original show. Now there is a lot of indie rock and rock—and anything goes, musically. It just has to be original and good. We look for artists who have something to say as songwriters, singers and in virtuosity."

In addition to booking talent, Lickona organizes staff, budget and funding. *Austin City Limits* is a lean, mean operation: six full-time employees and another 30 or 40 freelance and part-time people who come in as needed. Produced by KLRU-TV, the show has always taped on the University of Texas campus, where they have a permanent set. That will change in two years, when *ACL* partners with Live Nation to tape their shows in a new downtown Austin venue.

Austin City Limits tapes 18 shows per year; some air as full-hour performances, and others as two half-hour segments showcasing two artists. "We generally tape one artist on any particular day and only double up if their schedules are not flexible and they need to do it on the same day," explains co-producer Jeff Peterson.

"What separates us from a lot of television shows is that we give the artist creative control of the song selection, order and what gets said from the stage," Peterson continues. "They look at the show that night or we give them a DVD and work with them on what they want to include and fit into the time slot. It's important to our philosophy to present the artist in a way that best represents them. It's their song list. They can change the order of the songs, and we have to cut songs from a 90-minute performance, so all bets are off as to how the pace is maintained.

"We try to keep it as close to the original performance as possible, but we don't want the artist to have something less than acceptable to them going out to the public," Peterson continues. "So, within reason, the artist can do overdubs. If they're not doing the mix, when the audience is gone they can re-cut a guitar solo, or vocal overdubs are okay to a point. From a legal standpoint, we have a clause that conditions their ability to mix. They may have a certain reverb or certain philosophy about harmonies or how out-front the vocal will be; they developed this over the years and we try not to get too much in the middle of it. It's always a matter of subjective taste."

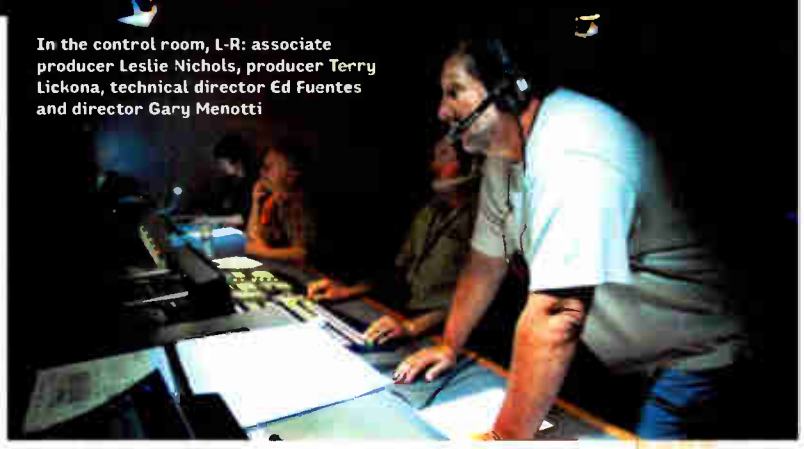
Peterson has co-produced *ACL* since 2005, dealing with all of the legal aspects, negotiations with artists and attorneys, and technical issues such as taking the show to nonlinear for the coming season. He started out as audio supervisor in 1978, holding that position until 1983, then becoming music mixer and technical supervisor. "When I came onboard, everything was analog," he recalls. "We had a Studer 16-track 2-inch recorder, using timecode on 16, which would bleed into 15, so we basically had 14 tracks. We had to bring in one or two submixers for larger bands. We submixed the drums and keyboards to get it all down, and two audience tracks for stereo audience. At that time I worked directly for KLRU, and I determined patching and controlled the level separate from the rough mix."

Audio director David Hough has been with *ACL* since the show shot its pilot. "We did our upgrades and conversion to digital in 2000 and 2001," he says. "We now have a Pyramix capable of recording up to 56 channels, which is quite a step up from 35 years ago. For the first 12 years, we recorded on a Studer A-80 16-track and a Neve 1073 16-channel desk, which we were very lucky to have at the time. In those 12 years, the biggest artist we did was Roy Orbison, who had two drummers and a percussionist. I had to submix all the drums to one track. Our next upgrade came in 1987, to a 24-channel Studer and a 36-channel Neve. Then the Studer 820 with Dolby SR allowed us to record for a full hour without having to ask the band to pause for a little bit when we had to change the reels."

Even today, 56 channels can pose a challenge. "We've had a cou-

Foo Fighters on the *Austin City Limits* stage: Chris Shiflett (guitar), Dave Grohl (guitar/vocal), Taylor Hawkins (drums) and Nate Mendel (bass)

PHOTOS: DAVE VANN



In the control room, L-R: associate producer Leslie Nichols, producer Terry Lickona, technical director Ed Fuentes and director Gary Menotti

ple of bands go beyond that," he recalls. "Pat Metheny came out with a very large setup, and we somehow found more tracks. The Dixie Chicks also exceeded it. They all change instruments, and we brought in another 16 tracks just to record them. That was a fun show to do. [Producer] Lloyd Maines came in afterward to help with the mix."

After spending four years in mono, *ACL* was one of the first programs to go to stereo. "Then Dolby came along," says Hough, "and now we're up to Dolby Digital 5.1 and ProLogic II. Euphonix has made that very simple. Over the last few years, we've made the slow transition to HD and the last two seasons were in 5.1 HD mode."

Onstage, *ACL* uses Shure 57 and 58 microphones. "We have an endorsement [deal], and we've used those mics since day one because they're really good for us, with monitors onstage and the P.A. cranked up," says Hough. "You need mics with good quality and feedback rejection. We use a few AKGs overhead for drums. All stage mics go through a transformer split that was custom-made in 1987. The Electro-Voice Delta-Max P.A. system that was installed in '87 was replaced by a Meyer P.A. in 2004. We are still using the 1987 Yamaha PM-2800 console at monitors and PM-1800 at FOH. The recording room runs Euphonix System 5B and Pyramix 56-track workstations, as well as a Nuendo system provided by AMD. Surround mixing and editing are done on Pro Tools Version 5, with the A/V option for video reference."

Taping a show falls under one of two basic outlines, says Hough. "Foo Fighters, for example, are a large traveling group with multiple semis. They are self-contained and provide all the monitors, mics, stage gear and front-of-house board. We take the feed through the Euphonix into Pyramix and Nuendo. We were very open to having their house engineer, Bryan Worthen, for the post-production mix. They have interesting mics built into their drum set—an NS-10 driver in front of the kick, which is great for hitting the subwoofer.

"The other situation is a smaller band or a local band. In some cases, their gear goes to the next gig. They come to us with rented backline gear, and we use our front-of-house board, our mics and our monitor desk, and it works very well.

"The show runs almost in real time, and one of the easy things is that after soundcheck and supper, the show runs straight through. I have moving faders in front of me, and when we did Foo Fighters, though we have automation, they did most of their own dynamics.

"We overdub once in a blue moon, when, in post-production, a

bass player may say, 'Can you punch me in on this note?' The exception is when we let the artist have total control, like Pat Metheny—his engineer, Rob Eaton, was there for the taping, and the bass player has a full studio, so he spent the day in Pro Tools at his studio and sent it to Rob in New York to mix at their expense. My preference is for them to come to our space. Bryan, FOH for the Foo Fighters, came in on a weekend and knocked it out in half a day with no overdubs. We don't get into polishing the cannonball. If a wrong note is played, more than likely it will go on the air that way."

The time from post-production to ready-for-airing can vary, says Peterson. "We ask for input from the artist within a couple of weeks so that it is fresh in their mind. It might even be the night of the show if we need a quick turnaround. We can turn a show around in one week if we have to, which only happened once, with Coldplay. Otherwise, we go according to schedule. The producer takes a couple of days to do the initial offline: ordering the songs, talk from the stage—it's very specific. He then makes edit decisions on interviews. The director takes three days, usually, to get it down to the exact frame on every shot and the detail of which camera is shown at which time—to the frame. Editing takes two or three days, and we're still on tape, linear at this point. Except for our workflow, it doesn't affect the product and quality, but it's much more difficult to change something later, so we hope to be nonlinear this coming season. Audio takes a couple of days. If it's one band, we take two days. Two bands could take longer. It's a matter of mixing the music, sweetening and bridging between songs and audience response."

Audio director David Hough and audio supervisor Sharon Cullen

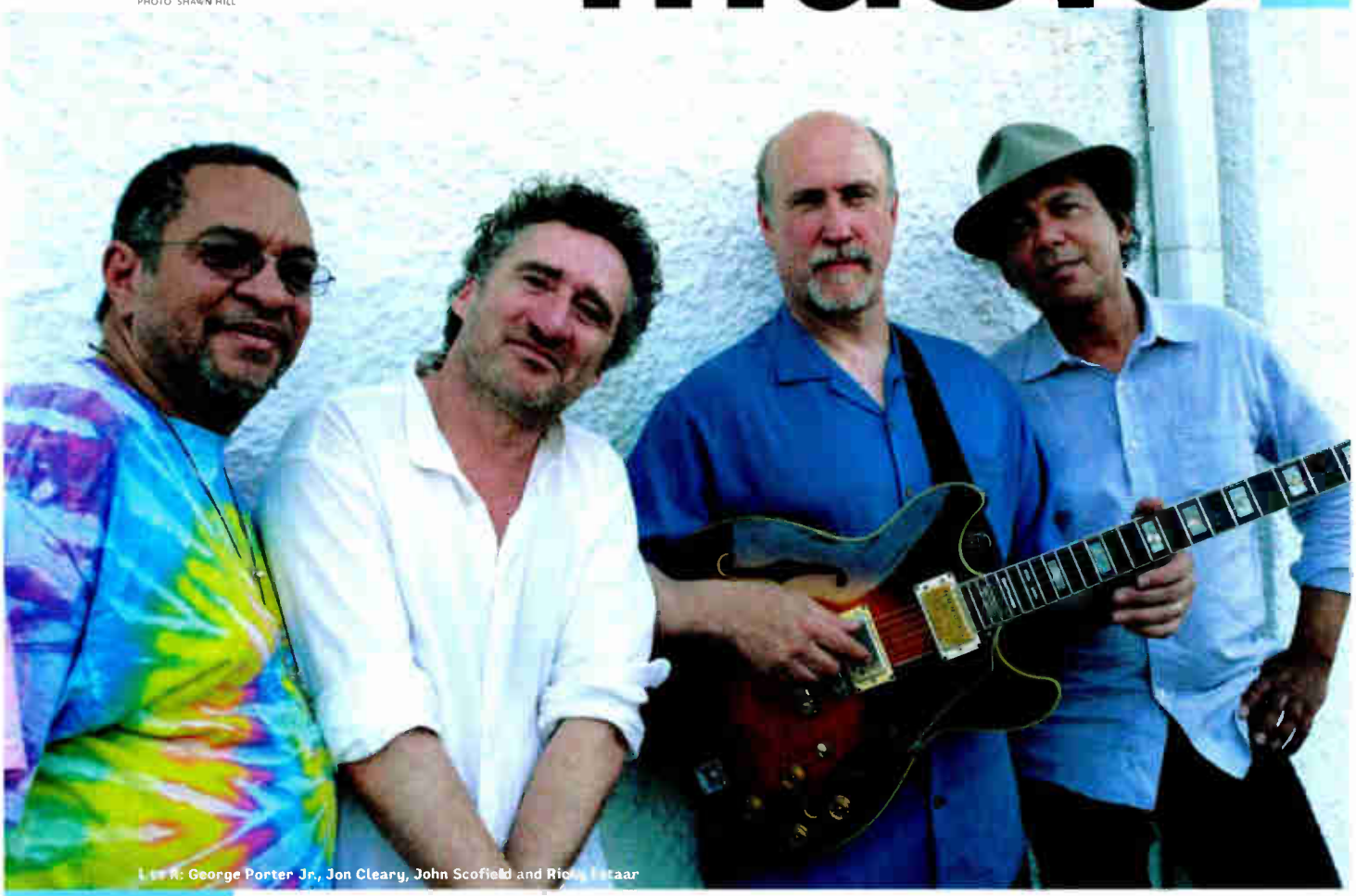
Over the years, *ACL* has seen its share of challenges. Some artists have been unhappy with their performances, only to watch the playback afterward and find that they, in fact, played a great show. Some artists are a pain to work with, plain and simple. Most commonly, however, some of them just get nervous.

"When we finally got Johnny Cash, his experience with television in Nashville was horrible, and the description was 'stop-and-go television,' doing things again," says Hough. "He finally relaxed after the second song. I see that with a lot of bands. They fall into the comfort zone. We have five or six cameras going, and one trick we use is to tape over the tally light so that they don't know which camera is on. They play to the audience and the audience gives the energy back to the band. The whole idea of the show is to give the home viewer some semblance of what the experience would be like if they were in the studio."

At the end of the day, says Lickona, all the technology in the world doesn't matter if the music isn't real: "I suppose we could tape the show in black and white with our old cameras, people would still be happy and artists would still do the show because of the way it's presented." ■

Elianne Halbersberg is a freelance writer based in Georgia.

PHOTO SHAWN HILL



L to R: George Porter Jr., Jon Cleary, John Scofield and Ricky Fataar

By Ken Micallef

John Scofield's Gospel Mission

BLUES GUITAR, SOULFUL VOCALS ON *PIETY STREET*

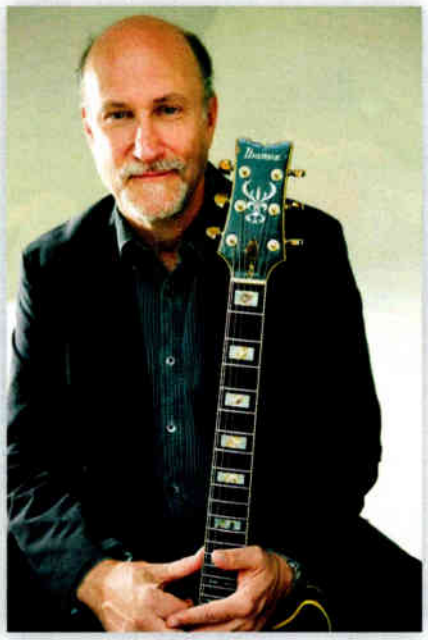
Sometimes only the Lord's music will do.

When jazz guitarist extraordinaire John Scofield rolled into New Orleans in early September 2008 to record his latest album, the Big Easy had a surprise for him. Arriving the day after Hurricane Gustav had smacked down on the city, Scofield, accompanied by engineer James Farber, and his recording band—Jon Cleary (piano, keyboards, vocals), The Meters' George Porter Jr. (bass), Ricky Fataar (drums), John Boutté (vocals) and Shannon Powell (percussion)—met at a studio located in New Orleans' Bywater district, part of the Katrina-drenched Lower Ninth Ward. The city had been evacuated, so not a soul was in sight, not even the FedEx man, whose truck held Scofield's custom-ordered Vox AC 30 amplifiers.

"New Orleans was a ghost town," Scofield recalls from Katonah, N.Y. "We couldn't get in our hotel, the city was flooded. And then we found out my amps were delayed, so we scoured New Orleans to find replacements. I ended up using a Matchless DC-30 and a Vox AC 30 with my [1981] Ibanez AS200. It was crazy getting everything together, but we did it."

Perhaps observing the belief that trials and tribulations ultimately strength-

en one's faith, Scofield and company recorded an album of classic gospel material in New Orleans, and its title couldn't be more fitting. Named for the tracking studio, *Piety Street* (Emarcy) features such inspirational gospel odes as "Sometimes I Feel Like a Motherless Child," "I'll Fly Away" and "The Angel of Death," each track spirited by Fataar's mighty backbeats and Scofield's warm tone and searing solos.



Scofield with his Ibanez AS200

"It was going to be a blues record originally," Scofield says, "but there are a zillion blues guys out there playing the classic 12-bar blues form. But I've listened to a lot of old black gospel music. I've been a fan for years. There is so much great gospel material I thought we could make a whole record of it and I could play the blues over that. The soul aspect is what I was going for. That is a different thing to play. I used my same guitar; I just bent the strings a little more."

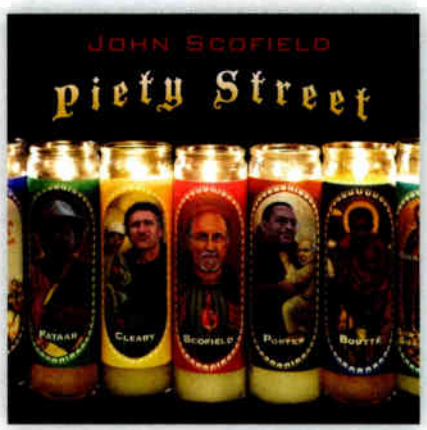
Scofield often records at New York's Avatar Studios (formerly Power Station), so he asked James Farber—a one-time Power Station staff engineer who still works at Avatar every chance he gets, and who has recorded about a dozen albums for Scofield—to join him at Piety Street Recording. One of the top jazz engineers working today, Farber's resume includes recordings by Joe Lovano, Dave Holland, Brad Mehldau, Joshua Redman, Paul Motian and others. But unlike some freelance engineers, Farber doesn't carry an anvil case full of select microphones wherever he goes. Instead, Farber prefers to roll with the flow.

"I don't own any of my own equipment," Farber explains. "I am dependent completely on what the studio has, and I like the challenge of using different mics. Every record should be different, reflecting that moment of that group in that room and with whatever was available. I do have my first choices in microphones, and my records come out sounding like they're mine because I have some kind of sensibility that I listen with. But unlike making pop records where the result is the imagination of the engineer, producer and artist creating a sound, I am trying to present the sound of the band in its natural state. In a way, it's harder, but I am not trying to invent something; I'm more trying to capture something."

While the band rehearsed and cut basic demos (guitar, drums and percussion in Piety Street's three iso booths; keyboards, bass and vocals in the main room), Farber conferred with studio owner (and the album's co-producer with Scofield) Mark Bingham about the choice of microphones and associated gear.

"Piety Street had so many mics I had never heard of," Farber says. "Mark and I put our heads together as to what would work best for the session. And because I am not an SSL guy—to be honest, I do everything I can on Neves and preferably *old* Neves—I was a little bit leery of the studio's SSL console. Fortunately, Mark had an amazing amount of outboard mic preamps. He has 20 Neve [33135/33114] broadcast channel pre's and other outboard pre's so we didn't use a single preamp from the SSL board. It was basically used for monitoring.

"It's just a bigger sound," Farber says of Neves in general. "A more natural, musical sound for



me since I primarily make jazz records. The rock guys prefer SSL for its focus and forwardness, but I find acoustic music just blends together a lot better on Neves. We mixed on a Neve VR at Avatar, as well. Compared to the monitor mixes I took from the tracking session, as soon as I put up the faders, it sounded twice as big."

continued on page 40

Franz Ferdinand

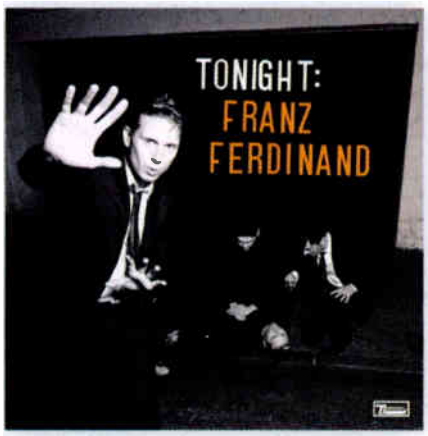
SCOTTISH ROCKERS GET LOST IN THE MUSIC

By Chris J. Walker

L to R: Alex Kapranos, Paul Thomson, Robert Hardy and Nick McCarthy

Franz Ferdinand has developed a reputation for assaulting the senses with jagged guitars, adrenaline-fueled rhythms and rallying call-to-arms vocals. Yet there's an experimental aspect to the Glasgow, Scotland–based band that transcends their 2004 hit, "Take Me Out." *Tonight: Franz Ferdinand*, their third release, shows new sides of the group while maintaining their raw core.

"We took our time—about a year-and-a-half—to make this record," Alex Kapranos, lead guitarist and vocalist, says from Las Vegas while on a promotional tour. "They do all seem different because as we've gone on, we've become more involved in the production and creation of



a sound. Also, we wanted to evolve and create a new sonic identity for the record. The previous ones were really upbeat; especially the last one was about 140 bpms. We really pulled the tempo back for this one to between 95 to 110." Joining Kapranos in the quartet are guitarist/keyboardist Nick McCarthy, bass player Bob Hardy and drummer Paul Thomson.

The foundation for the band's growth was finding an ideal location for rehearsing and tracking. Kapranos recalls, "About February of 2007, we found this old empty building in Glasgow that used to be a town hall and later a drug-rehabilitation unit. It was an unusual and challenging space, and a lot of fun because it was such a sprawling building with a lot of different rooms and acoustic qualities." Those sonic characteristics encouraged the group to jam for hours and "get lost in the music," Kapranos says, drawing the ire of neighbors. In response, the band boarded up windows in the main room, which Kapranos believes also affected the album's sound and vibe.

The group dubbed the building "The Chateau" and found it extremely conducive to experimentation, from employing high-fidelity equipment and techniques to simply grabbing direct sounds. A good example of the latter was tracking in a room with a concrete floor, brick walls and iron girders. "That room sounded totally fantastic for rocking out," Kapranos comments, "and for a few of the songs, we would just put out a single microphone or a stereo set in front of the band with the bass, drums and amplifiers really close together—then just play." Conversely, another room had hanging fabric and a thick carpet for a more muted sound.

Engineer Paul Savage worked with the band initially, and at the beginning of 2008, Kapranos and McCarthy met producer Dan Carey and began collaborating with him. Carey, best known as a producer of dance music—Kylie Minogue, Sia, Fatboy Slim—brought his own engineer, Alexis Smith, to work with Savage. Asked about the general approach to recording the basics on *Tonight: Franz Ferdinand*, Carey says, "We wanted to commit to things as we recorded, so we decided not to record anything 'flat,' with a view to processing later on in the mix. We never took DI signals of guitars, and we were extreme with amp settings. We decided it was more important to capture the intensity than it was to get a perfect sound."

Carey and the engineers tracked on the producer's RADAR system, using Shadow Hills preamps and comps, along with a Skibbe Electronics 5-9c "Red Stripe" all-tube compressor that Kapranos says he really liked for vocals. Mics included some well-known and more obscure models, including Wunder Audio CM7s (vocals and toms), early '60s Russian-made Lomo 19as (drum kit, guitar amps), Coles 4038 and 4040 (guitar), Sennheiser 441 (vocals) and 421 (guitar), Shure SM7 (snare), Electro-Voice RE20 (snare), Royer 121 (bass) and a Yamaha on kick drum. Everything went through the band's vintage Flickinger board, renowned for being favored by RB artist/producers such as Sly Stone, George Clinton and the late Ike Turner. Kapranos bought the board in Chicago a while ago and had it refurbished in Seattle by engineer/producer/musician Phil Taylor.

Carey usually does his own mixing top to bottom; however, for this album he and the band opted to bring in some new perspectives. "With this record," Carey says, "I became pretty attached to certain ideas. This was good for some tracks, but being so close to it, it was great when we sent things to Mike Fraser [in Vancouver] and Tom Elmhirst [in London]. The tracks sounded fresh when they came back."

Most importantly, though, Franz Ferdinand's dynamic energy was retained. Carey notes, "Sonically, there are a few tensions in the band, which is key to their sound. For example, when Alex and Nick play rhythm guitar, they play with very different styles. If Alex is playing with very regular down strokes like a hi-hat rhythm, Nick will balance that by playing much more crazy and loose."

Kapranos was especially excited about how "Send Him Away" came out. "Whenever I hear it, I can really picture the four of us performing in the room together and it's a magical moment." III

CLASSIC TRACKS

L to R: John Fogerty, Doug Clifford, Tom Fogerty and Stu Cook

Creedence Clearwater Revival

"FORTUNATE SON"

By Matt Hurwitz

The year 1969 was a hot one for Creedence Clearwater Revival. The San Francisco Bay Area group had burst onto the scene the summer before with its self-titled LP, and followed up with *three* more albums the next year: *Bayou Country* (featuring the huge hit "Proud Mary," which placed CCR on the road to success), *Green River* and *Willy and the Poor Boys*. The group was in its prime.

Creedence had been recorded by Walt Payne at Coast Recorders in San Francisco, and *Bayou* by Hank McGill at RCA Studios in L.A. But *Green River* brought CCR to a new San Francisco studio, Wally Heider Recording (now Hyde Street Studios). Heider already had a successful studio in the heart of Hollywood—his original facility at Selma Avenue and Cahuenga Boulevard—but by the end of 1968, he had decided to expand northward to service the burgeoning recording market in the San Francisco Bay Area.

That same year, Heider hired a 27-year-old musician and self-taught engineer named Russ Gary, though that was not Gary's introduction to the studio. Three years prior, Gary's Long Beach band, Lloyd Terry & The Victors, had done a session at the L.A. facility. "Wally himself was the engineer," Gary recalls. Gary had actually begun recording in his own garage, like many budding engineers. "I started getting pretty good and getting more little pieces of homemade equipment. I never had any equalization, but I did buy a few good microphones." Not long after, he got a job (working for free) in Santa Ana, Calif., with former Gold Star mixer George Fernandez at his studio, United Audio Recording. Eventually, Gary made his way to Heider's place, working as a second engineer alongside such mixers as Bones Howe and Chuck Britz on records for such artists as the Fifth Dimension, The Association and Waylon Jennings.

By late 1968, Heider was ready to staff his new Bay Area facility, which was to have been headed by staff engineer Rik Pekkonen. When Pekkonen declined to relocate, Gary volunteered to go, working under his old boss George Fernandez. "I did what I could to help get the place wired, helping Frank DeMedio get the place ready," Gary says. DeMedio was a key player in the design of the studio; he and Heider were alumni of Bill Putnam's United/Western Studios (now Ocean Way). Within a few months, however, Fernandez and Heider parted ways, and Gary was promoted to full recording engineer.

Though he recorded a few smaller bands, a month after his promotion, in March 1969, Gary and the studio had a visit from John Fogerty, who gave the facility the once-over and booked a demo session. "I guess he wanted to see if I, and the studio, made the grade," says Gary.

The engineer was more than happy to be recording Fogerty's brand of swampy rock. "I'm a Southern boy," says the native Virginian. "I'm

Russ Gary in Wally Heider's Studio C, 1969

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a countrified rock 'n' roller. I was right at home. Those guys played the music I really liked."

The single three-hour session resulted in two instrumental recordings, "Glory Be" and "Briar Patch." "I did a quick mix, and they took off, and I didn't know if I'd see them again," he says. But shortly thereafter, the group booked time and recorded a pair of tracks for their next single, "Green River" and "Commotion," followed, after a brief break, by sessions for the remainder of the *Green River* album.

Green River was a huge hit, making it to the top of charts, with "Bad Moon Rising," "Lodi" and the title track leaving their marks. Shortly after release, it was back to Heider's to record *Willy and the Poor Boys*. Released in November 1969, the album reached Number 3 on the *Billboard* Pop Albums chart, as did its catchy lead track single, "Down on the Corner."

But it was "Fortunate Son," which peaked at Number 14, that truly captured some of the intense emotions of the times. The song became an anthem for countless young people of the era, resentful of the Vietnam War and of the further injustices between classes—it's told from the perspective of a young man who doesn't have the connections to stay out of the military.

"Fortunate Son," like the rest of the album, was recorded in a manner Gary and producer Fogerty had nailed down during the previous album's sessions, cementing the Creedence sound for good. "In my opinion," Gary says, "*Willy and the Poor Boys* is the most consistent album, technically, of all of them. As a friend of mine says who has mastered the album, they just ran it."

The first part of the process, of course, was rehearsing. "More than anybody else, they had the tunes together when they came over," Gary notes. "They rehearsed every day. Then, when they came to record, they had it. We had albums done in two-and-a-half weeks."

The bandmembers lived in the East Bay and they rehearsed in an industrial area of Berkeley in a large industrial building that drummer Doug Clifford nicknamed "Cosmo's Factory." (It's the rehearsal area of that 22,000-square-foot building that is pictured on the cover of the album that bears that name.) The building later became home to a studio, DSR, which Gary created along with Clifford and CCR bassist Stu Cook.

Fogerty also rehearsed at home, with a small recording system Gary had helped assemble. "I'm sure he even rehearsed the tape delays because he had machines that had the same head gap as the Ampex recorders at Heider," Gary says.

Once ready, the group assembled across the

PHOTO: BASIL PAPIK

Outtake from the *Willy and the Poor Boys* cover session. L to R: John Fogerty, Stu Cook, Doug Clifford and Tom Fogerty.

Bay in Studio C at Heider's—their home, with rare exception, for the remainder of their recording career. "That was a good room," Gary recalls. "You could put a lot of instruments in there and you didn't have to worry about baffling."

Gary set up his mics in a consistent manner, one that Fogerty took to immediately from the first "Green River" session. "He came in, I got everything miked up and listened to them play a little bit, then John came into the booth and we went through it. My approach was not to add any EQ; just bring it up and go from there."

The main workhorse mic for Gary's Creedence sessions was the Shure SM56, which was applied to nearly every instrument and, on one occasion only—the "Green River" single—to Fogerty's vocal. "Those were nice mics," the engineer notes, "because they had a natural peak at around 2k or 4k. I don't know why, but that mic made instruments sparkle a little bit without funny EQ."

Gary placed an SM56 on both Fogerty's guitar amp (alternately a Kustom or tweaked Fender Vibrolux) and on brother Tom Fogerty's Kustom. "I'd use close-miking—not directly in the center of the cone, but off, just so it wouldn't be so trebly," he says. Cook's bass was recorded direct and with an SM56 on the speaker cabinet.

Each piece of Clifford's Camco drum kit was also miked with an SM56, though the snare required a second mic, a Sony C37 condenser. "Doug used a *big* Camco snare. It was a big wooden snare, and the rattles were so far down below that the mics could barely hear it. By the time we got to *Cosmo's Factory*, I did start putting an SM56 underneath the snare to get some more of the rattles in." At Fogerty's request, the snare was recorded through one of Heider's echo chamber returns—from Chamber 4, Gary's favorite. "I printed the return right in with the snare," he says. "If we wanted something and we knew it was right, we'd do it."

Another unique part of the CCR drum sound was Clifford's large-diameter hi-hat. "That was an 18-inch hi-hat," Gary says. "I've never recorded anyone who used cymbals that large. And if you hear Doug and Stu play with their band today, you can really tell that identifying sound between those guys." Gary placed a Sony C37A on the crash and a U87 on the ride. Another U87 was placed about six feet behind the drum kit for ambience. "When you're close-miking, everything sounds real up-front. Not only did the room mic capture ambience from the drums, it captured some of the other instruments, as well."

The mics led to the Frank DeMedio custom-built recording console. "That thing was built like a tank," Gary recalls. "It was just a beautifully made board. The harnesses were like the Golden Gate Bridge, it was made so well." The desk was built with Universal Audio components, including UA 550 rackmount equalizer/filter sets normaled to the first eight faders, but otherwise very little EQ was available on the console. "It had some 5k and some 10k and a little something around 100, and then maybe 50," a situation both Gary and Fogerty were quite comfortable with. Outboard Lang and Pultec equalizers were available, but rarely used. "When I was recording in my garage, I never had any EQ. I just kind of moved the mics around to get what I was after. So I had that same mindset when I recorded at Heider's. John worked hard to get the source that the microphones heard sounding really good, so he liked it, as well. There was not a lot of EQ on Creedence music. You just put good microphones out there and put them in the right spot."

The desk was 24-in, 8-out. "Sixteen-channel machines had not arrived when that console was built, but it was just around the corner, and Frank knew it," Gary says. With the arrival of 16-track in 1969, additional inputs were simply multed into buses 1 through 8.

For Gary's first Creedence album, tracks 1 through 8 comprised the rhythm tracks, which were recorded onto a 3M 8-track machine. That

was then transferred to 2-inch tape on a 16-track machine to allow for the addition of overdubs. By the time of *Willy and the Poor Boys* and "Fortunate Son," however, the studio had switched to recording the rhythm track directly to one of the early MCI 16-tracks, either on Ampex 401 tape or —Gary's preference—Scotch 201, which "seemed to have a sweeter, brighter top end."

After the rhythm tracks were completed by the full band, Fogerty would return to furnish his lead vocal and *all* overdubs—everything from background vocals to piano, tambourines, keyboards and percussion. "Most of the time, he had it in his mind," Gary says. "A few times, I could tell he was winging it, but he would hear something that he liked and adapt to it." The band would not be involved in background vocals overdubs, in fact, until *Cosmo's Factory*'s "Who'll Stop the Rain."

Gary says that Fogerty was also adept at punch-ins. "He knew how to do it, and you could never tell they were punch-ins. But he didn't do that many with his vocals. When he sang a keeper track, he really sang it." Mixing was handled by both Gary and Fogerty together. "He was always to my left—I took things on the right, and he took things on the left. But it really wasn't too hard to mix those pieces, I must tell you. They were recorded well, and it just laid in there real nice."

As noted, Gary used very little EQ on Creedence recordings—or any other trickery for that matter. "The only EQ I used on the drums was to put a little bit of 10k, maybe 3 dB or of 10k on the ride cymbal, and that was it. It helped brighten it up ever so slightly and still kept the feel." Background vocals during recording would be recorded with the machine running just slightly slow. "It made them come back a little crisper. Not too much; otherwise, it would sound like The Chipmunks!"

But there was one signature effect that appeared on nearly every Creedence recording. "When we first worked together, John asked, 'Can you give me some slap-back?' I said, 'Yeah, sure.'" Gary had grown up on Elvis and Sun Records recordings, as had Fogerty. Gary achieved the CCR slap using a pair of Ampex 440 2-track machines and the studio's echo chambers. "During most mixing sessions, both 2-track machines would be running and I would delay the signal going to the chamber to get it slapping and bouncing around, and then there would be one to mix on."

Once Gary and Creedence started working together, they kept the same working method through five studio albums, with very little change required. "Once the pattern started," Gary says, "and once I realized the way John wanted to do it, I had it all there and ready to go." ■

john scofield | *from page 34*

Using the SSL 4064 G+ board with Digidesign Pro Tools HD 32 I/O with Apogee AD/DAs (mixed to a Studer A-820 half-inch reeling RMG900 half-inch tape at 30 ips), Farber recorded the group live, including Scofield's solos, cut at what he calls "a very loud level" in the iso booth.

"Sco's guitar is always going to sound like him," Farber says. "It's the way he plays the instrument and attacks the strings, and he's been using the same guitar forever. This was a little different than recording him on some of his jazz albums only because he was playing blues, and at quite a high volume. To walk into his booth was a little dangerous."

Running Neve 33135 mic pre's on the amps, Farber used a Shure SM57 and a CharterOak tube mic on the Matchless, and a Shure SM57 and a Coles 4038-SA ribbon for the Vox. Mic placement was "probably not off-axis," Farber tries to recall. "But I don't know how far from the amp; maybe 10 inches. I move the placement around a little bit after I hear it. They wind up in different places all the time. The mics were probably close to the middle of the speaker.

"I use two different mics on each amp for different colors. Without having to EQ anything, I can play with the balance of those four microphones and create what is the right color and tone for the individual song. I had two different colors on each amp, and each amp had a different color from the other one." Additionally, Farber placed a Blue Bottle mic in "omni" high in Scofield's isolation booth to capture ambient sound.

Farber compresses guitar while recording, "basically to contain a few things that might stick out too much, using a gentle-ish setting." Here, he had Neve 33609 compressors for the Matchless and a Daking FET II on the Vox.

A first for a Scofield album, *Piety Street*'s vocals give the music a soulful and uplifting spirit. Jon Cleary's and John Bouttè's vocals were recorded in the main room, along with piano and bass, but the piano was covered to prevent leakage, and the bass amp was out in a hallway, well-isolated from the live room. Farber ran a CharterOak tube mic through a Portico pre and an LA-2A compressor for Cleary (who favored a lot of compression). Boutte required a simpler chain—a U47 mic with a dbx 160 compressor.

In a particularly unusual production move, Scofield and Farber preferred to hard-pan the guitar and keyboards, a result of their mutual fondness for '60s jazz and R&B records.

"James and I did this before on my record *Feels Good to Me*," Scofield explains. "We separated keyboard and guitar hard-left and

hard-right and it worked really well. I like hard-panning in jazz records. It can really help to get definition on the sound."

Even then, Farber placed a bit of the Blue Bottle ambient sound in the left channel to prevent drastic isolation of the guitar. Once back at Avatar for the mix, Farber maintained the hard-panning aesthetic, thinking of it as a live performance.

"I just try to make it sound like a band," he says. "I want you to feel like you are listening to a band playing on a stage for the most part. Maybe

Engineer James Farber

a little bit of a super-extreme version of that with this record, because even if you are sitting in the front row and the piano and guitar are on the left and right, you wouldn't hear it this separate."

At Avatar, Farber mixed *Piety Street* on his favorite Neve console, using an SSL FX G 384 stereo compressor on the mix, Neve 31102 and Pultec EQP-1A EQs, and two reverbs: an EMT-140ST plate and a TC Electronic M5000 with the Gold Foil Plate setting.

"The TC Electronic reverb is what we had at Piety Street," Farber recalls. "I got used to that sound. I don't use a lot of the software reverbs; I'm a jazz guy. The mixing was really mostly balance and reverb, and the hard-panning was carried over from the rough mixes at Piety Street."

Scofield has recorded jam-band fusions, straight-ahead jazz joints, tributes to R&B masters, duets, trios and quartets with fellow master musicians, and one album where the goal was simply to be "quiet." *Piety Street* finds the 59-year-old guitarist creating yet a new rift in his sound, one borne of adversity and perhaps a little faith.

"Each time you record you learn something," Scofield says. "This was great because I had the adversity with the guitar amps, but I really like the guitar sound despite the fact that I didn't have my amps. It made me think, 'You can always compromise.' Recording is a compromise because it never sounds like it does to your ears, like the band in the room. But a lot of times it can sound better. On a good day it can sound incredible." III

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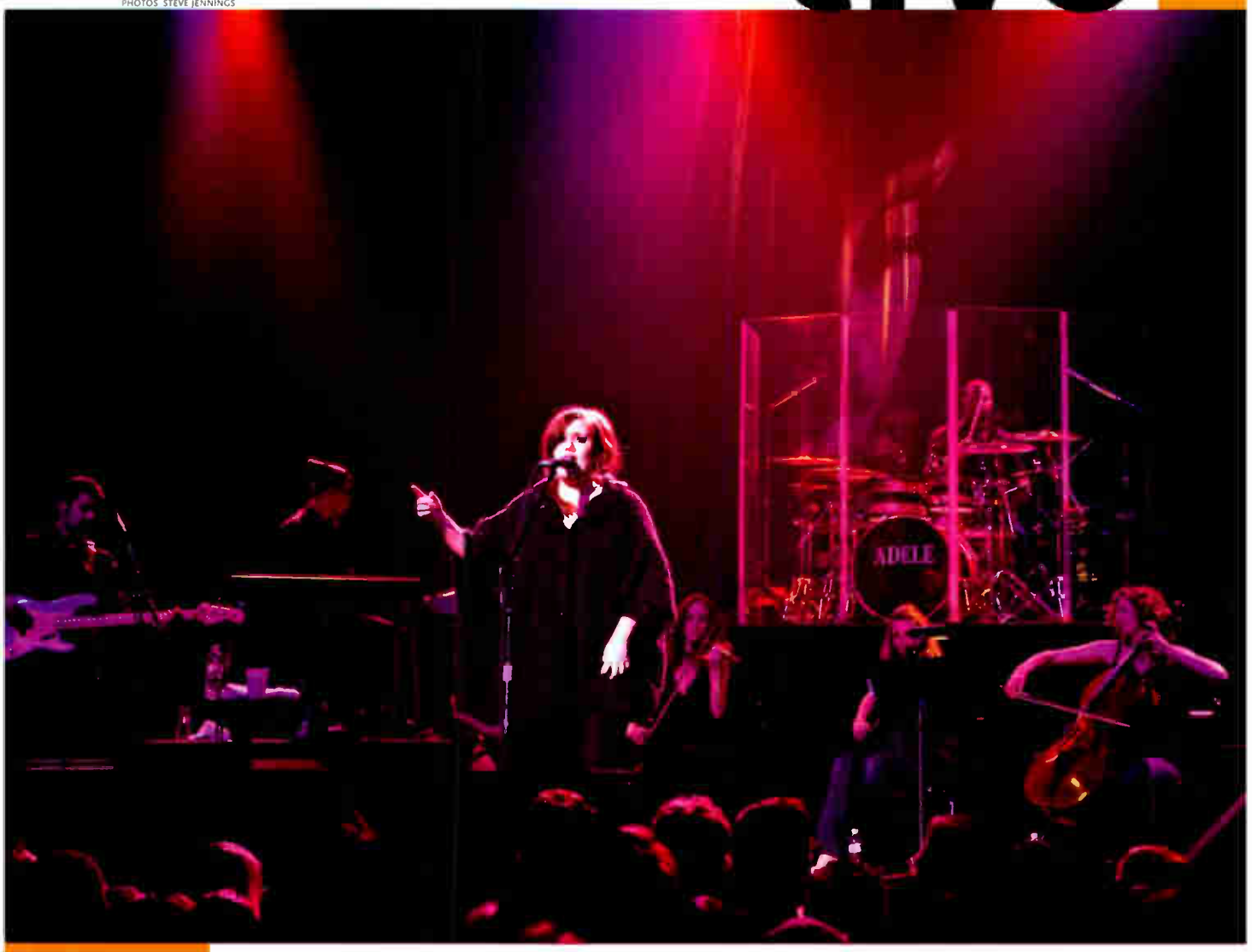

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ADELE

TOUR EXTENDED FOR 'BEST NEW ARTIST' WINNER

It's been one whirlwind of a year for Adele, the 20-year-old British singer/songwriter who caused a stir in the UK with her singles "Daydreamer" and "Chasing Pavements" before cracking the U.S. market wide open and winning two 2009 Grammy Awards for Best New Artist and Best Female Pop Vocal Performance. Upon learning of her four Grammy nominations (which also included Song of the Year and Record of the Year), the Adele camp added more U.S. appearances to her schedule.

Tour manager David "Zop" Yard explains that although Adele's sudden stardom called for higher-capacity houses than originally planned, they aimed to maintain an intimate feel. They achieved that sense of immediacy in San Francisco, where *Mix* caught Adele's sold-out performance at the 2,250-seat Warfield Theater, rescheduled to that venue because she had outgrown her originally scheduled slot at


FOH engineer David McDonald has a Zen-like personality when it comes to working with house-supplied gear.

The Fillmore.

Front-of-house engineer David McDonald—a veteran studio and live sound engineer who has worked with Portishead for the past 10 years, as well as Air and many others—and Portland, Ore.–based monitor engineer Joe Zavaglia (who has spent the past decade working for such acts as Sub Pop's Gutter Twins, Ed Harcourt and Stars of Track & Field) have navigated the changes on this tour well, despite a few less-than-desirable console encounters.

"Fortunately, we're not carrying any production," says McDonald. This allows them to travel more efficiently, but relying on house equipment, can present some unwelcome surprises. "We've been faced with some real horrors," says McDonald. "Some of the boards we've encountered just shouldn't be used."

"In some of these venues, the gear is fine for a loud rock band, but because this is such a quiet act and because there are so many in-ear mixes, you don't get the pristine clarity that you need for a girl, a voice and an acoustic guitar," adds Zavaglia. "We spent a good portion of our days tracking down buzzes and hums coming from old boards."

Luckily, The Warfield wasn't one of *those* venues; it contains a Yamaha PM5D in monitor world and a trusted Midas Heritage H3000 at FOH, an area that was relocated late last year from the venue's balcony area to the middle of the main floor. "The Midas is perfect for what we're doing," says McDonald. "You hardly have to touch the preamps. It's just there. You subtract, if anything."

For the San Francisco date, McDonald filled 44 of the Midas' 48 inputs. The engineer pairs the console's preamps and EQs with only basic outboard signal processing, including Aphex gates on the kick drum, and Summit and Drawmer compressors on the vocals, bass and acoustic guitar. For effects, McDonald uses the TC Electronic M2000 effects processor and 2290 digital delay, which are, he finds, "brilliant." Strings and acoustic guitar get a touch of reverb.

Onstage, Adele and band use primarily a Sennheiser assortment, including 900 Series mics for Ben Thomas' electric guitar and Adele's Moon acoustic. "She's got a really light touch," says Zavaglia. "So we're running both her acoustic guitar and acoustic bass through the LR Baggs Para Acoustic DI, which has a preamp section on it. I have to run the levels very hot to get a reasonable mix in her ears because of how lightly she plays."

Drummer Derrick Wright's kit is miked with an e901 for the kick, e904s on the toms and e614s for the hi-hat and overheads. For lead and backing vocals, the engineers vary between the e935 and a Neumann KSM 105.

"The clarity is so pure on the vocals that on a small stage, the KSM 105 will pick up the drums, a conversation over in the corner. But on a big stage, it's a glorious mic," says McDonald. "And Adele's voice is really well-matched to it." For the Warfield show, McDonald pairs the condenser mic with a Summit Audio compressor. "Adele is well-trained with the microphone," he adds. "She knows when to back off of the mic. Her voice is a very powerful; we don't have to worry about getting a level!"

Variables aside, for this show Adele's engineers could rest easy knowing that the house would receive even coverage courtesy of the recently acquired Meyer Sound system, installed by Pro Media/UltraSound of Hercules, Calif. The Warfield's system comprises left and right arrays of 10 Meyer Sound MILOs and one MILO 120 line array loudspeaker each. Low frequency is covered by four 700-HP subwoofers per side under the stage, with an additional three 700-HP center-flown to cover the upper balcony. The under balcony is covered by six Meyer Sound M1D line array loudspeakers, with two CQ-1 loudspeakers per side providing front-fill. A Galileo loudspeaker-management system handles system drive and processing. "The room sounds a little muddy from the new mix position," says McDonald. "But regardless, the MILO does the job with style."

In the Moment In Monitor World

Zavaglia, admittedly a recent convert to digital consoles, navigated a total of 45 inputs on The Warfield's Yamaha PM5D. Like McDonald, he stuck to a short list of outboard equipment. "If it's dry in the ears, it can be a little disorienting and harsh, so I'll wet it up a little bit with a short plate reverb," he says. "That definitely helps her feel more at home, not so closed in. I use some compression to keep her vocal level in a good place, because when she's in the moment she can peak out that transmitter if I don't keep an eye on it!"

Keyboardists Selan Learner and Miles Robertson, and drummer Wright all use Shure P4HW hardwire packs, while Adele listens through a Sennheiser wireless EW300G2 system. Guitarist Thomas and bass player Tom Driessler listen through wedges. Adele, however, also has a set of wedges nearby. "Adele has to take her ears in and out throughout the show," says Zavaglia. "She listens to the house a lot, which is a great habit, especially for a young singer. You can watch her: Sometimes it's in, sometimes it's out. I also have a couple of ambient mics up for her in between songs so she can banter with the audience without taking her ears out too much."

When *Mix* caught the show, Adele was bantering with the crowd, bubbling over with excitement and seeming genuinely ecstatic that more than 2,000 people would show up just to hear her sing. She even took a photo of the audience for her MySpace page. But when it came down to business, that youthful exuberance took a backseat to an ageless voice with a richness that's rarely found in young artists. And, apparently, she's got ears to match. "The thing about Adele, her hearing and attention to detail are really sharp," says McDonald. Zavaglia adds that she can hear the difference between desks. "She knows exactly what she wants. For someone who hasn't been kicking around for years and years, she's a total professional." III

Heather Johnson is a San Francisco–based writer.


Monitor engineer Joe Zavaglia keeps his outboard gear list slim and trim.

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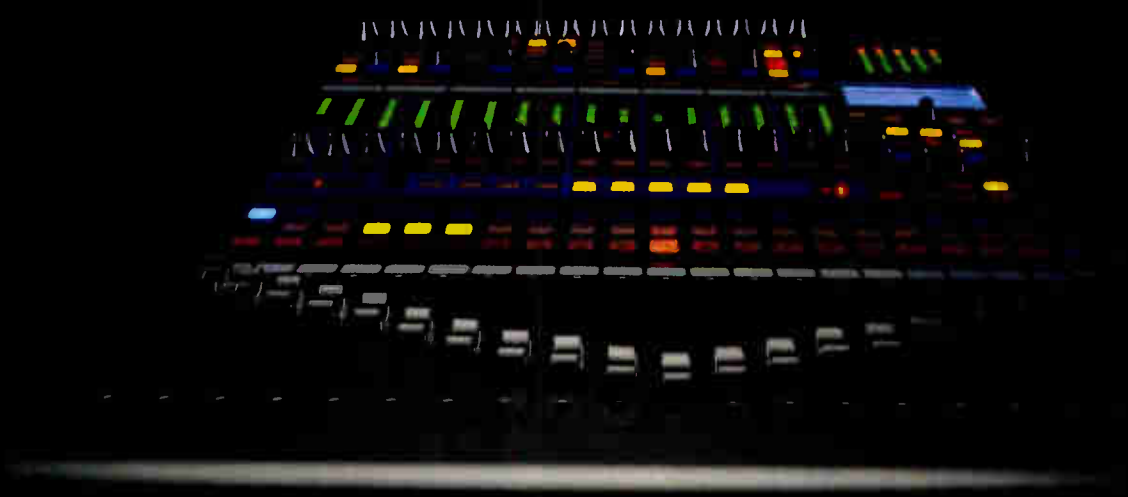

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SOUNDCHECK

Jars of Clay

Matthew Peskie

PHOTO: SCOTT CUNNINGHAM

LMG Touring (Orlando, Fla.) provided the entire stage audio package for Jars of Clay's The Love Came Down tour throughout December 2008. Matthew Peskie, production manager/front-of-house engineer for the band, previously worked with the sound provider as the audio vendor on Avril Lavigne's The Best Damn Tour.

"From the beginning, LMG has been extremely supportive in providing exactly what we needed for the tour," says Peskie. "LMG's audio crew—Steve McCale, director of touring, and Jim Yakabuski, senior touring engineer—have been great to work with, especially in the prep stages of getting the gear out the door. They were there the whole way making sure everything was set up as I was envisioning it."

The audio package comprised a Digidesign VENUE system for FOH and a d&b audiotechnik Q Series P.A. There was no monitor engineer for this tour as the band is endorsed by Aviom and used a combination of rackmount mixers into IEM transmitters and stage mixers.

The band was mixed with Sennheiser mics—another endorsement deal. Sennheiser gear included four channels of ew300 IEM units for in-ears and two channels of ew550 to receive signal information from the SKM935 mics. Other mics included 935, 604, 609, 902, 614 and 409 models.

tour log

After 15 years of not being on the road, singer/songwriter and poet Leonard Cohen (pictured) is hitting the ground running on a world tour. Montreal-based Solotech is providing support, spec'ing a Meyer Sound MILO and MICA line array system. *Mix* caught up with Cohen's front-of-house engineer, Mark Vreeken.

How much gear are you carrying?

We have the same consoles, mics and drive along for every show. We're getting wedges and P.A. from Oceania out of Melbourne and Auckland. We carry a Meyer rig from Solotech in Europe and North America.

What is the most important piece of gear for this tour?

It would have to be his vocal mic. He's happy with it and it sounds great.

What is your mixing style for Cohen?

Trying to get every word out there with good tone is Number One. The band mix can also be pretty big because the

arrangements are so tight. It all revolves around the vocal, but every one of the musicians gets their chance to shine. It's a fun band to mix.

What has been the most difficult part of this tour from an audio perspective?

The biggest challenge is minimizing the sound of the P.A. at Leonard's position onstage while still maintaining what we want in the house. We've been lucky that most of the venues have been fairly good and the crew is excellent. As far as broken gear, I think everything we use is built to fail at some point, and that keeps us on our toes.

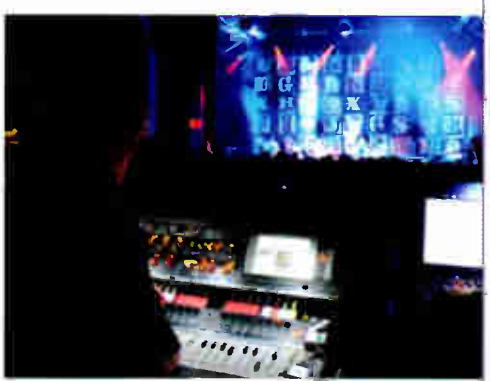
Where can we find you when you're not on the road?

At home enjoying my family. It's the best.

fix it

Steve Pattison, FOH engineer for AlphaBeatneer

We arrived at a venue in Norway and there was minimal crew and a tricky spiral staircase load in, so we only brought in Ben [Booker's] monitor system. I set up my channels on his [Allen & Heath iLive] surface's C and D layers, recalled my channel presets from a USB key and loaded in a couple of my favorite effects. We ran a network cable to FOH, and I operated Ben's desk from my laptop using the iLive Editor software. Two operators, one desk, and no one spat their dummy! I didn't have any busy messages, and Ben didn't even notice I was doing stuff because I was on a different layer, I was tweaking my stereo mix while he was tweaking another.



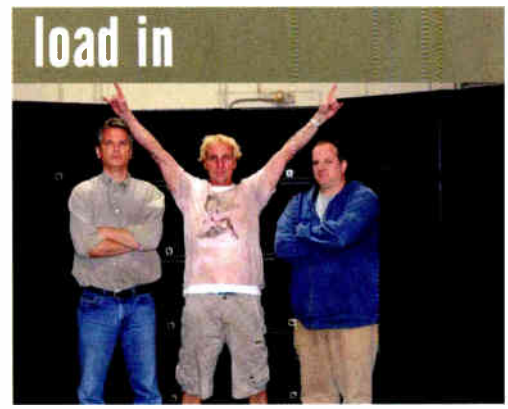
Party House Gets Upgrade

Popular New York City club Santos Party House now features an advanced sound system designed and integrated by TimbreTech Audio Services, and based around a Soundcraft Vi6 board at FOH that is easily locked off and run remotely via a laptop in the DJ booth. The board was spec'd by Jim Toth. At monitors is a Soundcraft Vi4 running six JBL SRX 712M 12-inch wedges powered by Crown XTI 6000 Series amps. The P.A. comprises JBL VerTec VT4887DP Series line array elements with VT4880 subs. Toth's use of the loudspeakers allowed him to set the level and EQ of each cabinet individually, a requirement as the room hosts DJ/club and live performances, as well as other events.

The dance system sees a 24-foot horizontal array of custom-designed speakers that span the length of the room and deliver even coverage. Each five-way features 24-inch and 15-inch drivers in a line spaced with minimal interference or cone filtering; bass is supplied by the same JBL VerTec VT4888 subs. Power is via Crown I-Tech 4000/8000 amps with built-in DSP.

"The coverage of this system is amazing. It has power, consistency and control that helps set the personality of the club," says Ron Castellano, owner of the club. "There is nothing raw about it; instead, it's very hi-fi and sophisticated, but there's massive power there if the DJ needs to accelerate!"

load in



Rat Sound's Dave Rat (center) is quite pleased to have joined L-Acoustics' K1/KUDO Pilot Program with the delivery of 48 K1 enclosures, 16 K1-SB subs, 16 LA-RAK touring racks with LA8 controllers and 24 SB28 subs; also pictured is L-Acoustics' Paul Freudenberg (left) and Rat Sound's Jon Monson.

Kanye West toured with an **AKG** WMS 4000 wireless system and IVM 4 in-ear monitoring system. . London-based **InSync Productions** recently brought in **Martin Audio** line array, subs and stage monitors for an all-star party in the Dorchester Hotel's ballroom...**The Pogues** relied on a **Midas** PRO6 Live Audio System at FOH (from **HD Pro Audio**) for their annual Christmas tour...**Frank Locklear**, A/V specialist for dB **Audio & Video**, spec'd **Danley** loudspeakers for the new sound system at **Meredith College's** (Raleigh, N.C.) Jones Auditorium...**Produce It Now Inc.** (a special events design/production company serving the Washington, D.C., area) added to its **WorxAudio Technologies** loudspeaker systems with two TrueLine M80X2-P systems and two TL215S-P subs.

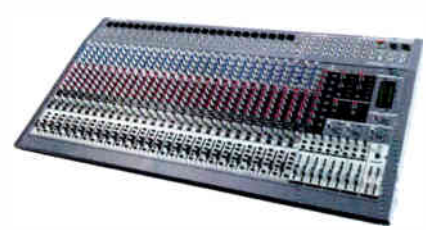
road-worthy gear

EAW Expands MicroWedge Line IEMs

EAW is shipping the MicroWedge MW15 stage monitor, developed by Rat Sound. Its coaxial driver pairs a 15-inch woofer with a 3-inch diaphragm compression driver on a 90-degree horn in a low-profile footprint. Features include switchable active or passive modes, and a large port that houses the input connectors, protecting them from damage. The trapezoidal Baltic Birch enclosures allow placing wedges in tight "arc" configurations, and integral rigging hardware enables flying when desired.
www.eaw.com.

Line 6 X2 XDR955 Handheld Wireless

The Line 6 X2™ XDR955 digital handheld mic system ($899 list) includes a cardioid transmitter and rackmount receiver with 10-20k Hz response, 24-bit A/D conversion and compression-free operation for a dynamic range exceeding 115 dB. Its dual-RF anti-jam broadcasts dual signals to four receivers that work simultaneously to avoid signal dropouts. Plus, the system uses a proprietary digital datastream that only recognizes signals embedded with a unique digital signature.
www.line6.com



Behringer SX3282FX

Designed for studio or live applications, this low-noise design, 32-input, 8-bus studio/live mixer features XENYX mic preamps, British-style EQs and two 24-bit onboard digital effects processors. Stereo input channels have 4-band EQ; mono inputs have 3-band EQs with semi-parametric mid-band. There are eight aux sends per channel; four are pre/post-fader-switchable for flexible routing and an internal auto-range (100 to 240VAC) power supply adds maximum flexibility.
www.behringer.com

ALL ACCESS

Photos and text by Steve Jennings

katy perry

Skyrocketing to the top of the pop world with her smash debut single, "I Kissed a Girl," off the *One of the Boys* album (2008), Katy Perry is enthralling fans across the States, including the star-studded audience at this year's Grammy Awards. *Mix* caught up with the songstress, band and giant inflatable fruit onstage at San Francisco's Fillmore.

Perry sings through a Shure SM58 handheld wireless mic.

Both front-of-house engineer Fern Alvarez Jr. (who is also production manager) and monitor engineer Dave "Supa" Rupsch are working on Digidesign Profile consoles. For effects, Alvarez relies on a Bomb Factory BF76 compressor and a Franklin d2 EQ for Perry's vocals; Smack on background vocals; Purple Audio comp for bass guitar; Joemeek comp for acoustics; ReVibe reverb on Perry and background vocals; and Reverb one for all instruments.

"We're using house P.A. systems; otherwise, we are using Clair Global as our audio provider," Alvarez says. "I normally use the i4 P.A. with i4Bs and S4 subs.

"It's been awhile since I have toured with an artist who has so much excitement in providing her audience the best show every night," he continues. "Katy has a vision that very few really ever see or even want to approach if handed the opportunity. Her band is a great pleasure to mix. Their inputs are very consistent, and I'm actually starting to take them for granted and forget how easy the show is."

Guitarist/keyboardist Korel Tunador (left) uses Matchless guitar amplifiers with Shure SM57 and Shure KSM27 mics. His keyboard rig starts with an M-Audio Pro Keys 88 via MIOI into a rack with two Muse Receptors.

Stage-left guitarist Patrick Matera (above right) uses Swart Guitar amplifiers (bottom left) with Shure SM57 and KSM27 mics. Bassist Josh Moreau (left) uses an Ashdown EVO bass amplifier and Ampeg 8x10 bass cabinet. According to guitar/bass/keyboard tech Doug Redler, "We actually do not mike Josh's amp. We take the DI straight out of his SansAmp. He is an outstanding bass player with an amazing ear and a great tone coming off of his hands. Any additional link in that chain I feel would only dilute what is happening there."

Perry plays through a Swart Amp with a Swart AST-II head and single 12-inch cab.

Stage manager/drum tech Bobby Sepulveda (above) says Adam Marcello's kit is miked with Shure 91 (inside kick), Beta 52 (outside kick), SM57 (snare top), KSM 137s (snare bottom, hi-hat, ride), SM57 (snare two), KSM32s (overheads) and Beyer Opus 88 (toms).

According to monitor engineer Dave "Supa" Rupsch, "It is not a very plug-in-intensive setup. I use Impact for kick and snare compression, and Bomb Factory compressors for bass DI and Katy's acoustic. As for backing vocals, good-old Smack does the job with some mild compression. On Katy's vocals, I am just using the basic onboard compressor to balance out her vast dynamic range in her in-ears [Ultimate Ears UE-7 ambients; translucent-pink with a strawberry on the side]. On all the in-ear mix outputs, I am using the Focusrite 6-band parametric EQ and a limiter; on the band I use UE-7 Pros, non-ambient. Katy likes reverb in her ears; for that, I use the ReVibe plug-in with a medium hall 'verb return: 2.5-second decay time, 28ms pre-delay."

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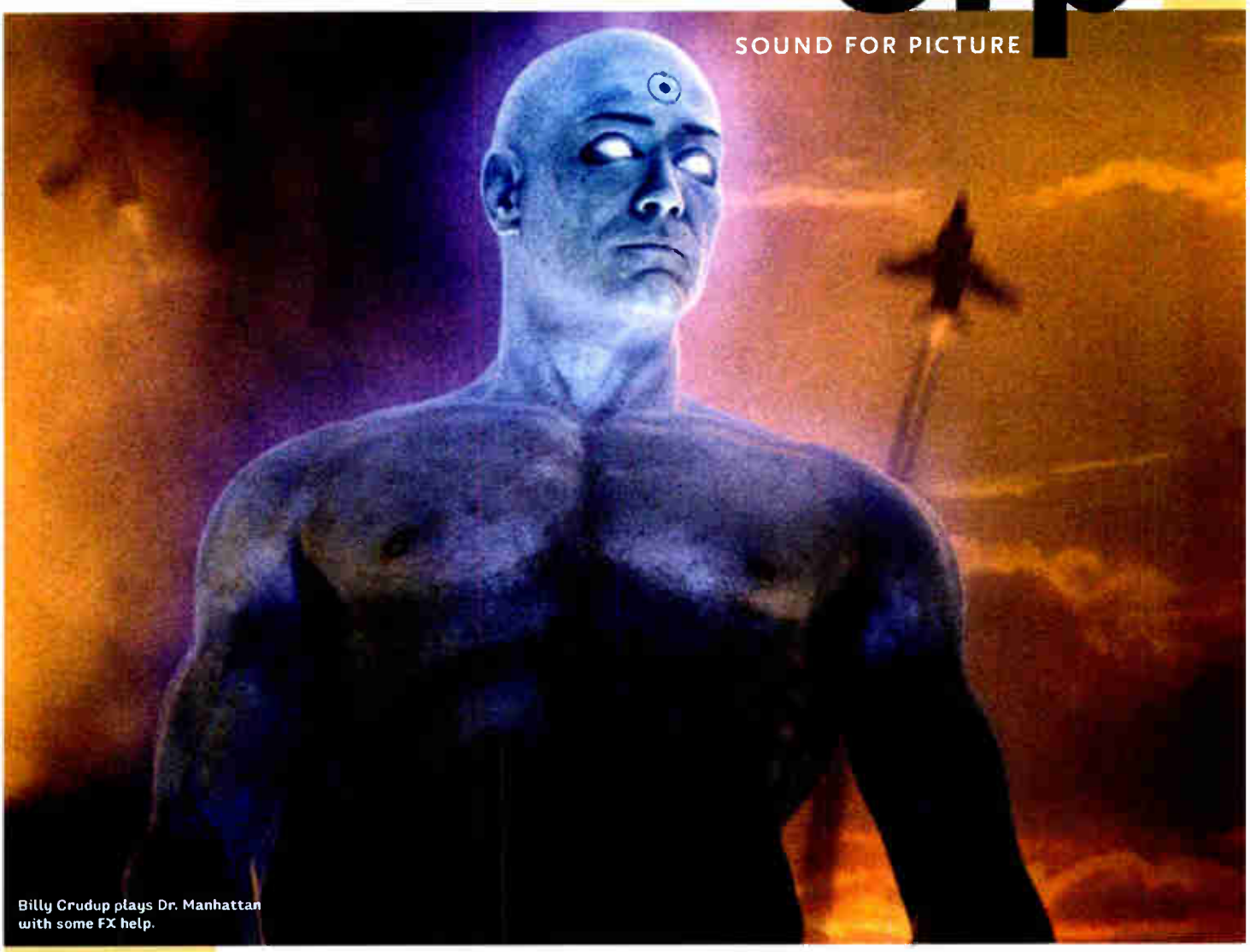

Billy Crudup plays Dr. Manhattan with some FX help.

By Blair Jackson

'Watchmen'

BIZARRE GRAPHIC NOVEL SPRINGS TO LIFE

Watchmen is not your typical superhero film. Yes, it comes from the DC Comics stable—it was originally published as a 12-comic series by writer Alan Moore and artist Dave Gibbons in 1986 and '87, then collected into a highly successful, award-winning graphic novel. But the "superheroes" aren't the sort of band of crusading do-gooders with unusual powers you'd find in the Justice League of America, the Legion of Superheroes or even the X-Men. Indeed, in the alternate-reality 1985 America of *Watchmen*—where world events didn't transpire as *we* remember them—the costumed vigilante heroes are mostly retired and powerless, so when they become the targets of a plot to discredit and kill them all, they have to use their wits and ingenuity to defeat the evil forces that are threatening them and seeking to start a nuclear war between the U.S. and the Soviet Union. That's an extremely simplistic explanation

of what is actually a *very* complex and convoluted plot—a story so big that it sprawls over two hours and 40 minutes in the film (and it could've been much longer).

The film was directed by Zack Snyder, who knows a thing or two about bringing graphic novels to the screen. His previous opus was the hit 300, Frank Miller's bloody retelling of the Battle of Thermopylae between Greece and Persia. Snyder did all the storyboarding for that film himself, hewing close to the original artwork and then shooting the movie using a comics-like chroma-key technique. For *Watchmen*, Snyder again storyboarded every frame himself, capturing as much of the look and detail of the graphic novel as possible, but this time he went for a more conventional film approach—not that there's anything conventional about what's actually *in* the film. It's loaded with unusual characters—from decidedly "old-school" heroes to one major CGI-enhanced creation, Dr. Manhattan, who looks like a blue field of energy—a plethora of big action set pieces with the requisite pyrotechnics and settings that range from the mundane to the truly bizarre. (Mars, anyone?) The film required a considerable amount of visual effects work, but really a lot of its "look" comes from the intricate sets (it was shot in Vancouver) and creative lighting and cinematography.

It was an immense sound job, as well, and for that end of things Snyder tapped much of the same team he'd worked with on 300 and also his 2004 remake of *Dawn of the Dead*, including supervising sound editor Scott Hecker, sound designer Eric Norris, FX re-recording mixer Frank Montaño, and dialog and music re-recording mixer Chris Jenkins. (Montaño and Jenkins were nominated for a 2009 Oscar for their mixing work on action thriller *Wanted*). The music score was by Tyler Bates, another veteran of Snyder's earlier films. The film was mixed on a Harrison Series 12 console in Universal Studios' Alfred Hitchcock Theater.

"Zack's approach is the most liberating that any person working in sound could ask for," Hecker says during a break in the final mix, "because basically he hands you the ball and says run with it and make it as beautiful, spectacular, vibrant, colorful, exciting, violent—*all* those adjectives—as you can. He really trusts us, which is great, and it actually started on *Dawn of the Dead*. But this film has *everything* in it, from love scenes to prison riots, wars, Antarctica, Vietnam, an atomic bomb, film noir Mickey Spillane–type detective storytelling; it's amazing to sit back and watch it."

"If you don't really watch and listen, you're lost in this film," Montaño adds. "It's not an action film where you can check out and munch on your popcorn."

"As far out as this is as a graphic novel," Jenkins notes, "it's also a really serious dramatic effort. It's amazing to see how forceful the performances are and how well Zack tells the story. He's a deceptively smart filmmaker who never takes his eye off the ball with storytelling, yet he's known as a guy who uses sleight of hand and techniques that other people maybe haven't found yet. He's very articulate about things—if he wants to make just a little change with music or an effect, he thinks about it very seriously: Does this change help tell the story better? Is it propelling the action or the actors forward?"

Hecker, again: "You can never be too bold for Zack. There's a series of fights in the film and our picture editor, Bill Hoy, is very musically oriented, and he looked at me during the third temp dub, and said, 'Scott, this is our third fight in the film; we've gone really big in Zack's style with the big hits and the stylized fight effects and whatnot. What do you say we tone down the sound design and the fight effects so that we can let the music carry this a bit?' So we did that and during that temp dub, Zack never said anything. But then we went to do a trailer, and the trailer was predominantly from that particular scene that we'd lowered the FX and featured the music on—it was like a two-minute trailer. So I'm at the trailer mix, Zack comes in to review it, and at the end he looks at me, and says, 'What happened to the effects?' So I reminded him of what Bill had suggested about that particular scene, and Zack said, 'Well, we have to *undo* that when we get back to the mix.' So it all came back up. He's really into martial arts and weaponry and he's a very viscerally oriented guy."

There was plenty of room for creativity in both the sound design and the mix because of "the wide variety of locations where the film takes place and the decades it spans," Montaño says. "There are realistic things and situations, and also things you've never seen before. It allowed us a lot of leeway; it's like a smorgasbord of sound."

One thing you've never seen before is The Nite-Owl's strange flying vehicle known as the Owlship. Hecker says, "We wanted to try to keep it from sounding like a jet as so many spaceships do. It does have a couple of elements like that, but mostly we wanted it to sort of sound *purple*, like a vibrating, humming, whirring orb; a modulating and oscillating being. You sort of feel it, too—it's got a rich, warm low-end hum to it." Hecker and Norris ultimately processed and layered synth tracks, as well as various organic sounds to get the overall sound they were after.

Wait a second—*purple*? "Visually and sonically," Hecker notes of the film's sound design. "Some of it is like 'Lucy in the Sky With Diamonds'—looking or hearing through a kaleidoscope; really colorful and almost psychedelic in a certain way. Even though it is reality-based, it's sort of an alternate reality fantasy world."

PHOTO: CARY KRUEGER

Standing: supervising sound editor Scott Hecker (left) and re-recording mixer Chris Jenkins. Seated: re-recording mixer Frank Montaño.

"The whole main title [sequence] is a subversion of recent American history," Jenkins adds. "All the iconic images that you knew growing up from the '30s and '40s are subverted, and then music is subverted, sounds are subverted, and all of a sudden you're establishing right away you're going to break all the rules, that it's okay to break rules as far as sound goes. So whether it's with music or sound design or dialog, you have this huge license—12 or 15 minutes into the movie, all bets are off."

The "electric" Dr. Manhattan character was another sonic challenge, Hecker says. "He's tortured and conflicted and he has human emotions, but he's trapped in this god-like [form], so we tried to articulate his feelings with various different sounds that would convey his emo-

tions, whether they be happy, sad or angry." Among the sounds that were used for the character were moaning whales. "But I hate to even say that," Hecker continues, "because I don't want people sitting there listening for whale sounds. They've been worked with, modulated and pitched and whatnot, and it's very subtle. I don't want the audience thinking about it; you want them to tune into the emotional quality you're going for throughout the film."

PHOTO: COURTESY OF WARNER BROS. PICTURES.

Jackie Earle Haley's character, Rorschach, wears a mask that is a constantly changing inkblot.

Despite the tremendous latitude the designers and mixers had on this film, "We tried not to over-cover," Hecker says. "Before we get to the stage, we're very selective; like when we Foley, we don't do the people in the distant background and pedantically just cover every single thing that moves."

"It's all about audio focus," Montaño offers. "Are we telling a story here? Are we in an action sequence? Is it a combination of things? Wherever you want to focus in a given scene, or even a given frame, determines what you're going to emphasize or play down. And it's fluid all the way through the film."

"Chris and Frankie do a fabulous job of articulating what we want to hear from moment to moment: it works really, really well," Hecker adds.

The team did four temp mixes—the first three for studio executives, the last for a regular audience—and along the way they managed to get the film into good enough shape that the final mix wasn't nearly as taxing as it sometimes is. Of course, there was the usual situation of having to adjust sounds along the way as visual effects came in, but mostly director Snyder liked the direction the sound was heading throughout the process and his comments were minimal. With Bates' music, too, the sketches he offered and the temp music that was selected made it so there were no rude surprises when the final score came in.

And the fun (and work) didn't end with the final mix for the theatrical version. When I spoke to Hecker again a few weeks later, the sound crew was in the throes of finishing up the *Ultimate Watchmen* director's cut—25 more minutes of story, plus a 22-minute stand-alone animated featurette that's part of the graphic novel called *Tales of the Black Freighter*. "It's a lot of work," Hecker says, "but it's all been very cool. Zack really knows what he's doing. The fan-boys are gonna love this!" III

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Sennheiser **HD 800 Headphones**

A novel ring-type transducer and innovative ear-cup design make the new Sennheiser (www.sennheiserusa.com) HD 800 ($1,395) headphones unique in their class. The 56mm transducer claims to minimize distortion, offering THD of 0.02% (at 1 kHz and 100dB SPL) and a frequency response of 6-51k Hz. The ear-cup aims the transducer at the ear at an angle, mimicking key factors in spatial perception and in the localization of the sound offered when listening to speakers. The open-back transducer is mounted in high-precision gauze made of stainless steel, and the ear-cups are made of plastic with particularly good attenuation characteristics. Its headband uses a patented multilayer design comprising metal and plastic to attenuate headband vibrations, eliminating any dips in SPL at low frequencies. The cables are four-strand, high-performance wires made of silver-plated, low-oxygen copper and shielded against electromagnetic disturbance. The two plugs and the ¼-inch (6.3mm) jack plug are gold-plated for optimum contact.

Power up Your Portable

Universal Audio **UAD-2 SOLO/Laptop**

Universal Audio (www.uaudio.com) has developed an ExpressCard version of its UAD-2 SOLO DSP Accelerator card for producers on the go. The new SOLO/Laptop™ ($499) DSP card brings the company's analog emulations—authenticated by Neve, Roland, SPL, Moog and more—to laptop DAW users. The plug-in card boosts the plug-in power on laptop DAWs without the need for cabling or power supply. The UAD-2 SOLO/Laptop supports VST, Audio Units and RTAS plug-in formats on Mac and PC. The UAD-2 SOLO/The SOLO/Laptop includes the company's 1176SE compressor/limiter, Pultec EQP-1A equalizer and RealVerb Pro Room Modeler and CS-1 channel strip, and provides access to the entire Powered Plug-In library.

Active Monitor Gain Cop

TC Electronic **Level Pilot**

Keeping desktop speaker levels under control can be a challenge, but not with the new Level Pilot ($119) from TC Electronic (www.tcelectronic.com). This dedicated and good-looking, high-resolution, balanced, analog, stereo volume controller works simply and independently of the computer or audio interface. It features a solid and compact "slip-free" design employing XLR connectors and quad-core cabling and doesn't need an external power supply. Digitally controlling gain prior to the last D/A conversion reduces the resolution of the conversion, thus degrading the final signal quality. Level Pilot's design circumvents this error in gain control by offering the user the ability to alter volume after the conversion, ensuring maximum resolution without sacrificing audio quality.

Boom in the Room

ADAM Audio **Sub7 Powered Subwoofer**

The new Sub7 from ADAM (www.adam-audio.com) has been designed to complement the A5 and A7 monitors, and features a small footprint, three finishes and two motorized controls for input level and crossover for dialing in the optimal frequency settings for each environment. These knobs can also be controlled with an included wireless remote, letting users optimize sound reproduction without leaving the listening position. The Sub7 is equipped with balanced XLR and unbalanced RCA I/O connectors and numerous controls. A 0/180-degree phase switch and a switchable 85Hz highpass filter help match the sub to the speakers and the room. The Sub7 comes in matte-black ($479) or black/white "piano-gloss" finish ($529) to complement the A5's finishes.

Plug in Via Vinyl

Metric Halo **MIO Console Upgrades**

Metric Halo's (www.mhlabs.com) new MIO Console Version 5.1 software adds RIAA decoding to all of the integrated EQ plug-ins available on Mobile I/O. With the new RIAA decoding filter, users can connect a turntable RIAA output directly to a high-gain, low-noise input of a Mobile I/O and apply precision RIAA decoding to the signal to recover the original material. This process promises a marked improvement in decoding accuracy over the approximate analog filters employed in standard phono preamps. Also new to the package and available in mono, multi-mono and stereo configurations, the new TransientController signal processing plug-in for Mobile I/O +DSP provides zero-latency, independent modification of the transient and sustain characteristics of the signal being processed. TransientController presents three levels of user interface complexity, ranging from a simple UI with three basic controls to a more complex one with detailed process metering and advanced processing controls. The plug-in is excellent for contouring and controlling the transient properties of everything from individual tracks to full mixes. The new release is shipping with new products and is available via free download to all current Mobile I/O users.

DAW in Your Backpack

MOTU **Traveler-mk3**

The Traveler-mk3 ($895) from MOTU (www.motu.com) is a mobile FireWire audio interface for Mac and Windows offering eight channels of 192kHz analog recording and playback, combined with 20 channels of digital I/O in ADAT optical, AES/EBU and S/PDIF formats. The unit can be powered from the computer via FireWire, or for extended remote sessions can be juiced by an industry-standard field battery pack. It offers 28 inputs and 30 outputs operating simultaneously, including four XLR/TRS combo mic inputs equipped with preamps. Other features include V-Limit™ signal-overload protection, true hi-Z guitar inputs, 32-bit floating-point DSP for onboard effects and mixing, two banks of configurable optical I/O, word clock I/O and more. At 3.8 pounds and 14.75x9 inches (WxD), the Traveler-mk3 is housed in a strong, lightweight aluminum-alloy case that fits beneath any 15-inch laptop or can be rackmounted with the included kit.

By Jason Scott Alexander

Digidesign Pro Tools HD8

Major Upgrade Offers New Look, Features and Functions

As a producer of urban, pop and dance music, I write and produce the MIDI for a song in Logic and then commit these tracks to audio and transfer to Pro Tools, where I add instruments and vocals, and go deep into editing. Using two programs is hardly ideal, so I jumped for joy when Digidesign announced this landmark upgrade.

Version 8 addresses many of Pro Tools' long-running user concerns. An all-new MIDI Editor window finally brings world-class sequencing to the platform. Real-time audio pitching, a new Playlist view, track-comping tools and score editing are four more exciting treats. And engineers should delight in Pro Tools 8's support for up to 10 inserts on any given track, plus automatic delay compensation on sends to handle mixer delays inherent in busing. Need more? There are dozens of new effects plug-ins and five new virtual instruments to hook you in.

Users of Digidesign's ICON console, various Digi controllers and M-Audio peripherals will benefit from Pro Tools 8's extended hardware control, which provides access to all 10 inserts and allows you to map plug-ins directly to the controller, address new soft-key commands and more. Also, the new Digidesign Satellite Link software option lets you chain up to five Pro Tools systems (or up to four Pro Tools systems and an Avid Media Composer or Video Satellite LE system) over Ethernet for scalable, nearly sample-accurate, synchronized processing. And a computer running Pro Tools LE can even be farmed out to act as a dedicated HD video playback source.

Pro Tools 8 offers many new features including 10 inserts, new plug-ins and instruments, and an enhanced GUI.

PRODUCT SUMMARY

COMPANY: DIGIDESIGN
WEB: www.digidesign.com
PRODUCT: Pro Tools HD8
PRICE: $249.95, via electronic delivery
SYSTEM REQUIREMENTS: For a complete list, go to www.digidesign.com/compatibility

PROS: Great new look and feel. Many upgrades including Advanced MIDI Editor, Playlist view, Elastic Pitch Score Editor and dozens of new effects plug-ins.

CONS: Elastic Pitch not as expressive as certain standalone products. Score Editor not a substitute for advanced notation software.

Hello New/Old Friend

Upgrading to Mac OS 10.5.5 (Leopard) was necessary to bring my dual-core PPC G5 with HD3 Accel hardware up to minimum system requirements. The full Pro Tools 8 upgrade file tipped in at just a little more than 4 GB, taking roughly two hours to download from the My Digi store. Installation atop V. 7 went flawlessly.

Pro Tools 8's entirely redesigned GUI is both modern and extremely interactive. For example, a fully customizable toolbar in the Edit window lets you rearrange, show or hide the transport, zoom tools, MIDI and synchronization controls, and more. Buttons, LEDs, volume and pan knobs are redesigned in the Mix window. An improved color palette lets you color-in scribble strips as before, but also tints full channel strips in both the Mix and Edit windows. I found that adjusting the color saturation and brightness for channel strips was quite helpful for quickly identifying specific channel groups in very large sessions and for visually separating my MIDI sources between virtual instrument and outboard hardware coming in on aux inputs. Although indeed fresh, the GUI should feel quite familiar to current Pro Tools users.

Waveform overviews now have 16-bit (rather than the old 8-bit) visual clarity, providing better vertical resolution of the waveform when zoomed in for editing, especially on low signal-level recordings. Audio files up to 3.4 GB in size are supported (the old limit was 2 GB), allowing longer, single-file recordings. A new Plug-In and Mixer cache, for allocated DSP when you are closing and opening sessions, results in the ability to open/close all subsequent sessions much more quickly after launching Pro Tools, particularly with similarly configured sessions. The Playback Engine dialog also now provides hardware buffer size settings down to 64 samples for the lowest possible RTAS monitoring latency yet.

Closer to the Action

A common theme in this update is making Pro Tools' workflow faster and more intuitive than ever. Universe View, for instance, provides an entire session overview by presenting audio, MIDI and video material as thin, colored horizontal lines. Clicking one of these region lines or framing a broader area within the Universe

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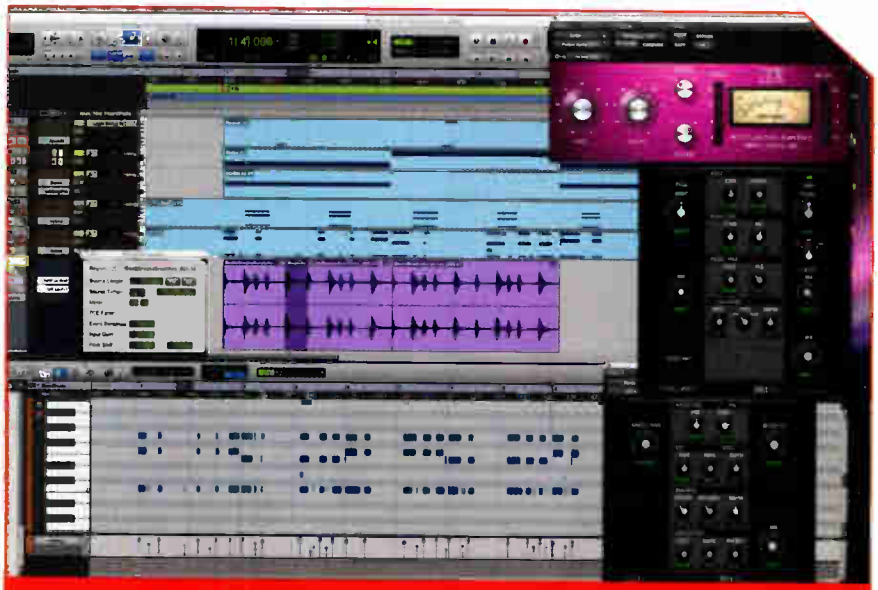
View instantly jumps to that set of foci in the Tracks pane of the Edit window.

Another example of simplified workflow is the new Playlist view, which allows alternate takes to be recorded and automatically displayed directly below the main track, each in its own lane—without losing the old recording. And soft-solo buttons for each Playlist lane can temporarily override the main take for easy auditioning. This new view is ideal for loop recording, and a new preference under Options lets you automatically create new playlists for each looped pass. Similarly, you can now view and edit multiple lanes of automation and MIDI controller data under a given track, regardless of the selected track view.



The Edit window and MIDI Editor give unprecedented control over the way you look at and manipulate session data.

Track Compositing

Playlist view also serves as a nifty comping tool for quickly creating "perfect takes" from alternate tracks or from multiple passes captured in Loop Recording mode. You have a top-down representation of the recording history for a given track, where the last recorded take appears at the top in its own "main playlist" and all previous takes appear on their own sub-playlists. As you spot sections from the various takes that you want to comp together, simply make your selections and copy them to a new playlist. Alternately, you can use the Promote-Up function for lightning-fast comp edits.

A handy region rating system lets you rank

each take on a scale of one to five. This simple feature saved me a considerable amount of time in noting my favorite passes during recording so that I'd be able to clarify my choices later. There's even a smart solution for matching and comping alternate takes across multiple tracks, such as a drum kit. As long as each alt track has identical user time stamps, you can promote them all simultaneously within an edit region of your choice, thus keeping the multichannel image intact.

MIDI Editor View

Nowhere in this update is streamlined workflow more welcome than in the brilliant, new dedicated MIDI Editor. The archaic block methods of working with MIDI data are gone, replaced instead by a freely sizable and intuitive graphic piano-roll-style interface, complete with pencil and draw tools.

Within its main work area, notes can be displayed in varying shades of the assigned track color, with higher velocities appearing darker and lower velocities lighter. Notes can be inserted, deleted, moved, nudged, separated, consolidated (glued) and muted, either individually or as groups. You can also scrub/shuttle through MIDI parts, audition velocity changes and play MIDI notes when tabbing. Across the top of the Editor window is the requisite toolbar with MIDI Track Solo and Mute buttons, plus a standard Pro Tools complement of Trimmer, Insertion, Grabber, Pencil and Smart Tool buttons. Double-click at the bottom of the MIDI note editor, and you enter a split-pane mode to view/edit multiple MIDI parameters simultaneously, such as volume, pan, modulation, breath, etc. And you can have as many MIDI edit windows open as you like (i.e., one per instrument).

The Pro Tools MIDI Editor sets itself apart from all others by letting you simultaneously view the contents of multiple MIDI tracks at a time, superimposing the note data from various instruments in their own unique colors. This can become cluttered and hard to work with, but wherever note data from multiple instruments resides within the same area and obscures the view, you can selectively hide certain instruments' note data, with their notes continuing to play back.

I really love this completely different perspective of MIDI tracks. You can tweak individual MIDI elements or "nip and tuck" the entire arrangement as new ideas hit you. And by using the up/down arrow keys, you can quickly switch from one virtual instrument or outboard MIDI track to another and record, edit and play back in one fluid pass or looped scenario.

That said, I'd love having some real-time MIDI macros or performance-oriented tasks. Something similar to the Transform window found in Logic would be cool, where mathematical variables and Boolean statements could be used to generate crescendos and arpeggios, perform MIDI routing and controller conversion tricks, and more.

As an aside, Pro Tools's four edit modes (Shuffle, Slip, Spot and Grid) had been mutually exclusive. But now you can snap-to-grid while in any of the other three. For example, in Shuffle mode and with Grid enabled, you can make a selection in a region based on the grid and cut the selection, and any regions to the right of the edit will shuffle to the left. This is incredibly handy in loop-based music for slicing to the downbeat, no matter the groove.

Elastic Pitch

The Elastic Properties window now has transposition settings for desired amounts over a ±2-octave range. However, Elastic Pitch must be applied to regions in full, so altering single notes or parts of a region requires creating smaller regions. This is apparently due to the fact that Elastic Pitch transposition is supported with the Polyphonic, Rhythmic and X-Form algorithms only, but not Monophonic.

The upswing is that you can now transpose audio in real time, just like MIDI, and pitching quality is quite good and transparent. Eventually, perhaps Digidesign will take this more in the direction of Celemony Melodyne. These days, pitching has come of age to where you expect much more selectivity over individual notes and the ability to draw in vibrato curves or other articulations.

Way to Score

Digidesign's acquisition of Sibelius has paid off big in Pro Tools 8. Along with its extremely reliable and accurate transcription of MIDI in real time, the new Score Editor also lets composers "write" music into Pro Tools as never before. Whether you record, import, draw in with the pencil tool or Step Enter MIDI, the Score Editor transcribes MIDI notes as they're played or entered, and any changes are immediately audible. You can choose to edit within a full scoring window or have the editor follow the selections you make in the main Edit window. In fact, activities can be linked between the main Edit, MIDI Editor and MIDI Event List windows at all times.

To provide only certain parts of a large arrangement to session players, I could quickly pick and choose individual MIDI and instrument tracks from the tracklist. Once the tracks were added to my score sheet, I began fine-tuning appearance through global and independent track attributes. These include setting the clef; adjusting display quantization, with options to straighten swing and allow note overlap; and determining whether to display the track at "concert pitch" or as a transposing instrument, such as a B-flat tenor sax. I was dismayed that no freely assignable text placement or lyrical support is given.

For an integrated solution, score editing is quite flexible. You can select, transpose, move, insert and delete notes; change keys and meters; and insert chord symbols and diagrams. The Chord Change dialog lets you specify chord diagrams (guitar tablatures) for placement on the score. Here, you can select the chord, chord quality and bass note of the chord.

When it comes time to print, the Score Setup window lets you enter information such as the title and composer of the score; whether attributes such as page and bar numbers are displayed; the spacing between staves, systems and chord symbol/diagrams; and basic page layout parameters such as whether to print portrait or landscape and with what margin sizes. Beyond any of this, you'll likely need to make use of the Export .sib files option (Sibelius 5 or higher required) for deeper notation editing and cosmetic touch-ups there.

I'm a One-DAW Man

Pro Tools 8 has proven to be an inspiring, ex-

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A.I.R. PLUGS EXPOSED

Until now, Digidesign has not included virtual instruments with Pro Tools. Upping the ante on its competition in this area as well, Pro Tools 8 comes with an impressive bounty of new instruments and effects plug-ins that are free. The A.I.R. "Creative Collection" gives you a hot new electronic rhythm module called Boom—whose look, feel and sound are inspired by classic analog and digital drum machines—plus a killer-sounding tonewheel organ module called DB-33, complete with full drawbar functionality and several tonewheel models for a wide range of classic organ sounds. DB-33's integrated convolution-based rotary speaker cabinet and tube preamp emulations are also available as independent effects plug-ins, and they do sound pretty awesome!

Also bundled is Mini Grand, an acoustic piano module with seven selectable models (Atmospheric, Soft, Ballad, Real, Bright, Hard and Dance) and eight velocity layers per key. Though it sounds great in a mix, when solo'ed it expectedly fell short of reproducing the subtleties afforded by the best 100-plus-GB libraries out there.

Structure Free is a scaled-down version of Digidesign's acclaimed sampler, while Xpand!2 comes with 1.5 Gigabytes of amazing new content on disc. The funkiest plug-in, though, is Vacuum. With its dusty and distressed looking front panel, this unique-sounding, dual-oscillator analog-modeling affair employs a form of synthesis based on valve emulation at the oscillator drive, mixer drive, highpass and lowpass filter saturation, and output tube amp stages. It delivers a distinctly rich and lush tone on leads, basses and pads, and can generate some pretty squirrelly special effects.

—Jason Scott Alexander

citing and highly creative work environment. Finally, it's everything that I need to complete a project from start to finish. I'd like to see expanded Elastic Pitch facilities, along with macro programming and real-time performance-oriented routines brought to MIDI. The Score Editor is a welcome addition but remains quite utilitarian, generating quick score displays and printouts with few frills and no lyrical support.

Most impressive is how Pro Tools 8 has finally become the "everything" DAW. The MIDI Editor not only brings Pro Tools 8 current with competing software packages, but even surpasses them in terms of the groundbreaking interface. As a songwriter, I find the ability to work with MIDI in the same way that you imagine music—as a malleable cloud of instruments and notes interacting within your head—to be nothing short of miraculous. For me, that's always been the missing link in Pro Tools—but not any more. ■

Jason Scott Alexander is a producer/mixer/remixer in Ottawa, Canada.

By Barry Rudolph

Abbey Road Brilliance Pack Plug-Ins

Beatles-Era Processors Modeled From EMI Outboard Gear

Abbey Road Studios' Brilliance Pack is a bundle of three plug-in processors that are modeled after the original circuit schematics for EMI's vintage units. Each plug-in retains the operation and characteristics of the original hardware, called Presence Boxes: the RS127 Rack, RS127 Box and RS135. Each one is a single-channel passive unit that was designed to augment the limited equalizers in the studio's all-tube REDD desks. Abbey Road's plug-ins are available in TDM, RTAS, Audio Units and VST versions for Mac OS X and Windows-based systems. Packages include mono and stereo versions of both the RS127 Rack and Box versions and the RS135.

Brilliant, Isn't It?

Like great vintage hardware, these plug-ins offer a beautiful simplicity—they just work right away. In mixing, when I want something to sound only a little brighter (like the smooth sound of using the tone control on a good tube stereo), the RS127, with only three frequency choices, is the right tool. These plug-ins sound great on everything, and you can use two of them in series if you want to address more than one frequency. The Brilliance Pack plug-ins are great for vocals, electric guitar tracks and stereo programs or stems.

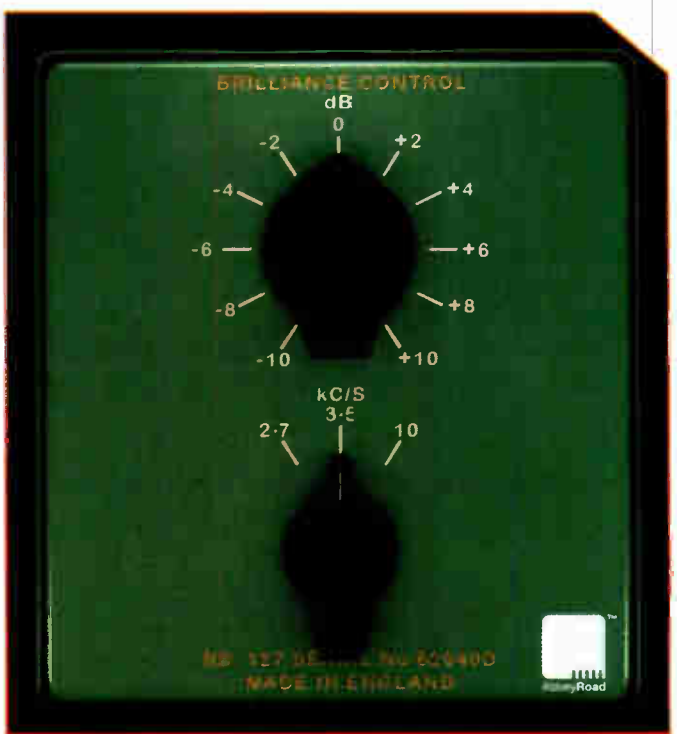
When I was close to completing a mix, I added the RS127 Box after the last processor in a lead-vocal chain, because the producer thought that the vocal was a tad dull sounding. My vocal chain was: Waves Renaissance Channel (vocal EQ and 2:1 compression), Universal Audio 1176LN (4:1 compression), Sonnox SuprEsser Dynamic EQ (set to compress certain upper midrange frequencies only) and the RS127. I set the RS127 to +4 dB at 10 kHz to open up the sound after the two compressors and the SuprEsser. The RS127 is so smooth that it just sounds like air on top without exacerbating the "S." In this case, it "framed" the vocal performance with an articulate clarity.

These plug-ins give electric guitars a more lifelike sound, the kind you get while standing next to an amp in the studio. For a touch of cut, I used +2 dB at 2.7 or 3.5 kHz from the subtler of the two RS versions, the RS127 Rack, and followed it with the RS 135 set to +2 dB. These two EQs together sounded more like cranking the Top Boost knob on a Vox AC30 amp that was used in the recording than an EQ plug-in for a DAW.

Setting the RS127 Box to +10 dB at 10 kHz was a popular setting back in the '60s at Abbey Road, and it's the reason kicks and snares on certain records from that time sounded superbright yet not shrill. Of course, analog tape added compression, and the high-frequency limitations of vinyl certainly "sanded" down any grittiness caused by this extreme boost.

I liked all three plug-ins for program and mix stems. Neither the TDM or RTAS versions in Pro Tools use much DSP, so even when you've already maxed out your system, there's always room for a couple more instantiations. The RS127 Rack set to +4 dB at 10 kHz works great to put a high-frequency "lid" on string section stems—it makes first violins sound very glassy.

When I used a pair of RS127 Box plug-ins on stereo grand pianos, they sounded huge. Boosting grand piano tracks by 10 kHz sounded magical, as if I had used analog hardware with the keyboard reaching into frequency areas that are mostly occupied by cymbals. You can make pianos more audible without raising their levels.



The RS127 Box offers three frequency choices.

Virtually Adventurous

Using Abbey Road's new Brilliance Pack processors is the next best thing to connecting the studio's actual vintage hardware units to evoke the adventurous and experimental sounds of the '60s. They are the simplest and easiest plug-ins you'll ever own; use them on everything in that spirit. ■

Barry Rudolph is an L.A.-based recording engineer/mixer. Visit www.barryrudolph.com.

PRODUCT SUMMARY

COMPANY: ABBEY ROAD PLUG-INS
WEB: www.abbeyroadplugins.com
PRODUCT: Brilliance Pack
PRICE: $499 (TDM); $249 (native: VST, Audio Units, RTAS)
SYSTEM REQUIREMENTS: Pro Tools Version 7.x/8.x or any Audio Units/VST host; Mac OS X 10.4 (or higher) or Windows XP/Vista; iLok Smart Key and ilok.com account

PROS: Extremely simple for adding a silky shine to any track.

CONS: One-trick pony—single-frequency equalizer.

By Matt Bishop

Radial JDX Reactor Guitar Amp Direct Box

Simple, Affordable Speaker Cabinet Emulator

Radial Engineering has established itself as a manufacturer of high-quality, innovative products for audio and music. The company's latest release, the JDX Reactor guitar amp DI box, is neither a re-amping device nor a traditional DI box. Placed between a guitar amplifier and its speaker cabinet, this little red box pulls a direct microphone feed by filtering both the amplifier's output and the electro-magnetic "back" impulse from the speakers. The emulation is designed to be a compromise between a closed-back 4x12 and an open-back 2x12 cabinet. The idea is that a signal taken directly from the output of the amplifier will eliminate irregularities caused by different mic placements and varying acoustics.

How's Your Doppelganger?

Having been a longtime fan of Radial products but a fairly staunch opponent of amp/cabinet emulators, I approached the Radial JDX with cautious optimism. During the course of a few weeks, I tested the JDX with a couple of different guitar rigs. Mixing on a Digidesign VENUE through a finely tuned Meyer MILO rig provided the perfect test for this little red box.

First up was a Divided By 13 head and a cabinet loaded with Celestion Greenbacks. The cab was also miked with a Shure 57 for comparison. I was immediately impressed. The sound was very natural and not unlike a microphone. However, I was sure that listening to the 57 would expose the emulator's flaws. Much to my surprise, when I muted the Radial and brought up the mic, the sound was not that different. There were tonal distinctions, but overall they were very comparable. The JDX was bigger through the low mids and a touch darker on the top end. The emulation was also a bit tighter than the mic; all of this seemed to favor the dense, modern-rock tones that were being played.

When the guitarist would really dig in, the JDX likewise responded differently. While the speakers would compress and thin out to some degree as they were driven harder, the Radial maintained the low end and depth. Depending on the situation, this could be considered a pro or a con, but in this mix it was beneficial.

I also used the JDX on a Vox AC-30HH, again with a 57 on the cabinet. This guitar player had a more vintage-oriented tone. His sound was significantly brighter and less focused than the Divided By 13. While the JDX created a nice sound, it wasn't as faithful as it had been on the Divided by 13. The JDX didn't capture all the top-end details that the mic was picking up, particularly in solos or big overdriven chords. This is not to say it was unusable, but in this case, it wasn't similar enough to blend with the mic, nor was it preferable.

The JDX amplifier DI box sits between an amp and cabinet, allowing you to extract a line level feed that emulates a speaker cabinet.

Reactor Reactions

Overall, the JDX does an admirable job emulating guitar cabs. Although it's not a replacement for miking, it can be very useful both by itself or paired with a microphone. The JDX's powerful, focused sound would be right at home in most pop or modern rock mixes. I also found it to be particularly effective when mixing in-ear monitors. Putting the JDX between a guitarist's favorite head and a load box would be a great way to lower stage volume (and much more natural sounding than a digital amp simulator). What's not to like? The JDX is simple and well-constructed, and it works. It would be great if there were another emulation that modeled a smaller, brighter speaker set. Although it's intended to emulate a compromise between a closed 4x12 and an open-back 2x12, it definitely tends toward the bigger, darker configuration. It should be noted that the JDX doesn't provide any loading itself and must be connected to a speaker cabinet or load box. III

Matt Bishop makes his debut as a Mix *reviewer in this issue. He is a staff engineer at Alford Media Services in Dallas, where he mixes for a variety of local and national artists and churches.*

PRODUCT SUMMARY

COMPANY: RADIAL ENGINEERING
WEB: www.radialeng.com
PRODUCT: JDX
PRICE: $220

PROS: Simple, well constructed. Effective when mixing in-ear monitors.

CONS: Could use an emulation that models a smaller, brighter speaker set.

ZED-12FX

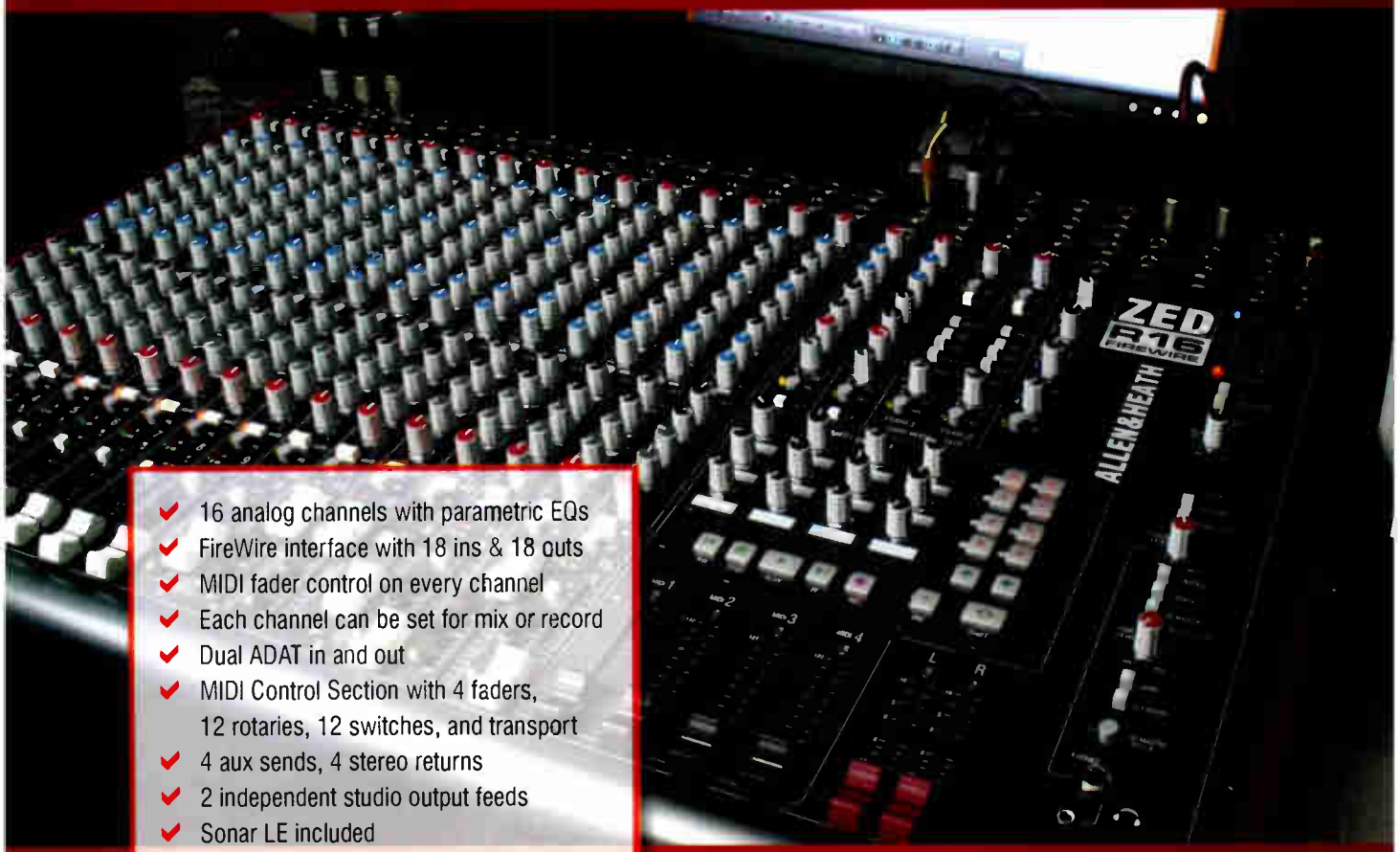
ZED-14

ZED-22FX

ZED-428

ZED R16

What's on your wishlist?



- ✔ 16 analog channels with parametric EQs
- ✔ FireWire interface with 18 ins & 18 outs
- ✔ MIDI fader control on every channel
- ✔ Each channel can be set for mix or record
- ✔ Dual ADAT in and out
- ✔ MIDI Control Section with 4 faders, 12 rotaries, 12 switches, and transport
- ✔ 4 aux sends, 4 stereo returns
- ✔ 2 independent studio output feeds
- ✔ Sonar LE included
- ✔ In the Studio and Live: You can do it all!

16 Channel FireWire Recording

Finally, there's an affordable, compact mixer which takes care of all your live and recording needs. The Allen & Heath ZED-R16 is packed with an array of features you just can't find anywhere else in one box. It combines an analog mixer which features an exceptional preamp and sophisticated EQ section, with 16 FireWire recording outputs, ingenious home-studio routing and lots of MIDI control - including switchable channel faders.

You'll be able to mix live gigs, and at the same time record up to 16 channels using either FireWire or ADAT outputs, then mixdown and record the final track on any computer sequencer software using the MIDI controls. Cakewalk's Sonar LE music production software is even supplied free with the mixer! Call Sweetwater's Engineers today to get a ZED-R16 for your studio!

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For more information: 800-222-4700 or www.sweetwater.com

ALLEN&HEATH

By Eddie Ciletti

Tales of the Resistance Movement

Or Understanding Resistors

Right after wire, insulation, switches and connectors, resistors are one of electricity's most essential components. Without resistors, levels couldn't be adjusted, nor could tubes, transistors or FETs be biased into their sweet spots. Resistors can do two of math's basic functions—division (attenuation) and addition (mixing)—while amplifiers and transformers handle the multiplication and subtraction.

Long Division

There are lots of electronic analogies—plumbing being perhaps the most popular—but for resistors, I think bungee cords do the job nicely. Imagine an "eye hook" in the ceiling and another "eye" in the floor. When stretched eye-to-eye, two identical bungees will divide the floor-to-ceiling distance in half (an example of a "series" circuit). If you've ever gotten 6 dB of gain reduction from an LA-2A or 1176, you've pretty much done the same thing to electrons using one standard resistor in series with either a photosensitive resistor or a Field Effect Transistor (FET).

Another example of a series circuit is a string of holiday lights, where removing one bulb (or LED) interrupts current flow. By contrast, power distribution is a giant parallel network where anything can be plugged in or removed without affecting any of the other circuits that are already online.

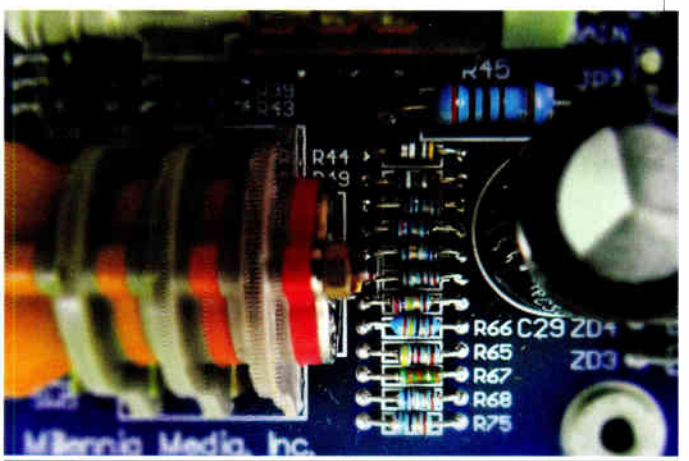
Math Explains Reality

To continue the bungee analogy, assume the distance from floor to ceiling is the voltage (V, in volts) and the tension in the bungee is the current (A, in amperes). The elasticity of the bungee (as determined by the type, length and/or thickness of the elastic material) is the resistance in ohms (R = O). A short, thick bungee has a low resistance—it doesn't like to be stretched—so the current (tension) is high. A long, skinny bungee is easily stretched so the current (tension) is low.

The tools for measuring amps, volts and ohms are found in one device called a multimeter. In the bungee world, inserting a spring scale between the resistor and the eye will measure tension (amps), a ruler or tape measure spans the distance (volts), and Ohm's Law is used to calculate the resistance (how easily the bungee is stretched). Therefore, if I = V divided by R (I = V/R), then a bungee stretched 1 foot with 1 pound of tension is equivalent to 1 ohm (Ω). Note that I've assigned quantities for the sake of demonstration, but I have little doubt about the possible translation.

Resistance	Noise at 68 degrees F
200 ohms	-129.67 dB
400 ohms	-126.66 dB
800 ohms	-123.65 dB
1.6k ohms	-120.64 dB
3.2k ohms	-117.63 dB
6.4k ohms	-114.62 dB
12.8k ohms	-111.61 dB
25.6k ohms	-108.60 dB
51.2k ohms	-105.59 dB
102.4k ohms	-102.58 dB
204.8k ohms	-99.50 d
409.6k ohms	-96.56 dB

Thermal noise increases 3 dB each time the resistance is doubled. Note the change of 1.18 dB from 32F/0C (96.86 dB) to 100F/37.7C (-96.3 dB) to 185F/85C (-95.68 dB).



Resistors for this Millennia Media preamp module are Vishay 1-percent-tolerance metal-film types providing precise, repeatable control of gain settings. The colored bands around each resistor conform to the standard resistor color-code, which provides information about tolerance and the impedance of each component, without using numerical values.

Thermal Noise

All electrical conductors—wires and resistors, along with semiconductors such as tubes and transistors—can generate random white noise (also known as Johnson noise) that is proportional to the conductor's temperature. The noise, which results from electron agitation, "limits" the usable dynamic range in high-gain circuits (like a mic preamp) and/or low-level resolution in digital converters (A/D and D/A).

The table at left shows the relationship between resistance and noise as determined by an online calculator (www.sengpielaudio.com/calculator-noise.htm). These relationships were more or less confirmed in the physical domain, though I chose the easy way, using a Decade Box, which unfortunately introduces other noises like buzz. A better way would have been to solder individual resistors to XLR plugs to test one at a time. As you can see, doing the math first would save time because the relationship between resistance and noise quickly becomes obvious.

EIN

Equivalent Input Noise (EIN) is a specification that quantifies the amount of noise an amplifier (such as a mic preamp) adds to the signal. To measure, a resistor of 150 to 200 ohms is connected to an XLR plug to simulate the microphone's source impedance. Impedance is AC's equivalent of DC's resistance, or as I like to define it, impedance is resistance with resonance (a frequency-related component). If a preamp at max gain has a noise floor of -70 dBu, we can subtract the gain from that amount to determine the actual noise level. Preamps typically have at least 60 dB of gain, so -70dB (noise floor) minus 60dB (gain) yields an EIN of -130 dB.

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to 6 dB per bit. By dividing an EIN of -130 dB by 6 dB, the equivalent digital resolution is 21.6 bits, which is what you can expect from a good 24-bit converter. Simply put, 144 dB of resolution is theoretically impossible given the inherent component noise, but it is more than enough for audio purposes—unless you need more (and can record at the north or south poles).

NOISE LINKS

People always ask me about "how to get started" books. Two I can recommend are Walter Jung's *IC OpAmp Cookbook* series and *The Art of Electronics* by Paul Horowitz and Winfield Hill. Here are a few useful online resources.

The Math of Noise
www.analogzone.com/avt_1204.pdf

Rane's Audio Specifications
www.rane.com/note145.html

Resistor Noise (from a guitar amp manufacturer's perspective)
www.aikenamps.com/ResistorNoise.htm

Trade-Offs

Tubes and semiconductors used in high-gain applications must be pretested for noise. Once that's out of the way, the type of resistors and the noises they generate can be sorted out. And thermal is but one of three noise categories. Of the two other resistor-related noises, shot noise is the result of current flowing and contact noise is related to the material used to make the resistor itself—its geometry. (See "Audio Science" sidebar for more.)

Suffice to say that aside from choosing a resistor type for low noise, all of the other noises are related to circuit design. The fact that some circuits sound and perform better at higher currents contrasts directly with the fact that resistors are quieter at lower currents.

Audio design is a series of compromises made for the collective good. The most obvious example of this might be interference immunity; keeping out unwanted radio and television signals might result in additional circuitry that can compromise the signal integrity, albeit well outside of the range of hearing. Another trade-off is using off-the-shelf parts vs. specialized parts. The latter might be better, but as with all obsessions, performance is a battle between value pricing and the law of diminishing returns. ■

AUDIO SCIENCE

Resistor Types

Wire-wound resistors have the lowest noise. These exhibit only thermal noise, but they also tend to be inductive, causing frequency anomalies or, worse, a tendency toward instability (oscillation). Metal-film resistors are next in line—and most popular—while carbon-composition resistors have the highest noise. I'm not going to debate the sound of resistors except to say that older carbon resistors are not trustworthy. My personal preference is metal-film types due to their low noise, reliability, longevity, availability and price. These types offer the most control over type and wattage—higher-wattage resistors can dissipate heat faster and keeping cooler helps to reduce noise and extend life. —*Eddie Ciletti*

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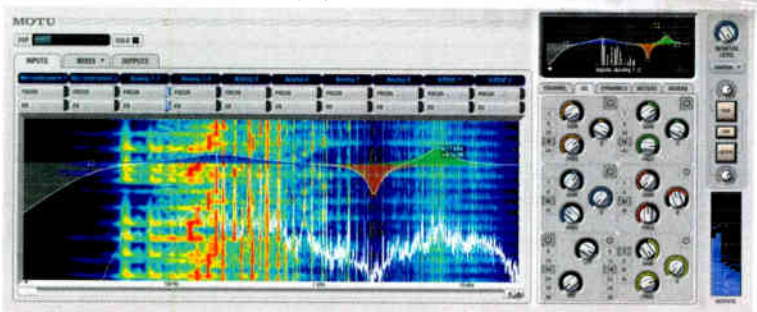

MOTU Traveler-mk3

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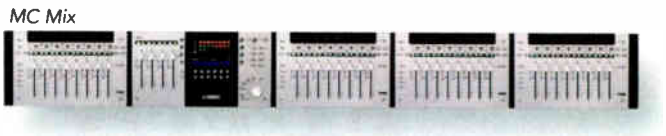

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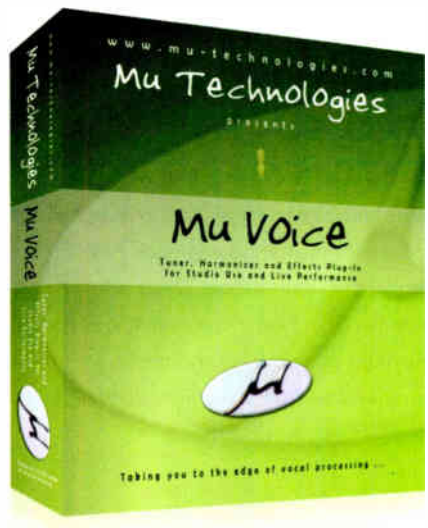

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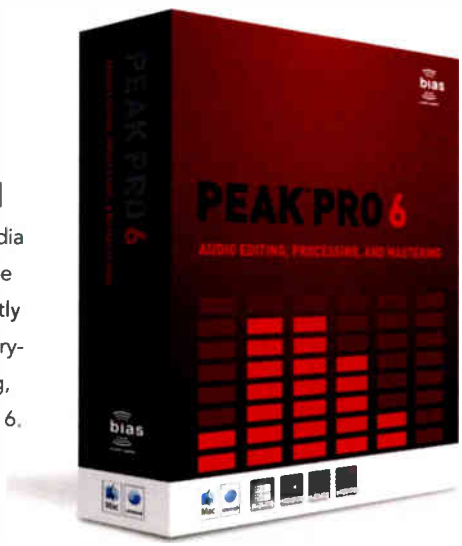

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Q&A

By Tom Kenny

Shawn Clement

From *Buffy* to *Open Season* to a *Quantum Quest*, this composer creates scores for all media.

You compose for TV, videogames and now a major feature film. How did you get your first big break?

I'll make the long story short. I came to Los Angeles and did a series of crazy odd jobs. My last civilian job was in the mailroom at Sony Pictures. I picked up some odd scoring jobs for TV, some stuff for Showtime, writing at night and using any money I made to buy gear. I was working on an animated series in the mid-'90s, *The Savage Dragon*, when an actor friend stopped by my house on the way to an audition for *Buffy the Vampire Slayer*. He took a copy of something I was working on and brought it to the audition. A year later, I'm back in Boston and got a call from one of the producers. That cassette tape got me the meeting. And then I got the show.

That's a nice break. How about videogames?

Well, that was an area I never even thought of. In the late '90s, *The Hollywood Reporter* put together an online composers' registry, and I turned out to be a guinea pig for the site. A bit after the site launched, I got a call from Ubisoft in Montreal. I knew nothing about videogames and was busy at the time, so I turned it down. They knew *Buffy* and now wanted Donald Duck? How do you put those two together? But they flew in, we had a meeting and I found myself working on *Donald Duck: Goin' Quackers*, one of the early PlayStation 2 games.

Television and videogames? Do you get yourself into a different headspace to write?

I still score to picture, so my process is really no different. But I did find that music plays a much different role in games. In film and TV, you are there to support a story, no question. In games, you are a driver, both emotionally and in game play, and you get chances to be more creative. Scoring the cinematics is really not much different, but the in-game cues have enormous technical issues, with loops and cues and characters that change depending on game play. It's tough, more analytical, but I like figuring those moments out.

You're a guitarist first. How do you write?

I trained myself on keyboard and mostly write that way. If you write on guitar or an instrument that you are comfortable with, you tend to write for that instrument. But what you want is to write in your head. So in the beginning, I did the MIDI mockups, with keyboard synths, recorded and delivered on DA-88. At the time I had a [Kurzweil] K2500, a [Roland] JV-1080, an [E-mu] E-IV with a Mackie 1604 console, and my guitar rig.

And your workstation?

Ha! My first one was an Atari that I pulled out of a friend's closet. I used SynthiTrack then. And I'm a PC guy, always have been, so I use Cakewalk and have for years. I like things that work, that are solid and have just a few knobs. Now the new version has a few more knobs, but I love its intuitiveness and power.

Okay, let's jump to today. You have a major Hollywood release coming up in the fall with Quantum Quest. How's it going?

[Laughs] Well, I just started writing, and we're recording in April! I'm juggling three reality shows right now, but I do well under pressure. *Quantum Quest* is a project that's been circulating for years, and I've known the screenwriter/producer for years, so I've kept abreast of it. We'll have an 82-piece orchestra up at the Skywalker Scoring Stage, recording and mixing with Leslie Ann Jones. So I'm excited! Even though it's sci-fi and live action/animation, I'm keeping it pretty traditional. I'm not writing space music. It's a drama with action as far as my writing goes.

You've assembled quite a varied career. Any advice for the up-and-comers?

I'm a big fan of getting yourself out there, whether Facebook or Twitter or directories. There is film, TV, videogames, Webisodes, cell phone content—endless opportunities for the working musician who is open to a lot of new things. Now there may not be a lot of money at first, but there wasn't money at the start of music videos or videogames. You have to have an ear out for the next big thing and the money will come. ■

Tom Kenny is the editorial director of Mix, EM *and* Remix.

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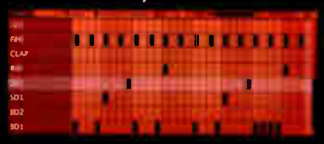
Add filter resonance. Tweak an envelope. Perfect your sound.

4 pad banks + 2 racks
Layer full kits with multi-sample instruments, loops and audio phrases.

Complete mixer with FX
Apply dozens of quality effects throughout, from individual samples to the master stereo output.

SP Mode
Emulates the classic SP1200 drum machine.

Step Sequencer lets you build patterns in seconds with just a few clicks.



Piano Roll Editor for sequencing multi-sample instruments and sliced loops.

Loop Editor lets you set loop behavior and drag & drop loops as MIDI or audio.

Graph Editor lets you achieve ultra-expressive performance for each note.

Plus many more screens for scene building, song mode, and much more...

Waveform Editor for quick editing, tweaking and cleanup of sample material.

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