

MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

PORTABLE PRODUCTION

» Pro Recording On the Go

» Headphone Buyer's Guide

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Sound for 'Notorious'

LILY ALLEN

Tracking in the English Countryside

My Morning Jacket

LIVE

2 Hard Records
Kingston, Jamaica

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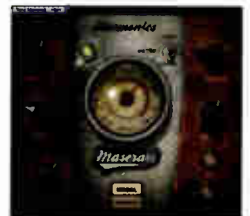
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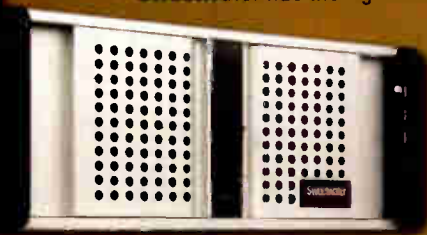
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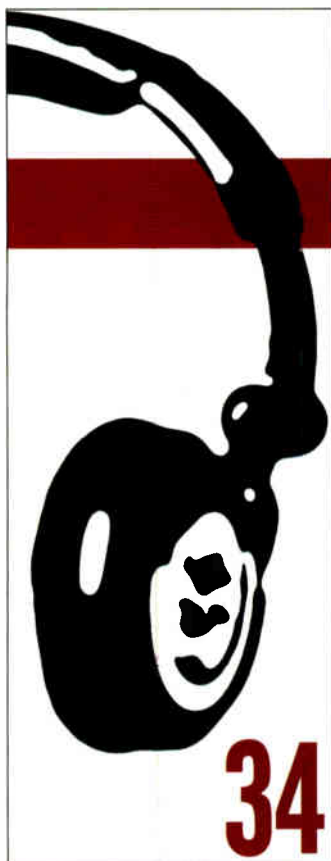


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Music Instruments & Pro Audio

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MIX FEBRUARY 2009, VOLUME 33, NUMBER 2



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Designed by Francis Manzella of FM Design, Jeremy Harding's 2 Hard Records studio (Kingston, Jamaica) provides a flexible, high-end environment for in-house music creation and outside clients. See story page on 16.
Photo: George Roos. Inset: Paul Natkin.

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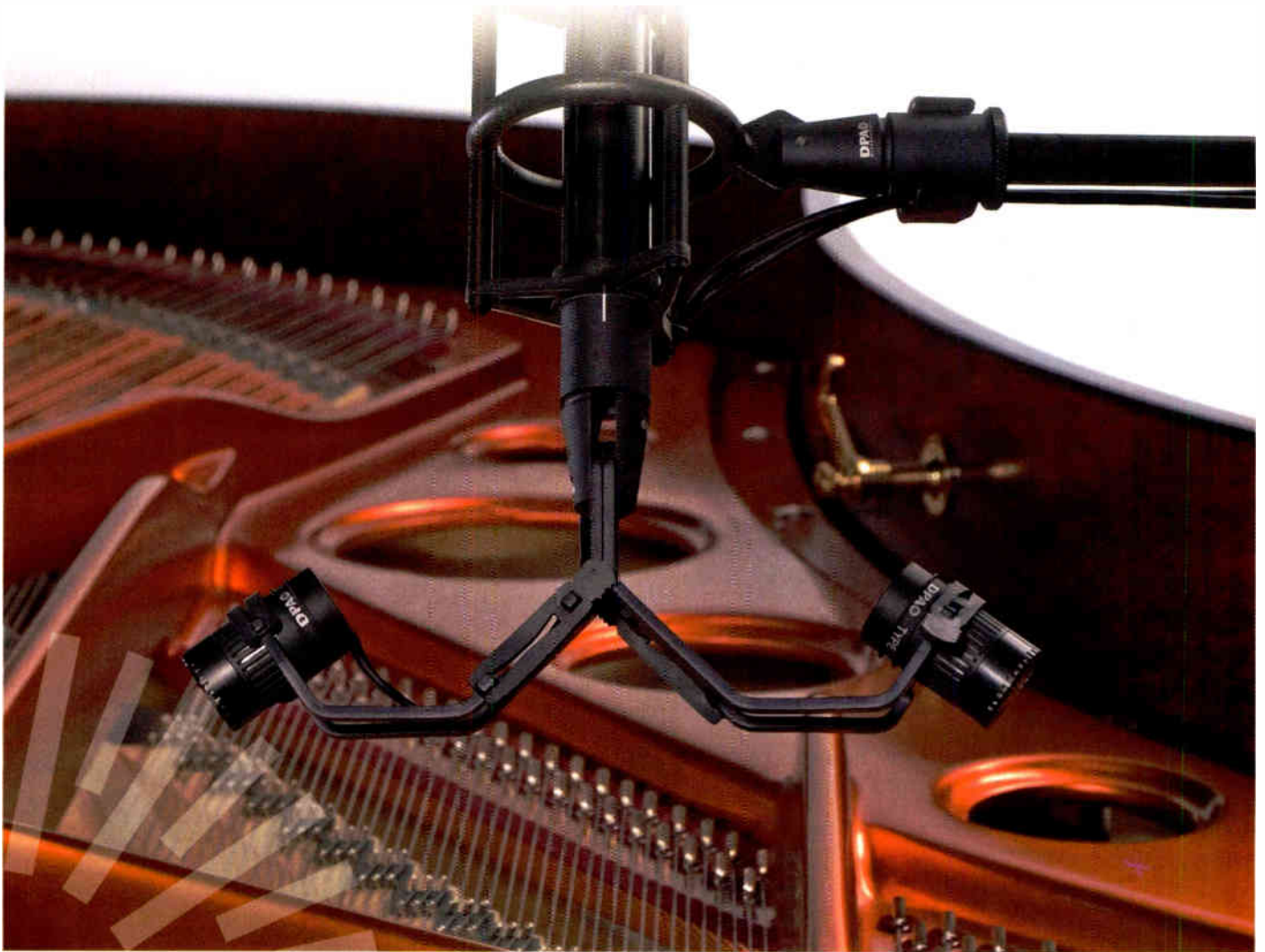
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BY MR. BONZAI

This veteran engineer's mantra for success is simple: "Be great." Trace his path to success—from gofer to Grammy.

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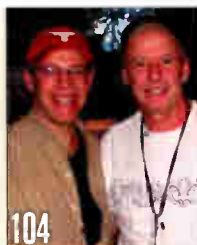
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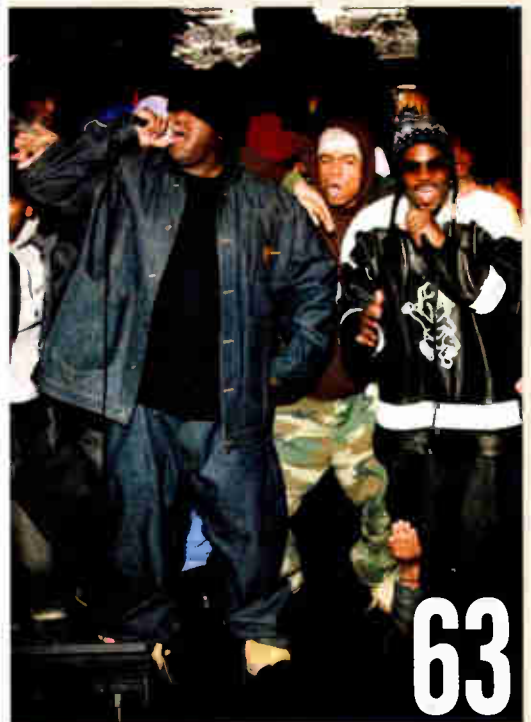
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▶ The Trade Show Is Dead, Long Live the Trade Show

As I write this, Macworld and CES have wrapped and I'm packing my bags for NAMM. Just two weeks into 2009, we're already on the third trade show of the year and honestly, I'm still waiting for the "wow." Macworld and CES, the two largest technology expos, both had weaker showings than in years past, and the blogosphere is all abuzz with pundits debating the future of the trade show.

The biggest news from Macworld (the revamped iTunes structure notwithstanding) was the announcement that Apple will no longer exhibit at the show. Apple's reason for pulling out? The company connects with more people in more ways than ever before, and trade shows have become a decreasing part of that equation. This giant reaches more than 3 million customers weekly through its stores alone, which—according to Apple's Phil Schiller in his keynote address—is equal to "100 Macworlds." Using that simple math, it's easy to question the relevance of the expo. And without Apple at Macworld, the future of that show (at least as far as the exhibits go) is uncertain.

At the same time, the Consumer Electronics Show in Las Vegas reported an 8-percent decline in attendance, with 300 fewer exhibitors than last year—a 10-percent drop. On the technology side, neither convention played host to any earth-shattering debuts or shocking announcements.

Granted, these are largely consumer-oriented shows, and discretionary spending has taken a huge hit this winter. But this trend has hit the pro world, too. We've already seen heavy hitters like Apple and Avid pull out of NAB, and I've heard reps of a handful of larger companies wonder aloud if they'll make it to AES this year.

The black cloud of recession hangs over us all. In a tough economy, everyone's concerned about spending. And in the equipment world, that means hard choices about balancing allocations for R&D, marketing and manufacturing.

But there's another factor. The ways we receive information are changing. Conventions used to be the platform to set standards and announce landmark product developments. (Think ADAT, iPod.) Now, companies are finding innovative new methods to reach customers, ranging from local events to social networking campaigns.

For a technology developer, there are a hundred ways to reach a targeted, qualified audience, from road shows to dealer events to custom Webcasts, downloadable demos or online user groups. These methods not only work for the Apples of the world, they also work for the boutique gear designers and the little plug-in companies.

So, are trade shows dead? Hardly. Face-to-face time with—or as—a potential customer is invaluable. That idea exchange, networking, deal making still can't be replaced by technology. As a user, it's a rare chance to get out of the studio to see what other people are doing and interact with hundreds of different technologies under one roof. With hardware—from guitars to synths to studio monitors—there's nothing like auditioning the real thing. Therefore, as trade shows evolve into smaller, more community-focused events, we all work at new ways of staying informed and connected.

Where do you find information? Let us know at mixeditorial@mixonline.com.



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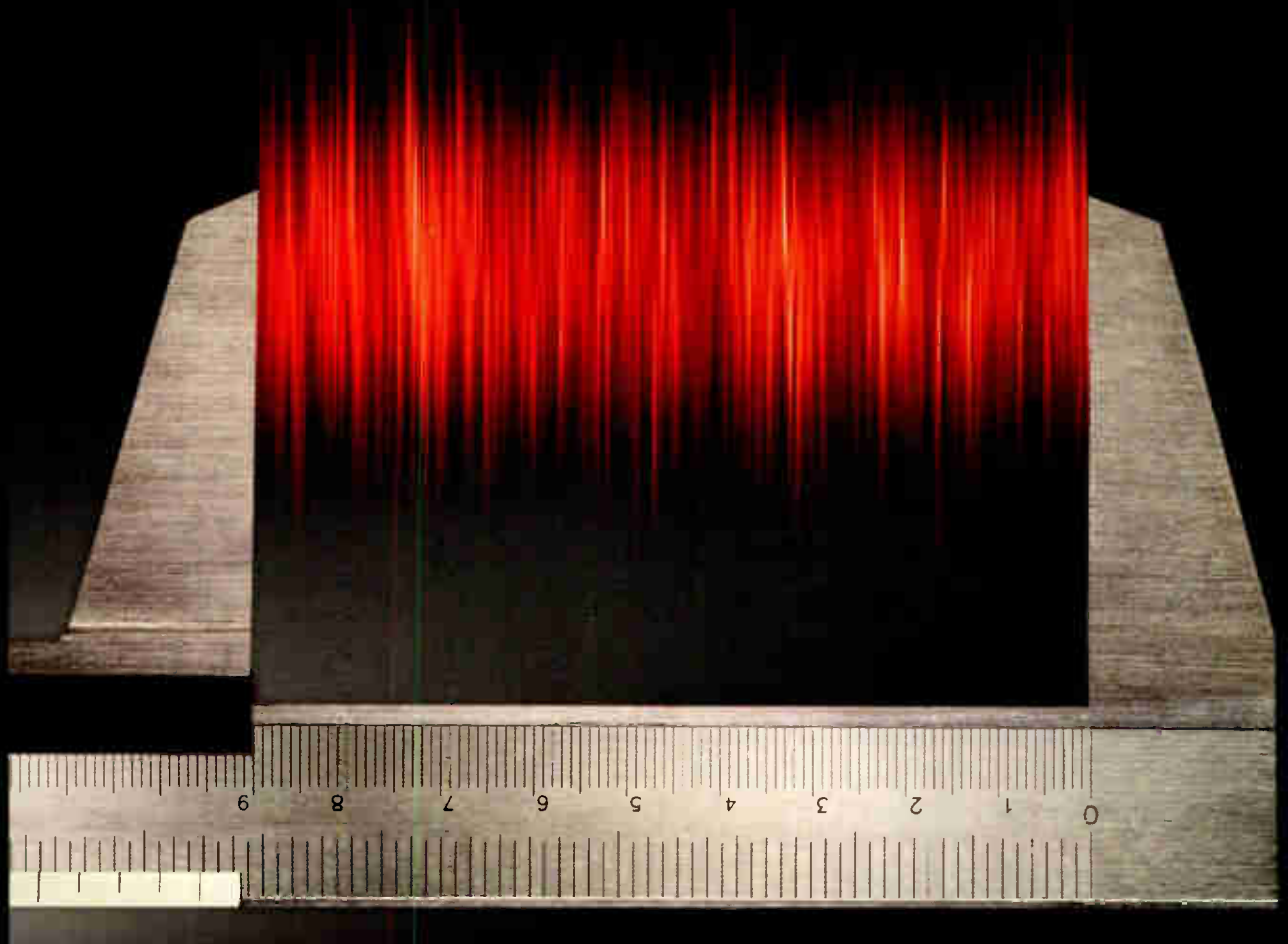
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POSTMASTER: Send address changes to Mix magazine, P.O. Box 638, Mt. Morris, IL 61054.

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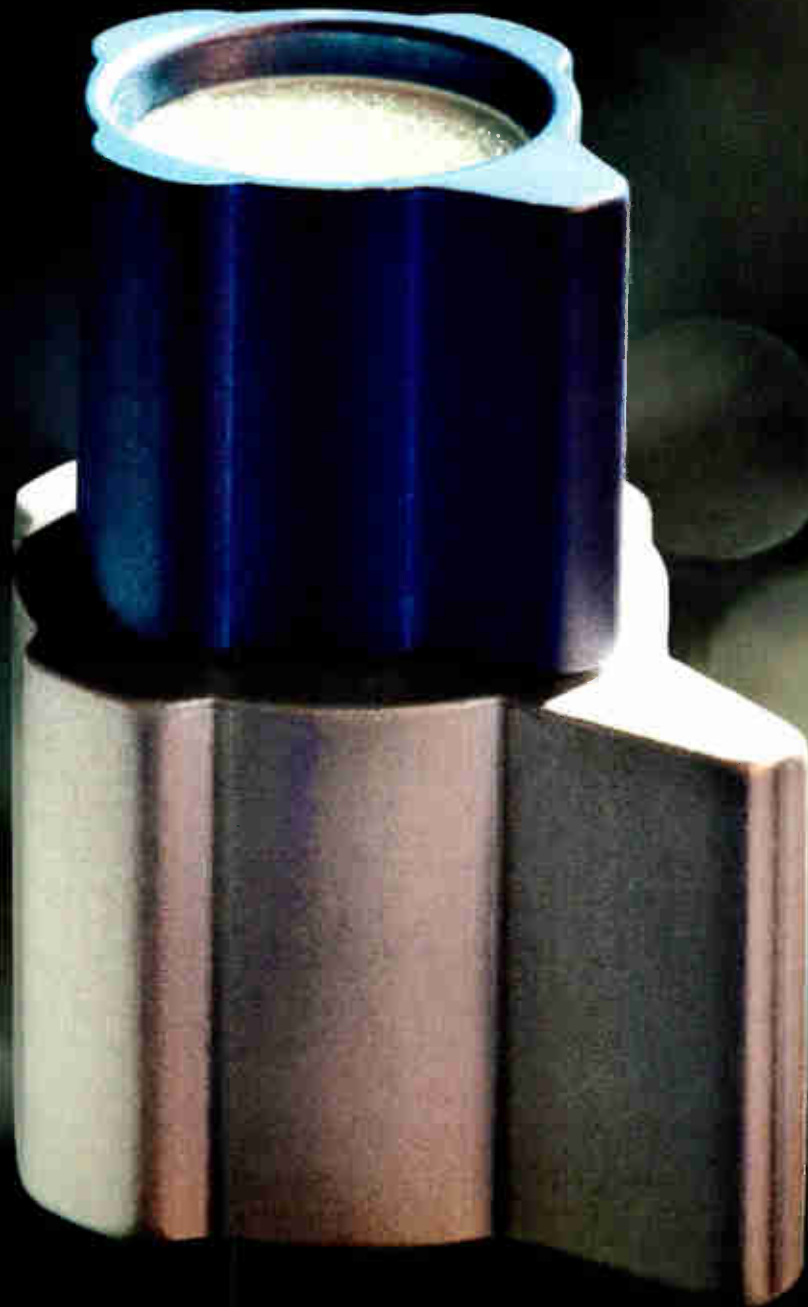
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I was happy to see Eddie Ciletti's "Tech's Files: The Kit Revival" article in the December 2008 issue, and am familiar with that odd mix of curiosity, creativity and necessity that draws some of us musicians to tinker with our gear and see if we couldn't just build it ourselves. The first truly awesome guitar tone I ever got was when I modded the little tube radio in our kitchen into a preamp for my silver-face Fender amp when I was a teenager. The article neglected to mention Build Your Own Clone (www.buildyourownclone.com), from which I assembled the "confidence booster" shown in the photo. When I mounted it in the half-pint mason jar, my 13-year-old daughter said, "I suppose you think that's really funny." (I actually think it's hysterical.) Maybe it's the mason-jar mojo, but it floored the guys in my band when we put it in front of a little Epiphone tube amp. The tone was great, but the real fun was hearing everyone ask, "You built that?"

Christopher Cassels

Christopher—We gotta agree with you about the mason-jar mojo. Finding the right enclosure for D.I.Y. kits is sometimes harder than building the circuit itself, and this one is cool. Also, thanks for the lead to the Build Your Own Clone site. There's a lot of good stuff there. —George Petersen

The New Standards

I'm writing in response to Gavin Lurssen's article in the December 2008 issue called "The Limits of Compression." Though not a parent for any length of time, I can relate to his analogy and applaud his point: "The responsibility of all engineering is to learn from and maintain standards." That's certainly my first step in understanding my sessions. I'm still optimistic about my work and growth as an engineer and am still fed by the original spirit that first drove me 30 years ago: real music that sounds good. These economic times shake all of our foundations in different ways, often forcing us to supplement our income in ways we thought we would never do again—added to which every kid with a computer can make something that sounds good as an MP3. Try to tell them that you can help them grow as musicians and recording artists, and see what they spend their money on instead.

In that regard, I was excited to read about "CODE" ("Mix Interview: T Bone Burnett," October

2008) and the future of our industry's integrity. But in talking about it with a more jaded friend of mine, he said he thought it neither mattered nor would it trickle down to the average person, the majority of whom do not pay for music and *do not care* what it sounds like as long as they get it in whatever form that's free.

I also wonder about our rapid advances in another regard. Our current arsenal of vintage emulations is truly amazing. Having once owned many of these toys in hardware, having 32 LA-2s available on a mix is a new experience, let alone always having many of the dream toys I used to only be able to rent to mix certain records, and then some. When Empirical Labs—which I thought would be a permanent holdout—announced it was allowing plug-in versions of the Distressor to be created, I realized that we are running out of emulations. These classic pieces were used because of their sound, created by engineers and designers with ears. "New" plug-ins offer products that attempt to do every-

thing in one piece, and usually do most of it poorly.

If we don't care what it sounds like, and we don't make new hardware to use in actual studios and develop a "sound" that's worth emulating, our virtual world will sound like a poor emulation of what [longtime engineers] remember music sounding like, and we will be the old guys complaining about the music of today. Before I buy the new Harrison EQ plug-in, say it ain't so—Gavin? T Bone? Anyone?

*David Saia
studioSSP
West Chester, Penn.*

There is some needed discussion about the loudness wars in the December 2008 issue of *Mix* ("Nashville Skyline," "The Limits of Compression"), but I'm not reading solutions. I'd like to read

an article with some actual tips on how to find a happy medium between a wide dynamic range and a competitive volume level on a master recording. I wish this volume war never started!

I'd like some recipes for mastering levels to be used on CD, radio and TV. I know there are no hard-and-fast rules, but some general concepts and perceived volume levels would be a good starting point to maybe begin the de-escalation of this terrible war. I'm not saying we need a timeline, but we need to begin talks now.

Chad Johnson

The Fine Print

You recently printed letters praising your new format and layout for *Mix* ("TalkBack," November 2008). The opinions expressed all seem to be positive. Is it possible that you never received any contrary points of view?

The typeface for articles is *too small*. Of all the magazines that I receive, *Mix* is the only one that is difficult to read. It is also the most important to me in my career. My optometrist tells me that I do not need reading glasses.

I scanned several examples of recent magazines: two pages from *Mix*, then a page each from *MacWorld*, *Consumer Reports* and the *Los Angeles Times*. They were all scanned at exactly the same resolution. If you will look at them, one after the other, you will see that the smallest and most squint-inducing by far is *Mix*. I'm sure you have made a decision to save paper in difficult economic times, but I think you have gone too far.

Les Brockmann



This month's Talkback question: How did the FCC wireless band changeover affect you? E-mail us at mixeditorial@mixonline.com.

A black and white photograph of an astronaut in a space suit floating in space, with the Earth's surface visible in the background. The astronaut is positioned on the left side of the frame, looking towards the right. The background is a dark, starry space with the curved horizon of the Earth showing some cloud detail.

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A photograph of two Genelec speakers, a smaller white one (6010A) and a larger white one (5040A), sitting on a dark surface. The larger speaker is on the right and has a prominent circular driver. The smaller one is on the left. Both have a clean, modern design.

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2 Hard Records—A Flexible Production Home in Kingston

Jeremy Harding's 2 Hard Records studio is also the home of the 2 Hard Records label. Harding is perhaps best known as the manager/producer of reggae/hip-hop star Sean Paul, but like many Jamaican producers, he does it all: engineering, producing, artist management, programming and playing. So Francis Manzella's design for the now one-year-old studio was tailored to accommodate Harding's various ways of working.

Manzella designed a modular cockpit-style station where different types of gear, on wheeled racks, can be pulled to, or pushed from, the central work area.

"He's an engineer/programmer/producer most of the time," Manzella explains. "In the front of the room is a 24-fader D-Command setup. He's 7 or 8 feet from the mains, and then he's got, wrapping around him on one side, all of his processing gear—all of his analog recording gear—and on the other side, all of his drum machines and MIDI stuff. So the way we worked this out, he can actually pivot those two wings of the setup and close his cockpit to a tight 'U,' where everything is easily at hand. When he's working with more people in the room, he can push those out.

"That was important to him to have this kind of ergonomics that works for him," the designer continues. "If he's only mixing, he just pushes that other stuff out of the way and pulls the mixing gear in close to him; and if he's recording or writing, he can pull the drums or the MIDI stuff up close and the room is configurable. It's a very simple thing, but it offers the room lots of flexibility because when you push that stuff out to the side, the room feels very big and open, but when he's working by himself and wants to have everything right at hand, it can feel very small."

Harding says that this ability to have various tools within reach is essential to a Jamaican way of working, where one person has a hand in all aspects of creating music. However, he feels the similarities between his studio and most other local facilities end there. "We have very famous studios here like Tuff Gong, where the Bob Marley music was done, and other famous studios in terms of reggae that had very good analog gear," Harding observes. "But the leap in studio design hadn't made it to the digital arena—that aesthetic of having a top-class studio didn't seem to translate for



Jeremy Harding's gear is placed on rolling racks that pivot in or out to reconfigure the studio as needed.

the latest generation of engineers and producers. It's almost like people thought that digital meant that studios could all be smaller—so small, in fact, that they could make studios in the corner of their bedroom with a PC and a mic on a stand. Even engineers who could afford proper spaces, something in their brains told them to go really small."

So Harding set a goal of developing a studio that would serve his own creative needs, as well as set a standard for other regional engineer/producers. He says that as a result of his building the 2 Hard studio and inviting outside engineers, artists and producers to work there, "A lot of young engineers have seen that it's not enough to be on Pro Tools. They have to have a good room, good monitors, and they can do these things in a way that complements their analog gear—they don't need to get rid of it. During the digital transition in Jamaica, a lot of engineers thought, 'It's digital now, we'll put the analog gear in the corner.' They didn't understand how to integrate things, and I think that has a lot to do with the fact that Jamaica is a developing country, and it took us a very long time to get on the whole computer train as a nation."

Harding, who studied audio production at the Trebas Institute in Montreal, Canada, and has 15-plus years of hands-on production experience, has definitely been riding that computer train. His his setup is centered around Pro Tools HD and D-Command. His wall-mounted mains are Manzella's proprietary Griffin C1.5 monitors.

Acoustically, Manzella says that the tracking room is "what we call a nice, classically medium-

sounding room—not too dead but has a room tone to it. It's not big enough to be a really live room. It's got a natural sound for recording anything from vocals to drums without getting a heavy room signature. The control room is treated very nicely. He didn't ask me to hold back on anything."

Not holding back meant that some materials—such as the control room glass, door hardware, etc.—had to be specialty-ordered from the U.S. It also meant hiring general contractor Steve Koontz, a former college classmate of Manzella's, to manage the job on-site. Koontz, who splits his time between homes in Jamaica and Miami, specializes in studio projects and has completed several Jamaican studios for local luminaries such as Shaggy and Buju Banton. For Manzella, on the other hand, Harding's place is the first Jamaican studio where he has seen his designs fully executed.

"This is the third project I've worked on in Jamaica and the first one that I've finished," Manzella says. "Hats off to Jeremy for actually finishing his project! And hats off to him for keeping performance very high on his criteria list. This was a special project for me because Jeremy had a vision to do something better, and not just 'let's just get it done.' On most projects, people reach that point of critical mass where they go into 'let's just get it done' mode, and yes we got there, but never at the expense of the final performance." ■

Barbara Schultz is the copy chief for Mix.

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GET YOUR GRAMMY ON!



The 51st Annual Grammy Awards will be held on February 8, 2009, and *Mix* is ready to take you backstage—past the red carpet, beyond the flowing stage curtains and into the production and mix trucks. Check out videos, nominee profiles, pictures and much more at mixonline.com/grammys.

Bud Prager, 1929-2008

Bud Prager, president of E.S.P. Management Inc., lost his year-long-plus battle with esophageal cancer at his home in Montauk, N.Y. on December 22. He started his music industry career working for SESAC, one of three performing-rights organizations in the U.S., attaining the position of general manager. During this period, he was also one of the founding members of the Country Music Association in Nashville.



From there, he went to Warner Bros. Records as an independent producer, then to Warner

Bros. Music as an independent publishing affiliate, setting up the gospel music division. In the 1960s, Prager formed independent label Windfall Records (distributed by CBS Records, now Sony), a partnership with Felix Pappalardi, the producer of many Cream albums. The company grew into Windfall Music Enterprises, which included (at various times) artist management, publishing, production and recording divisions. Later, Prager founded Phantom Records, distributed by RCA Records, and eventually ESP Management Inc.

Artists bearing his management stamp include Foreigner, Bad Company, Damn Yankees, Megadeth and others. He was also involved with the music careers of Dann Huff, Frank Filipetti, Gary Kurfirst, Mike Renault, Whitesnake, Corky Laing, The Youngbloods, the Chambers Brothers, Free, Mylon, Mitch Ryder and others.

A Wale of a Time

This spring's BBC television series "Bryn Close to Home," featuring classical singer Bryn Terfel, saw the artist giving a musical performance in tough terrains around his North Wales home. BBC Wales brought in former BBC sound supervisor Martin Gifford (who has set up his own company, 24Bit Ltd.), who used a SADiE LRX2 multitrack location recording interface for recording/editing. "My SADiE LRX was used in nearly every location, but in terms of technically challenging, the recording at the slate caverns definitely tops the bill," Gifford recalled. "For this, the Welsh electric folk group Ar Log performed with Bryn, using the above-ground village as a set. The group had pre-recorded multitrack backing tracks, which were not yet finished or mixed. The tracks arrived less than an hour before shooting was due to start, and I brought them into my LRX2 for replay and for Bryn to overdub the lead vocal, standing with headphones at the rear of my mobile sound truck. Of course several takes were necessary, and after instant multitrack editing on-site and replaying a timecoded sync mix, the whole project was returned to the band for further work and final mix, always keeping the live vocals in sync with the TV shoot."



Strange Weather Brewin'

Strangeweather (www.strangeweatherbrooklyn.com) is a nice little studio in Williamsburg, N.Y., opened as a joint venture between producer/engineer Joel Hamilton (Tom Waits, Jolie Holland, Soulive, Frank Black, Unsane, Talib Kweli) and his longtime assistant, Marc Alan Goodman, a great engineer in his own right and now moving into the chief engineer/owner position at the studio. Hamilton will be working both out of Strangeweather and Studio G Brooklyn, his longtime headquarters

with partner Tony Maimone.

The new room is geared toward outside engineers, and the gear choices and location were chosen to keep the younger bands and engineers in the loop. With an unparalleled gear and mic selection at their chosen day rate of \$450 a day for the room, the duo says they don't know of another studio in the New York City metro area that matches their value. (A day is defined as a 10-hour block of time, with room to move if the booking is for consecutive days, of course.)

The rate gets you a pretty stunning list of mics: U47s, M49s, M269, CMV563 and a ton of other classics. You also get to run all that classic goodness through the API 1608 console (32 returns at mix, 16 mic pre's), a pair of Avedis MA-5s or a pair of Sage SE-1 mic pre's—all Class-A. Other gear of note includes Pultecs, Bricasti M7, Lexicon PCM70, EMT 140, Echoplex and Sound Workshop reverbs. Monitoring is via NS-10s, Focals and JBL mid-field 4412s.

—David Weiss



MixBlog: Studio Design Backstory

Check out blog.mixonline.com/mixblog for updates from studio designer Larry Suist, who will detail the ongoing design and construction process of Legacy Studios in New York City.



on the move

Greg Westall,
Universal Audio VP of
product marketing

Main Responsibilities:
Managing a department that defines and details new products, product roadmaps and existing product life cycles



I knew I was working in the right

industry when: I found myself on the rooftop at Abbey Road gazing out at the sunset over London. When I watched and listened to Eddie Kramer remix Jimi Hendrix tracks from original 1/2-inch 4-track masters. Eddie had to cut some leader off the reel, so he gave me a piece of the original tape.

My favorite Winter NAMM event was:

The Alesis tent parties in the mid-'80s. That was back in the days of excess. They had the elephant and everything!

The last great book I read was: *Musophilia* by Oliver Sachs. His latest book is an interesting account of musical maladies and special abilities.

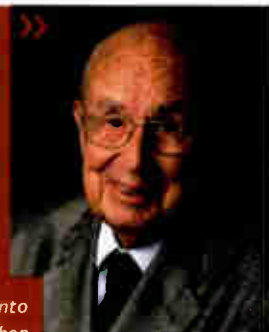
Currently in my iPod: Radiohead's *In Rainbows*. I've been listening a lot to Liam Finn; his latest record, *I'll Be Lightning*, is quite good, and his previous, *Betchadupa*, is stellar.

When I'm not in the office, you can find me: playing guitar in my bedroom studio or teaching my son to play—he's crazy good for a 14-year-old.

seen&heard

"Prof. Dr. Fritz Sennheiser's motto was to allow his developers to give free rein to their creative ideas, no matter how crazy they might seem."

—Sennheiser executive team's Volker Bartels on Dr. Fritz Sennheiser's (pictured) induction into the Consumer Electronics Association's Hall of Fame last October



Berklee's Logical Addition

Berkleemusic.com has added "Producing Music With Logic" to its online repertoire of classes. Professors Jeff Baust and David Doms take students from the basics to getting deep into instruments, editing environments, short cuts and more. Log on to berkleemusic.com for details.



Jeff Baust (left) and David Doms

250 million » Number of MP3 downloads from eMusic since 2003

Industry News

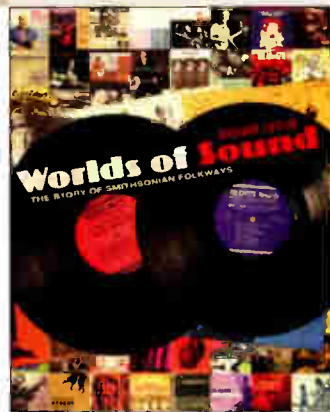
Harman Professional (Northridge, CA) added **Bill Raimondi**, group-wide director, sales U.S. distribution/strategic; **Alexander Rojas**, director of sales, Intercontinental South; and extended its relationship with rep **Dobbs-Stanford**, adding **AKG** to its supported product line...**Jochen Frohn** has been named to **L-Acoustics'** (Marcoussi, France) international business development director role...**Crown Audio** (Elkhart, IN) appointed **Vincent Tan** to business developer for Asia...**Jim Latimer** returns to **Symetrix** (Mountlake Terrace, WA) as Northern regional sales manager...New additions at **Lynx Studio Technology** (Costa Mesa, CA): hardware engineer **Stephen Kimura**, sales and support coordinator **Mike Nicoletti** and electronic testing tech **Frank Sutton**...**Meyer Sound** (Berkeley, CA) added **Tom Cavnar**, digital products support and service specialist, and **Chimène Stewart**, PR manager...PR manager for **Middle Atlantic Products** (Fairfield, NJ) is **Rebecca Trautner**...Distribution deals: **Audio Agent** (Seattle) reps for **Brauner Microphones** in the New York Tri-State area and for **Brent Averill Enterprises** in California, Nevada, New York and Nashville; **HME** (San Diego, CA) named **Professional Sound Systems** for the Denmark market; and **Ultrasone Inc.** (Wildomar, CA) signed with **Audio Distributors International** in Canada.



Jim Latimer



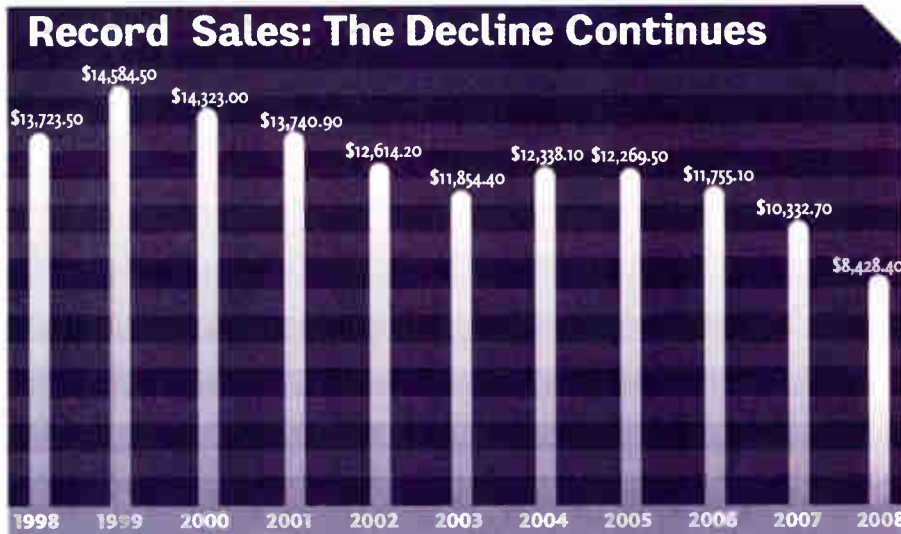
Rebecca Trautner



Bookshelf

Worlds of Sound: The Story of Smithsonian Folkways
by *Richard Carlin*

(Smithsonian Books, 269 pages)
Engineer and musical archivist Moses Asch founded the Smithsonian Folkways label in the late 1940s as part of his ambitious effort to document all of the sounds and types of American roots music. Richard Carlin's book documents Asch's journey, as well as the evolution of recording technology that Asch experienced first-hand. Also included are numerous stories and photos of the artists he recorded.



Figures (in millions) indicate the overall size of the U.S. sound recording industry based on label units sold.

—RIAA/Nielsen Soundscan

Corrections

David Byrne's front-of-house engineer is **Bruce Knight** not **Brian Knight**. The vocal mic is a **Neumann 105 capsule**, not a 104.

Mix regrets the errors.

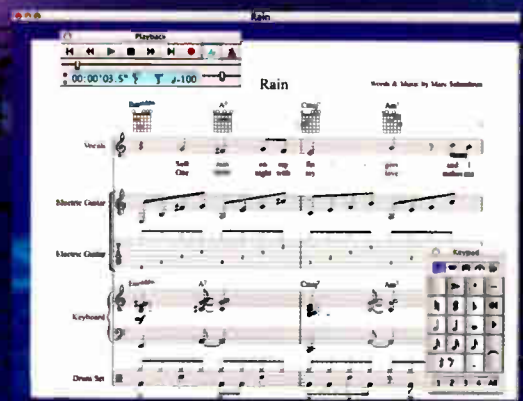
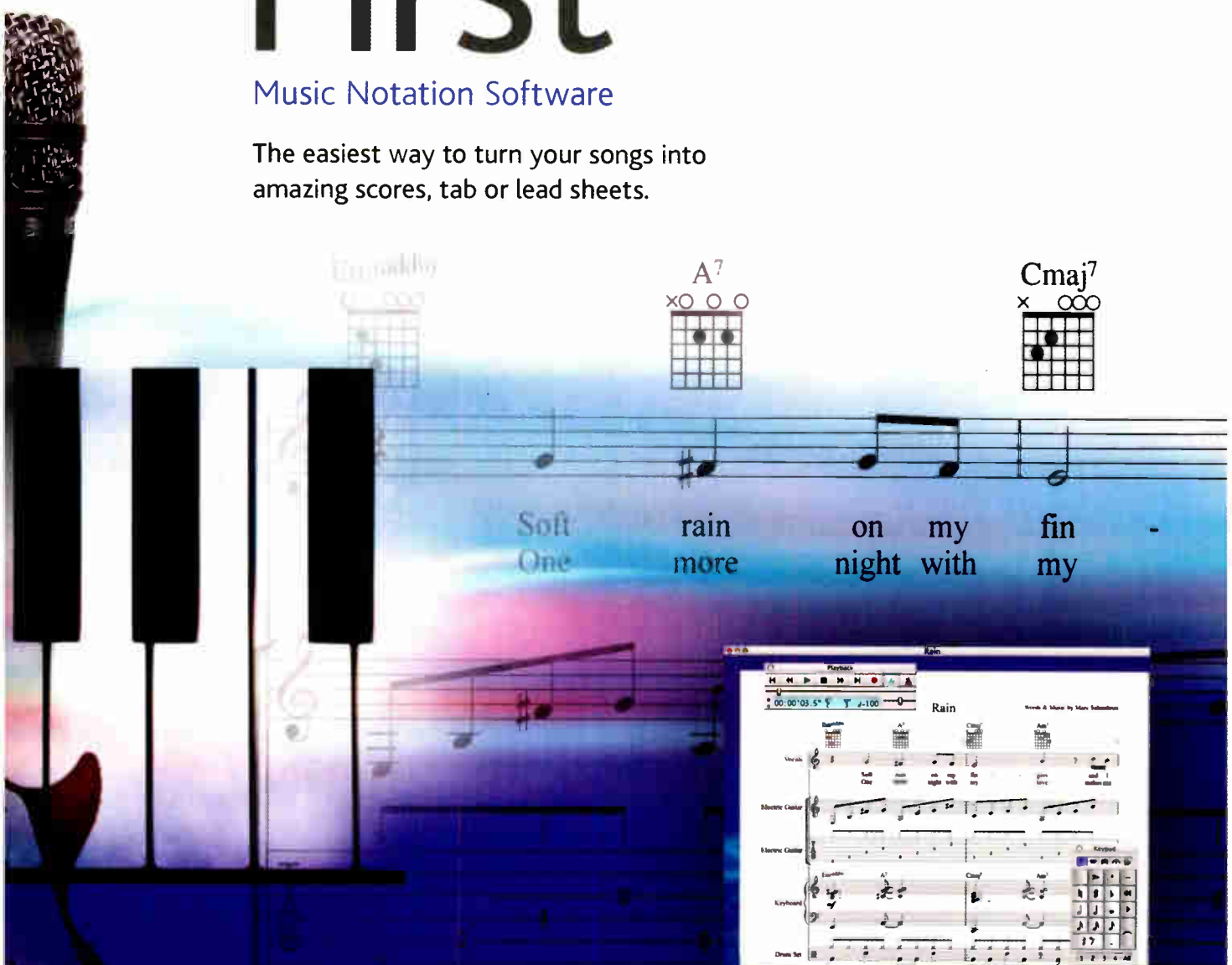


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-American Songwriter Magazine

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SESSIONS

Huun Huur Tu—Capturing an Ancient Vocal Art



Huun Huur Tu's upcoming *Klassika* album includes a DVD with interviews and performance footage.

Engineer John Cuniberti took on the challenge of a lifetime when he agreed to record *Klassika*, a forthcoming CD/DVD from Huun Huur Tu, a quartet of Tuvan throat singers that are considered masters in an ancient spiritual art

form that must be heard—clearly heard—to be understood.

Throat singing, or *xöömei*, is a technique where one vocalist produces multiple pitches simultaneously. One may hear a deep, low chant and a high-pitched chirp or whistle, and multiple other harmonics emanating from one singer. The Tuvans, who hail from the region of Tuva just north of Mongolia in southern Siberia, use song to describe their natural surroundings, whether it be the animals, mountains and grasslands, or the movement of wind, water and light.

From a technical perspective, recording an ancient art form and ancient stringed instruments requires precision and absolute transparency. "I wanted to capture the instruments and voices in the purest possible way," says Cuniberti, who recorded the group at Fantasy Studios in Berkeley, Calif. "I took a more purist approach, similar to how you might record a symphony orchestra or a string

quartet: good mics in the right position through transparent mic pre's straight to hard drive with minimal signal path."

Vocal mics were arguably the most important links in the chain. "I needed mics that were precise and reliable that could handle a high dynamic range and provide a wide frequency response," says Cuniberti. "They also had to be quiet." Telefunken supplied an assortment of mics that met his requirements: AK47s, M16s and an Elam 250 for the vocals; and M260s for the instruments.

Recording direct to Pro Tools HD3 through 16 channels of Millennia Media's HV-3D mic pre's, Cuniberti aimed to re-create the group's live setting as closely as possible to maintain authenticity and comfort for the foursome, who had little professional recording experience.

Cuniberti arranged the musicians in an arc, divided by gobos, with the drummer in an iso booth. "He plays a large bass drum that

got on every microphone," says Cuniberti. "Fortunately, the booth had a window large enough to maintain eye contact so it didn't pose a problem."

Opposite the glass, the group played live with minimal overdubs. "Often the singing was so delicate and the bow playing so aggressive that I needed to record them separately," adds Cuniberti. "When I explained that the level of their voice presentation was significantly lower than their bowing and was getting on the mic, they allowed me to do that."

Huun Huur Tu's *Klassika* will be released in early to mid-2009, accompanied by a DVD featuring interviews, information on Tuva, and live studio and performance footage.

"As I started to understand the music and the culture," Cuniberti says, "I saw this as an opportunity to share with the world something that is really quite unique."

—Heather Johnson

project studio Chiller Sound



John Altschiller calls his Chiller Sound a "high-end boutique overdub/mix room."

Located in New York's Chelsea neighborhood, Chiller Sound (www.chillersound.com) reflects its owner's good nature and wide-ranging tastes. In addition to recent projects recording Disco Biscuits, Deborah Harry and Bob Weir's RatDog, John Altschiller has mixed multiple artists (Ben Folds, My Morning Jacket, The Roots) for broadcast on the FUSE network, and mastered *Grand Theft Audio IV* and EMI's Jim Croce, Motown and Phil Spector compilations. Designed by Francis Manzella, Chiller Sound's 2,000-square-foot space (outfitted with RPG and Auralex diffusers) is equipped for live recording, but Altschiller views his studio more "as a high-end boutique overdub/mix room."

Altschiller runs Apple Mac Pro G5/Digidesign Pro Tools HD Accel 3 7.4 (Apogee AD-16X converters) from a Digidesign ProControl, splitting his mix into 16 individual outputs into Chris Muth's Dangerous-2 16x2 summing mixer. "It's like putting a Neve console

Music Mix Mobile—New Truck in Town



Two of the four partners: engineers John Harris (left) and Joel Singer with the Music Mix Mobile Truck

The Music Mix Mobile remote/broadcast audio facility went online in July 2008 with a brand-new truck and separate flightpack systems equipped with full-blown Pro Tools recorders, D-Control/D-Command surfaces, Genelec surround monitoring and more than 112 channels of Grace Design preamps. The facility is owned and run by A-list veteran engineers John Harris, Mitch Makentansky, Joel Singer and Jay Vicari—four friends who have been at this business for years, capturing and mixing everything from club recordings to concerts at Madison Square Garden to the biggest televised music award shows.

"We decided that anything worth doing is worth overdoing," Singer says. "We purchased a new top-of-the-line Freight-

liner chassis, and had a custom control room from Boulevard Body Works installed. We overdesigned the climate, electric and acoustic systems, and then installed top-end recording equipment. We wanted the best sonically as a front end in preamps and chose two 56-channel M802 racks of Grace Design

preamps for the front end with the digital AES cards installed, and connected to the truck via TAC4 fiber. The mixer is a separate Pro Tools HD6 system running plug-ins from Waves, TC Electronic, McDSP, Sonnox, Sound Toys, Digidesign and more. There are master and safety recorders, Pro Tools expanded HD Systems, so we're able to record 160 channels with each system—128 channels from the stage and 32 additional channels locally at the truck."

Music Mix Mobile's projects include Bon Jovi in Central Park, the Sundance Channel's *Spectacle* with Elvis Costello, *Rosie O'Donnell Live*, Fall Out Boy, Coldplay, Beck and more. For more details and photos, visit www.mixonline.com.

—Barbara Schultz

Track Sheet

American Sound Recording (Bakersfield, CA) offers three Pro Tools–based recording studios within a 10,000-square-foot facility. Though Bakersfield is, in its way, a pretty

famous music town, the challenges of keeping a multiroom commercial facility going in a non-major market have forced the owners to be creative—in ways that benefit local artists and school kids. "One of the unique services is what we call 'Recording Star Parties,'" says owner Josh Graham. "Kids or adults can bring their friends to a two-hour party, where they record to backing tracks, dress up, take pictures. We also give music lessons, sell music accessories and hold Songwriter Open-Mic nights—all in an effort to encourage growth in music and the arts in Bakersfield. However, we are not just a novelty or kids thing. Studio A has a 1,500-square-foot tracking room with walnut floors, rock walls and four iso booths. We have a great selection of gear, mics, plug-ins, et cetera. I

believe we have some unique ideas that have helped us survive."...Metalworks Studios (Toronto, Canada) celebrated 30 years in the business. Originally founded as a workspace for metal band Triumph, the facility now includes six recording, mastering and DVD-authoring rooms that have served artists from David Bowie to NSync to Feist and others...Prairie Sun Studios (Cotati, CA) hosted some international artists, in addition to the facility's usual parade of regional musicians. French group Babx mixed with engineer Oz Fritz in Studio A. Fritz also mixed the band Cloudmachine, who hail from the Netherlands...Clatter&Din (Seattle) added two Russ Berger–designed surround studios and a new tracking booth. At press time, the new rooms were about to go online.

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



The main tracking room of American Sound Recording, Bakersfield, Calif.

by Ken Micallef

at unity gain," he explains. "I can then push my level to about +24, about 8 dB hotter than normal. From the Dangerous I go into an analog compressor or EQ, usually a pair of Helios mic pre's for warmth. Then I'll choose a compressor."

Compressors include two API 525, two Anthony DeMaria Labs ADL1000s, Tube-Tech LCA 2B and Vintech Custom Shop 609CA. "After compression," Altschiller continues, "I re-record through the Apogee Special Edition AD8000s. Pro Tools cycles back and I re-record to 2-track; then I can stack mixes as time goes on."

Altschiller has recorded everything from string quartets to folk singers to Pearl Jam drum overdubs in his space (using his Yamaha Oak Custom kit), and he can talk for hours about his mic collection (BLUE Dragonfly, Gefell M3000, Neumann U67 and 87, Telefunken/BLUE U47

and more), but his pulse really rises over the possibilities offered by plug-ins.

"I use Waves' Mercury, Q Clone, SSL 4000 and Universal Audio Neve packages, and Bomb Factory Fairchild—it gives girth to guitar and vocals. For EQ, the Sonnox Oxford is really precise, but the Massenburg MDW 5B EQ is phenomenal; it can take input level and won't distort. And you can invert the frequency and really zero-in on what you want," he enthuses.

Instruments also abound, from an ancient LinnDrum to a 1968 Gibson ES335 guitar, Wurliizer electric piano and a 1969 Guild D-40. Analog signals relay via various mic pre's: two API 312s, Focusrite ISA 428, two Great River NP2NVs, Millennia HV-3D-8, four Neve 33115s, Summit Audio MPC-100A and a Tube-Tech MEC 1A.

Altschiller often mixes live performances for

DVD and broadcast, so surround monitor support is a must. (He vehemently believes in running bass, not just sound effects, through the subwoofer channel.) Altschiller's Blue Sky SAT 6.5s complement a pair of Genelec 1031As for 2-channel.

Out in the Chiller lounge, Gold and Platinum discs from Dave Matthews Band, Phish, John Mayer and Simon & Garfunkel attest to Altschiller's successful 18-year career.

"When I was called to do [Phish's] *Rift*," Altschiller says, "all of a sudden being in Phish's camp helped. But it helps more now than it did then. It gave me some credibility. At the end of the day, I just like to sit between speakers and make music sound good. Let's just get it done. No problems, only solutions." III

Freelance writer Ken Micallef lives in New York City.

Cross a Southern gentleman with death metal, and what do you get? Chris Adler, the drummer for modern-day heavy sound icons Lamb of God. As fiercely aggressive, powerful, precise and mathematically accurate behind the kit as he is soft-spoken everywhere else, Adler left his band's Virginia home base

to record the drums for LOG's sixth album, *Wrath*, in the urban forest of New York City.

Chris Adler of Lamb of God: part-Southern gentleman, part-metalhead

Adler's trip up north to Electric Lady Studios (www.electrictadystudios.com) to work with emerging star producer Josh Wilbur (www.aaminc.com) illustrates that New York City is still a desirable destination for artists working on the elite level. For Wilbur and the Grammy-nominated Lamb of God, the huge live room

and SSL 9000J of Electric Lady's Studio A were ideal to follow the 2006 *Sacramento*, which had seen Wilbur recording the drums for producer Machine at New York City's Spin Music Studios.

"Electric Lady's Studio A is huge—about three-quarters the size of a basketball court," Wilbur explains of the studio choice. "It's a darker room than Spin, and I thought it might be cool for this record to go a little darker and larger. Keep in mind that for cymbals, no matter how close you mike them, you can't get rid of the characteristics of the room—just being in it will alter the sound."

Wilbur (Steve Earle, Fuel, Avril Lavigne), who has been gaining notoriety in no small part for his ability to record superb drum sounds for albums that he's engineering or producing, explains his approach to capturing Adler's machine-like mastery of his double-kick Mapex drumkit.

"Everyone wants to know what mics you put on the kit," says Wilbur. "I did things very similarly to the way I did on *Sacramento*—I even used the exact same Shure SM57. Chris' toms are too close to

the snare to get a full 57 in there, so we unscrewed the mic in half and extended the cables so that essentially the 57 was 2 inches long and put that in front of the kit. I also took a Shure Beta 98/S and taped it to the 57 so I could have a dynamic and a condenser mic, with a little piece of Moon Gel in between so the vibrations wouldn't screw it up. The 98 gets more of a pong sound out of Chris' snare, and the 57 is a little more crack."

In addition to a Shure Beta 52A on the kick drum and an array of AKG 451s on Adler's multitude of cymbals, Wilbur employed his trustiest secret weapon: a budget pair of Audio-Technicas that have been his go-to stereo room mics for more than 10 years. "I almost always A/B them against a Neumann U87 or a tube mic or some kind or ribbon, and I always come back to these mics," he says with a laugh. "They just sound like you're *in there*, and that's what you want in a great drum room like Electric Lady."

Next in the signal path, Wilbur specifies API, Neve and the SSL's stock mic pre's. "Neves have a very soft, pillowy bottom, and the APIs sound sharp and aggressive to me—the hi-hats and a lot of cymbals are the APIs," notes Wilbur. "When SSL made the J, they kind of chased the Neve mic pre. They're designed better than what was in the G Series, and I think they're great."

Recording at 96kHz/24-bit to Digidesign Pro Tools HD3, Wilbur relied on his extensive SSL training to fly on Studio A's 80-input 9000J for tracking and mixing duties. He was assisted in the editing phase by Paul Suarez. "We ended up having 30 mics on this kit," Wilbur states. "When it's all said and done, in the actual mix the mics that are always open are the main cymbals, room, snare and kick. But all of the other mics' files we delete in Pro Tools except for when their instruments are actually hit. The idea is that I don't need the bleed from an open mic for six minutes waiting for a bell to be struck once. We're making a metal record: It's got to be tight and sharp."

Adding to the intensity of the fast-paced sessions—two meticulous metal songs a day for 10 days straight—was the fact that the band and Epic Records installed live Webcams in the live room



The band worked in Electric Lady Studio A

(complete with mic) and control room (no microphone) to give fans a view of all the proceedings as they unfolded in real time. Although it took a couple of days for Wilbur and Adler to get used to their reality-show status, the pair ultimately had no choice but to focus on the task of recording the Southern gent's massive drum tracks.

"I like recording drums because—and I'm quoting the producer Garth Richardson here—it's a big ship to steer," Wilbur concludes. "That would make Chris Adler's drums an aircraft carrier: That shit is huge, with a lot of planes taking off and landing!"

Send New York news to david@dwords.com.

When it came time to record Buddy Guy, Tom Hambridge figured Nashville was the best place to make an album of ferocious Chicago blues.

"I can put together a team down here that can rival anything, anywhere in the world," says Hambridge, who produced Guy's Grammy-nominated *Skin Deep*. "There's more done down here by 10:30 in the morning than happens all day in most cities. People are up at sunrise, writing songs and making music. And they get real

So that's the setup—oh, and the classic Buddy Guy amp setup is treble and mids up to 10, and bass on 3—but that's not what is causing Guy to say that this may be the best album of his 50-year career. Hubris isn't what's causing him to say that, either, if we're to believe the Grammy nomination and the glowing reviews from a bevy of critics.

"Buddy told me he'd made a lot of records where he said he didn't know the material and didn't feel associated with the material," Hambridge says. "He didn't like a lot of the things he had done. He's a wonderful person and a legend, and he's soft-spoken and not apt to speak up if he's uncomfortable. He asked what I would do, and I said, 'I would build the house together. Start by digging the ground.'"

By that, Hambridge means that he helps write the songs, finds the musicians, plays drums (though he brought in Richie Hayward of Little Feat for two tracks) and writes arrangements. What's different about Hambridge's work is that all that involvement doesn't necessarily result in a "Hambridge Sound." He's more interested in helping create something unique to the artist.

"This started with me riding the bus with Buddy, and listening to him talk about his life," Hambridge recalls. "One time, he said, 'You know, Tom, I've been in this business a long time and alligators is my associates.' Alligators, like business people. So then I went back home to Nashville and wrote, 'When I was a little boy, I used to crawl around on the ground with rattlesnakes/Now I'm a full-grown man, alligators is my associates.'"

Guy smiled when he heard the demos Hambridge created in Nashville. And then he often weighed in with a story or a fact-check that would send Hambridge back to edit the work. In the end, they arrived at something Guy felt was personal and even revelatory. During the recording sessions, Guy said he sometimes went back to his hotel room, listened to the roughs and cried. And during the sessions, Hambridge took care to get whole takes rather than parsing things, and he took care to ignore any impulse to keep things safe or controlled.

"Sometimes, Buddy will play something that isn't even in the key," Hambridge says. "And it's like, 'What was that? Was that even a note? It's in between notes. Was it in time? I don't even know.' Well, some of those places are the magi-

good and real efficient."

That's not to say that Hambridge—who has also produced Grammy-nominated albums for Johnny Winter and Susan Tedeschi, and who has written songs recorded by Lynyrd Skynyrd, George Thorogood, Delbert McClinton, Montgomery Gentry and others—had anything in mind that approached a polished "Nashville Sound." And while Hambridge chose to work at Blackbird's Studio D on the world's largest (96 channels, 192 inputs, 200 faders) API Legacy Plus, he was as interested in vibe as in gear. Hambridge and engineer Vance Powell (The Raconteurs, Jars of Clay, Martina McBride) set up the floor to look more like a music store than a recording studio.

"This is Buddy Guy, and we wanted him to record the way he plays, and that's loud and wild," Hambridge says. "So we strung six amps together, and everything's maxed out on those amps. All six amps were wide-open and used on every song. The sound is in Buddy's fingers and in all these amps. Each amp was recorded to its own track in Pro Tools so we could change levels if we wanted to later. After we had complete takes, we printed a guitar mix through the fantastic chamber at Blackbird, and we wound up with a total of 11 guitar tracks."

Powell miked Guy's Chicago Blues Box amps—they're similar to the 1959 Fender Bassman—with a Neumann U67 and a Shure SM57 placed close together. He brought in four other amps, at first to give Guy "choices," though the first time Guy played through the six amps at once, he was sold on the combo platter. So then there was the Marshall Super Lead 100 through a 4x12 cabinet with an SM57, an early '60s Fender Vibraverb with a Royer 121 ribbon mic, a genuine 1959 Bassman with an AEA R92, and a 100-watt MesaBoogie combo with a Royer 122.

"I also used a Neumann M50, compressed with an 1176, as a room mic," Powell says. "All mics went into a rack of Neve 1073s to the API console."

cal highlights. You'll see someone writing about those places later on, saying, 'The lick he did there, no one has even attempted.' So that's music. And that's Buddy Guy. Why would I slick that up to make it sound like something that's been done already?"



Tom Hambridge in Blackbird Studio D during sessions for *Skin Deep*

PHOTO: PETER COOPER

Multiple amps were ready to capture Buddy Guy's guitar work.



Send Nashville news to peter@petercoopermusic.com.

L.A. Grapevine

by Bud Scoppa

Since 1999, Leo Mellace (pronounced Mell-ACH-eh) and Steve Catizone have been building their rep as a songwriting/production team while also operating Boston's Sanctum Sound. Just over a year ago, the two Boston natives expanded their operation, setting up Sanctum L.A. on the Westside in partnership with Bennett Productions, while retaining the Boston site. The existing space had been designed for voice-overs and post-production,

environment. These guys are driven and talented.

"We do production and songwriting—that's what drives us," Mellace says emphatically. "That's why we've been able to have a studio for 10 years. We never wanted to be studio owners; it's just a place where we work."

Catizone picks up the thought: "We added a couple of pieces here and there, and before we knew it people wanted to come in and work. So we've invested in what we do, as opposed to what some engineer told us we might need."

Back to Mellace: "What makes us different from most studios

is, if you go to a bigger studio, you basically get a beautiful room, all the amenities, nice flavored coffee and an assistant. With us, you get two great sets of ears and some great musicians

willing to lend a hand if it's needed on the session. We just want to be a part of making that situation better. Whether we get five grand or 50 grand, we put the same effort in. What we've done is, we've made it affordable for you to get the whole package for the studio expense."

Their willingness to do whatever it takes to optimize a project has born fruit in a number of instances. In recent months, they've cut albums or tracks with Godsmack frontman Sully Erna, R&B singer JoJo—both signed to Universal Records—and Norwegian artist Siri Stranger, who's signed to Wyclef Jean's label. They made a Christmas album with Earth, Wind & Fire, which was recorded and mixed in two weeks flat, with all three rooms going full-time. They also contributed a couple of tracks to an upcoming solo album from the Pussycat Dolls' Carmit Bachar, and they're producing an intriguing new artist named Ma'ayan Castel, working with A-list engineer Rich Trevali (Robin Thicke, Gwen Stefani), drummer Charles Haynes (Me'shell Ndegeocello, Kanye West) and keyboardist Steve Hunt (Allan Holdsworth, Stanley Clarke).

Depending on the budget, the partners do whatever it takes to get the job done. For example, they tracked Stranger's album at New York's Magic Shop on a vintage Neve, cut the vocals and did the edits at their "spot," as Mellace refers to it, and mixed at Wyclef Jean's Platinum Sound on an SSL.

"Other budgets wouldn't allow for all that," says Mellace, "so on those it would be all in the box. We're comfortable in Pro Tools; we cut our teeth on it and we work this format every day."

Tracks from some of these recordings, as well as a couple of cool demos they co-wrote and worked up with Cherone, are streaming on sanctumsound.com, a well-designed site with tons of info on both of the partners' facilities.

"I'm an old-school guy at heart," says Mellace. "I love talking to people like Rose Cherny and Jeff Greenberg—their stories and history are incredible, and I have so much respect for them. We'd like to be a part of what they do and bring what we do to *enhance* what they've created, not take away from it.

"This is a story still in development," he continues. "We're trying to have a spot where we can do a lot of things for artists. We just need to get the word out."

Verdeen White of Earth, Wind & Fire with Sanctum owners Leo Mellace and Steve Catizone



with a tracking room in the center surrounded by three control rooms. The setup turned out to be perfect for Mellace and Catizone, who tend to have a lot going on at any given moment.

On the day I visited, veteran engineer Gary Lux was in Studio C mixing a live show to 5.1 on an ICON D-Control, a Bennett crew was shooting a TV project in B (which boasts a D-Command) and the partners were sequestered in A, working up material for an upcoming solo project from Extreme frontman Gary Cherone, switching off between a C/24 and a PowerMac G5. The A room is intimate and inviting; two of the walls are covered by red-velvet drapes, with fanciful paintings here and there and similarly stylized brush strokes accenting the windows looking into the adjacent tracking room and iso booth.

Once they took the plunge, it didn't take long for Mellace and Catizone to acclimate themselves to the West Coast. "We're living in Westlake Village," says Catizone, "and we drive to work through a canyon that empties you out at the beach. What's not to like?"

At first, the partners were spending an average of four or five days a month back in Boston, but they plan to cut down on the cross-country travel this year. "The people that crab about the West Coast are either being lied to or it's a conspiracy," Mellace quips. "The West Coast is where you should live—it's beautiful here. We're so East Coast, but we're tryin' to adopt that L.A. cool."

Mellace and Catizone don't need to wear Celtics jerseys or Red Sox caps to exude the gritty vitality of their hometown—and that's precisely what makes them such a breath of fresh air in this laid-back

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World Radio History

Portable Production

TAKING THE STUDIO ON THE ROAD

By Kevin Becka

Portable production has been evolving steadily in the past three decades. In the early days, there was the need to transport large-format digital and analog multitrack machines, mixers and the copper cable necessary to make it all work together. The landmark release of the Alesis ADAT in the early '90s took quality, convenience and affordability to a whole new level: Not only was quality multitrack digital recording technology suddenly within the reach of everyday engineers, it came in a rackmountable, modular format that was easily and inexpensively set up and shipped. The possibilities for remote operation were expanding. But the real shift came in early 2000, when engineers started truly embracing computer technology, trusting DAWs, interfaces, converters and plug-ins as convenient and reliable road gear. Today's affordable and portable technology lets engineers take an entire studio on the road, whether the rig is a simple laptop and headphone setup for tracking and editing, or one that incorporates portable interfaces, MADI converters, speakers and even small trucks for producing and recording music for live feeds, streaming or distribution.

Although traditional brick-and-mortar studios have been hurt by the ease and low cost of remote produc-

tion, they have also adapted by working with producers who use portable rigs, adding special touches that can't be achieved in the field. For instance, bandmembers who want to take their time doing vocals at home might use a larger facility to record drums in a well-isolated room with a good ambient signature. The outcome is a broader palette of production styles, gear choices and flavors of output, whether producing for live broadcast, the Web, CD/DVD release or remote recording. We talked with a cross-section of nomadic engineers, musicians and music creators who have adapted to the new production model.

Regional Production

Michael Comstock's Indre Recording and Production (www.indre.com), located just outside of Philadelphia, is a case study in adapting a successful business model to new technologies. Indre started as a traditional recording studio in 1996 and eventually evolved into a thriving remote production business.

"When I started, bands would come in with \$4,000 to do their record," Comstock says. "Now that same band will take that money and buy Pro Tools [systems], mics and preamps to make their own studio." In 2006,



Comstock converted his business into a 100-percent mobile model and never looked back. Indre has an upscale client base, and its projects include a Harry Connick Jr. Christmas special for AOL Music and live concert broadcasts of My Morning Jacket and The Decemberists for NPR.

Indre's business revolves around a small production truck housing a Yamaha 02R96 digital console, Apogee Big Ben Master Clock, Pro Tools HD3 (80 channels), Apple Logic Pro Version 8 (64 channels), Genelec 1031A monitors and a digital signal flow from the stage. "MADI has changed how we record remotely," says Comstock. "It is easy to run, supports an amazing amount of data and eliminates any ground or RF issues with the venue." The feed to Indre's truck starts from the stage, with Radial OX8 three-way splitters feeding eight PreSonus DigiMax LT preamps offering 56 total channels. The DigiMax LTs' optical outputs feed an RME ADI-648 ADAT/MADI converter that then takes the signal to the truck. Once in the mobile studio, the signal feeds an RME MADI router to the

console, then Pro Tools and Logic 8 for redundant recording. When the truck is not an option, Indre uses "flypacks" comprising dual Pro Tools HD3 systems stored in flight cases.

The call for processing depends on the job. "I'll use some processing for a live broadcast, but for the most part keep it simple for a straight recording." When tracks call for on-site sweetening, Comstock turns to some plug-ins, but mostly relies on the EQ and dynamics built into his Yamaha 02R96. "It's great to have the hands-on feel of the console when we're live at the venue," he says.

Out of Africa

Engineer Michael Gassert's work spans from traditional studio work at Mix B in New York City, which he co-founded, to remote work with Bachir Attar & Master Musicians of Jajouka (www.jajouka.com), an ancient village in the blue Djebala foothills of the Rif mountains in northern Morocco. Brian Jones of the Rolling Stones was the first to record the group in 1968. Gassert says, "I have done several record-

ings with them on tour and in the village over the last three years. We are releasing our first record together and their first in almost a decade, recorded live in Lisbon."

Gassert tracks on a MacBook Pro running MOTU's Digital Performer. He uses Metric Halo Mobile I/O 2882+DSP converters, as well as custom-built Neve and API clone preamps into an RME Fireface 800 that's ported into his Mac G4 laptop. For the front end, he uses a variety of mics from Schoeps, plus Sennheiser RE20s, 421s and 441s; AKG C 1000s and 414s; and Neumann TLM193s.

For the finished product, Gassert starts with some remote editing and reference mixes for the band, which he sweetens in the field using Waves Diamond Bundle plug-ins and ambience from the Audio Ease Altiverb convolution reverb plug-in. He then takes it back to Mix B for the final touches, using a combination of the previously mentioned plug-ins and outboard gear. "I'll generally warm things up with a Culture Vulture [from Thermionic Culture] and the Avalon 747VT compressor/EQ, or sometimes I'll

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Portable Production



Michael Comstock converted his studio business to a 100-percent mobile model three years ago.

use our Eventide H8000 for effects or even our Fulltone tap-tube echo," he says. To get from the outboard gear back to Digital Performer, Gas-sert uses Apogee converters or sums it through an Allen & Heath GS3000 mixer.

Rockin' the Laptop

Los Angeles-based band Hillbilly Herald (www.hillbillyherald.com) comprises Jimmy Herald (vocals), Mark Hill (guitar), Adam Wolf (bass) and Kyle Cunningham (drums). The band has embraced the "less-is-more" production standard for reasons of both quality and cost. "You can record now virtually for nothing," says Herald about the upside of recording outside a studio. "You can be creative without having to

spend millions of dollars and get your product out there."

For writing and laying tracks for final mixing, Herald and Hill use a 2.2GHz Apple MacBook Intel Core Duo with 1 GB of RAM, an Apogee Duet interface and a Shure Beta 87C into Apple's GarageBand and Logic Pro. Hill likes the simplicity of the Duet: "The fewer the cables, the better," he says. "It's the kind of thing you want to set up quickly, whether it's a rehearsal or in someone's apartment."

Hill's background in music and recording was formed at various studios in Austin. "I used to be a huge Pro Tools guy, but I made the switch to Logic in the past year," he says. "It was a hard thing for me to do, but I think Pro Tools



has fallen a bit behind." It's important to him that the same company that makes his computer also makes his DAW, which allows for quick software updates without worrying about operating system compatibility.

The production process begins with writer/singer Jimmy Herald laying down rudimentary bass parts into GarageBand to an Apple Loop of a rock drum kit. Once the song structure is figured out and basic guitars and vocals are recorded, Hill imports the tracks into Logic Pro and then uses Toontrack's Superior Drummer

from scratch. Hill adds, "I've worked in a lot of studios, and I can't believe what you can do now with just a few things—and you can get it sounding really great."

New York State of Recording

New York drummer Billy Ward (www.billyward.com) has played with such notable artists as Joan Osborne, Carly Simon, Robbie Robertson, Bill Evans and B.B. King, and is no stranger to affordable portable production. Ward recorded his own CDs, *Two Hands Clapping* and *Out the*



Hillbilly Herald (including Mark Hill, guitar, and Jimmy Herald, vocals) tracks to Logic Pro and Garage Band on a laptop.

2 to program a detailed drum track. From there, he plugs his guitar directly into an Apogee Duet and uses either Logic's built-in amp simulator or Overloud's TH1 guitar amp simulator plug-in to prepare the track for live drums.

The band cuts drums at either Entourage Studios in North Hollywood or in Los Angeles at Bryan Carlstrom's Transformer studio, after which the tracks return to the portable rig at home for adding further vocals, guitars and other overdubs. The band takes advantage of Logic's presets to get the tracks sounding the best they can with their limited resources.

"You don't have to waste time," says Hill. "Logic has a lot of great presets for vocals that may not be *the* best of the best, but it's perfect for songwriting or putting together the record before the mix." The finished tracks then get mixed and mastered by Carlstrom, who imports the raw tracks into Pro Tools and starts mixing

Door, using a minimal rig, and recently created two new audio and video collections from the Billy Ward Trio for release on the Web. The trio comprises Ward, L.A. guitarist/composer Barry Coates and Boston bass player Bill Urmson; all three gathered at Ward's lake house in upstate New York for rehearsals in preparation for a live gig at Manhattan's Cutting Room.

"We met at the house and for a couple hours each day we played in the living room," says Ward about the rehearsals. "We just set up a pair of Schoeps CMC 41 mics through Chandler TG2 preamps through an Apogee Duet into Logic on a laptop." The band had no inkling that their rehearsal tracks would ever go public, but the results were so good that Ward decided to release them on his Website in a "pay what you want" format. "The house has wooden floors with bare walls, save for artwork, so it is not a room designed to sound good. I just want to ac-



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Portable Production



The Billy Ward Trio (drummer Billy Ward, guitarist/composer Barry Coates and bassist Bill Urmson) recorded their lake house rehearsals and later used those tracks on their album.

knowledge that sometimes the music can overtake obstacles."

Following the rehearsals, the trio performed and recorded at the Cutting Room. A four-camera, two-person video crew captured the event live, along with Robert L. Smith from Defy Recordings, who recorded to Pro Tools. The audio setup at the club was small, using four mics—two Schoeps CMC 41s and two modified large-diaphragm Oktava mics—into Chandler TG2 and API preamps, then ported into the computer using an Edirol interface. The Oktavas were placed close to the stage in a coincident pair facing the band, while the Schoeps CMC 41 hypercardioid mics were in the back of the room in another stereo pair facing the stage. Ward also employed the venue's live sound engineer, who recorded his stage mic feeds onto two tracks for added coverage, giving him a total of three stereo feeds.

After the gig, Ward sweetened and pre-

pared the recorded tracks for download back at his home studio. "I laid all six of the tracks into Pro Tools and each one had some qualities," says Ward. "The Schoeps, even though they were 40 feet from the stage, had such a sweet top end, yet there was way too much detail in audio noise." Ward started the mix with the closer-placed Oktavas, then added the Schoeps to the mix only after using a low-cut filter set at a relatively high frequency. "I used this to get the icing on the sonic cake and carefully blended it in." Ward also added some low frequencies to the Oktavas, experimenting with various scenarios using Daking EQs. He also brought up some of the quieter passages in the mix. "You still hear the [band's] dynamics, but it's not like the floor falls out," he comments. He then handed off the audio to video editor Neil Miller, who edited and synched the video and audio tracks for the final release.

It's a Wrap

The juxtaposition of affordable, computer-based digital audio workstations with shrinking budgets, along with reliable, cheap new distribution methods have revolutionized the ways music is being made. And as we've seen from the examples above, audio pros have responded by using these new tools to forge successful models for production while maintaining quality. ■



Michael Gassert records Bachir Attar & Master Musicians of Jajouka in the mountains of Morocco.

Kevin Becka is Mix's technical editor.

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All electro-mechanical transducers—microphones, monitors and headphones—are position-sensitive. We know how a microphone can “favor” one vocalist or instrument over another, and that mic and monitor placement can be a major, if not critical, sound-shaping factor. The first goal of a well-designed pair of headphones is mechanical: The amount of consistency with which the drivers can be positioned over the ears optimizes imaging and detail; ear pad design and headband tightness affect bass response.

Maximizing your headphone experience starts with picking the ones you like best, but it doesn't end there. For example, the amplifiers used to drive our “cans” also contribute to the sonic experience. And for the voice-over artist or vocalist, the ability to reverse polarity (phase) is a simple, technical option that can have a great sonic impact. The sound arriving at the ears via 'phones should be the same polarity as the sound conducted through the body.

At a micro-acoustic level, the design and choice of materials should maximize frequency response and minimize distortion and resonance. It's no wonder, then, that manufacturers are periodically tweaking their designs and offering model variations. It is also no surprise that some headphone enthusiasts latch on to certain models, even after they've been discontinued.

Real World

Many factors, both subjective and objective, are part of selecting headphones, so I talked to a few engineers to find out what determines their choice. Those I interviewed emphasized accuracy and truth for themselves, but chose flattering and inspiring (aka “hyped”) for musicians. At least two engineers, Ryan Hewitt and Tom Hambleton, expressed their affection for the discontinued Sennheiser HD580 'phones, preferring them over their successor, the HD-600s, which the engineers describe as being a bit more “hyped.”

Hambleton's personal faves are the Denon AH D-2000s; he describes them as being “tight, with good

bass, nice mids, sweet highs and not fatiguing” and good enough to get balances on—high praise, indeed. Hewitt's preferred studio cans are the Sony MDR-7506s, which he says are “super-hyped and exciting.”

Engineer Chuck Zwicky, described the Fostex T50RPs as sounding like a ribbon microphone. “They took more than a minute to get used to, are not flattering or hyped,” but once the user becomes acclimated, Zwicky says, “they reveal things that nothing else will.”

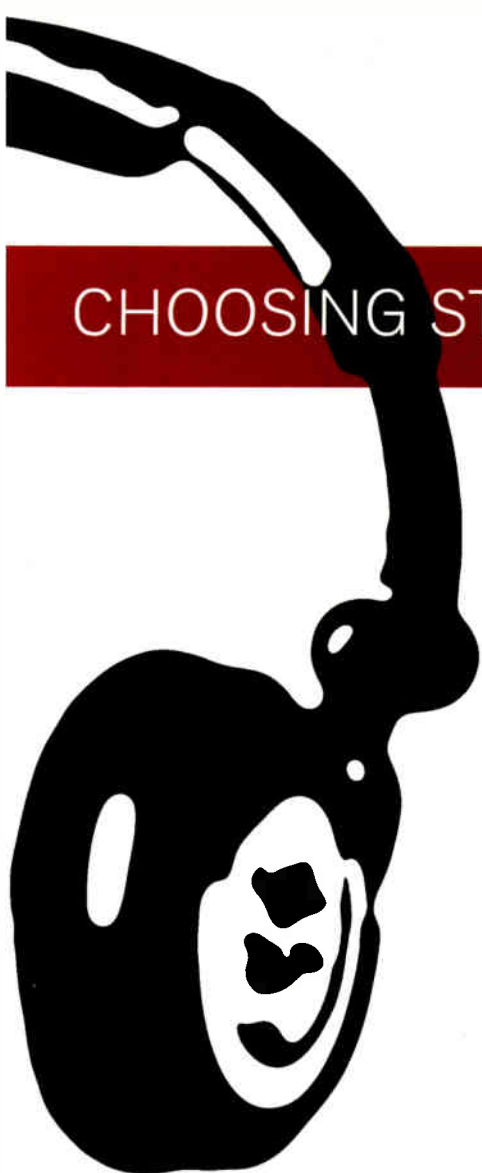
Mike Zirkel (Smart Studios, Madison, Wisc.) uses Grado headphones during the mixing process, but prefers Fostex T40 headphones in the studio because they can take abuse and are easily serviced. He also recommends GK Music Ultraphones for drummers because of their high isolation and familiar sound. That headphone company, owned by jazz percussionist Gordy Knudtson, integrates the Sony 7506 driver into a sealed environment for ultimate isolation.

Bringing Specs Into Focus

A referral from a friend, in simple descriptive words, can mean more to an engineer than a list of specs, especially if a well-known headphone is used as reference. If

CHOOSING STUDIO HEADPHONES

By Eddie Ciletti



Know Your Headphone Specs

Definitions of Commonly Used Terms

Open Design: Features an open grille on the back of the ear cup, exposing the driver to the outside and allowing free propagation of sound waves. Offers less isolation and less distortion.

Closed Design: Features a sealed backing, which attenuates sound waves propagating away from the ear. Provides better isolation, but is sometimes said to distort at certain frequencies due to resonances.

Circumaural: Cushion/ear pad goes around (outside) the ear.

Supra-Aural: Cushion/ear pad sits on top of the ear.

IEC 318: An artificial ear specification for a device that loads the sound source (headphone) with a mechanical impedance that approximates the typical human ear. A calibrated microphone is used within the device for measurement purposes.

IEC 60268-7: Standardizes the designation and description of headphones; lists characteristics to be specified, with the relevant methods of measurement.

Efficiency: The sound pressure for a given amount of voltage (dB/V) or power (dB/mW).

all manufacturers provided standardized information and a frequency-response chart, we'd be able to correlate between a familiar headphones, like the Sony MDR-7506s, and unfamiliar cans *vis á vis* their graphics. This might not be a perfect solution, but it would be a good start, especially when so many of us shop online. We could learn from the response charts and other data about the "typical" range or windows: shy-of-the-mark at one end, "accurate" in the middle and "hyped" at the other.

Headphone frequency response is not flat. The ear is a complex device, and frequency response alone—without a decibel tolerance (+/- x dB)—is just bandwidth. Similarly, low distortion at 1 kHz is an easy feat as compared to the challenge of achieving low distortion in the bass region. Some manufacturers provide minimal to no specifications, save for a few choice marketing superlatives, while other manufacturers, like Beyer, provide a standards reference such as IEC 60268-7. (At minimum, this makes it easier for European broadcasters to do comparative shopping.)

Impedance is another squirrely specification because of the way it relates in both directions: how well the headphone driver (speaker) couples to the ear *and* the relationship between an amplifier and the headphone driver. We all know how bass response can be optimized by headphone position and a snug fit. Similarly, low amplifier source impedance can reduce the "hyped bumps" at the bass and treble extremities.

Headphones have a wide impedance range, and most headphone amplifiers include a resistor in series with the output jack—this determines the "source" impedance. The value is not consistently implemented; it's chosen as much to protect the drivers as well as reduce noise, but the ability to tweak this value would be a great option. (A 32-ohm resistor in series with a 32-ohm driver will attenuate the signal and the noise by 6 dB.) Rather than randomly plugging into any old headphone jack, you can expect more consistent results by using the same headphone amplifier.

Minneapolis-based mastering engineer Greg Reiersen uses the Creek OBH-11—a stand-alone

headphone amplifier—with his vintage pair of Sony MDR-V6s. He also checks mixes on stock iPod earbuds, which he feels are very close to being an in-ear "standard," considering the number of people who listen that way. On that subject, Etymotic Research (www.etymotic.com) does not make "headphones," but does make all sorts of hearing-related paraphernalia, from high-fidelity earplugs and hearing aids to improved ear buds for the iPod. Few audiologists relate to the needs of recording engineers, but the Etymotic site is an exception worth browsing for insights into how hearing works (including technical papers).

Under the Muffs

Bottom line: Headphones are tools. We'd all like our favorites to be robust—to tolerate physical and electrical abuse—and be comfortable. Headphones have become very specialized: DJ 'phones can handle 3.5 watts, while headphones for drummers can provide up to 35 dB of isolation. It's a plus if they can fold up—transformer style—into a compact footprint. In the green-

What's on Your Ears

Manufacturer	Model	Design	Impedance	Response	Max Power	Efficiency	Price
AKG; www.akk.com	K702	Open	62 ohms	10 - 39k Hz	200 mW	120 dB/V	\$430
AKG	K77	Closed	32 ohms	18 - 20k Hz	200 mW	115 dB/V	\$50
AKG	K240 MK II	Open	55 ohms	15 - 25k Hz	200 mW	91 dB/mW, 104 dB/V	\$200
AKG	K181 DJ	Closed	42 ohms	5 - 30k Hz	3.5 W	n/a	\$100
Allen & Heath; www.allen-heath.com	XD-53	Closed	36 ohms	5 - 33k Hz	3.5 W	105 dB/mW	\$200
Audio-Technica; www.audio-technica.com	ATH-M30	Closed	65 ohms	20 - 20k Hz	1.6 W	100 dB	\$60
Audio-Technica	ATH-M35	Closed	n/a	20 - 20k Hz	n/a	n/a	\$139
Audio-Technica	ATH-M50	Closed	38 ohms	15 - 28k Hz	1.6 W	99 dB	\$160
Behringer; www.behringer.com	DT880 PRO	Open	250 ohms	5 - 35k Hz	100 mW	96 dB SPL	\$330
Behringer	DT150	Closed	250 ohms	5 - 30k Hz	100 mW	97 dB SPL	\$270
Behringer	DT 770 M	Closed	80 ohms	5 - 35k Hz	100 mW	105 dB IEC 60268-7	\$290
Bose; www.bose.com	TriPort Around Ear	Closed	32 ohms	n/a	100 mW	97 dB/mW	\$130
Bose	TriPort On-Ear	On-Ear	n/a	n/a	n/a	n/a	\$165
Denon; www.usa.denon.com	AH-D2000	Closed	25 ohms	5 - 45k Hz	1.8 watts	106 dB/mW	\$349
Direct Sound; www.extremehdphones.com	ex-25	Closed	32 ohms	20 - 20k Hz	500 mW	107 dB @ 1 kHz	\$50
Direct Sound	ex-29	Closed	32 ohms	20 - 20k Hz	500 mW	114 dB @ 1kHz	\$90
Equation Audio; www.equationaudio.com	RP-21	Closed	32 ohms	10 - 22k Hz	n/a	100 dB/1mW	\$100
Fostex; www.fostexusa.com	T50RP	Open	50 ohms	15 - 35k Hz	3 W	98 dB/mW	\$75
Fostex	T40RP	Closed	50 ohms	20 - 25k Hz	200 mW	93 dB/mW	\$70
Grado; www.gradolabs.com	SR 325i	Open	32 ohms	18 - 24k Hz	n/a	1mV = 98dB SPL	\$295
Grado	SR 125	Open	32 ohms	20 - 20k Hz	n/a	1mV = 98dB SPL	\$150
Koss; www.koss.com	portapro	Open	60 ohms	15 - 20k Hz	n/a	101dB SPL/mW	\$50
Koss	pro4AAT	Closed	250 ohms	10 - 25k Hz	n/a	95 dB/mW	\$65
M-Audio; www.m-audio.com	Q40	Closed	64 ohms	10 - 20k Hz	n/a	116dB SPL/mW	\$150
Monster; www.monstercable.com	BEATS	Closed	n/a	n/a	n/a	n/a	\$350
Numark; www.numark.com	PHX	Closed	n/a	20 - 20k Hz	n/a	n/a	\$60
Phiaton; www.phiaton.com	MS 400	Closed	32 ohms	n/a	1 W	98 dB	\$250
Phiaton	PS 500	Closed	32 ohms	n/a	n/a	102 dB	\$300
Pioneer; www.pioneerelectronics.com	SE-A1000	Open	45 ohms	10 - 30k Hz	1.5 W	102 dB/mW	\$150
Pioneer	HDJ-1000	Closed	40 ohms	5 - 30k Hz	3.5 W	107 dB/mW	\$170
Roland; www.rolandus.com	RH-A30	Open	n/a	n/a	n/a	n/a	\$240
Roland	RH-300	Closed	n/a	10 - 25k Hz	1.6 W	101 dB/mW	\$210
Samson; www.samsonetech.com	CH700	Closed	n/a	20 - 22k Hz	n/a	n/a	\$50
Samson	RH600	Open	32 ohms	20 - 22k Hz	n/a	n/a	\$60
Sennheiser; www.sennheiserusa.com	HD 25-1 II	Closed	70 ohms	16 - 22k Hz	n/a	120 dB	\$200
Sennheiser	HD580	Open	300 ohms	16 - 30k Hz	n/a	97 dB	N/A
Sennheiser	HD600	Open	300 ohms	12 - 39k Hz	n/a	97 dB	\$295
Sony; www.sonymstyle.com	MDR-V6	Closed	63 ohms	5 - 30k Hz	1 W	106 dB/mW	\$75
Sony	MDR-7506	Closed	n/a	10 - 20k Hz	n/a	n/a	\$100
Sony	MDR-SA5000	Open	70 ohms	6 - 100k Hz	1.5 W	102 dB/mW	\$410
Stanton; www.stantondj.com	DJ PRO 2000	Closed	64 ohms	20 - 30k Hz	500 mW	107 dB @ 2 mW	\$90
Stanton	DJ PRO 3000	Closed	30 ohms	16 - 22k Hz	3 W	106 dB/mW	\$100
Stax; www.stax.co.jp	SR-202	Open	132k ohms	7 - 41k Hz	n/a	100 dB/100V rms@1 kHz	\$380
Stax	4070	Closed	145k ohms	7 - 41k Hz	n/a	97 dB/100V rms @1 kHz	\$2,025
Ultrasonex; www.ultrasonex.com	PRO 750	Closed	40 ohms	8 - 35k Hz	n/a	94 dB	\$390
Ultrasonex	PRO 2500	Open	40 ohms	8 - 35k Hz	n/a	94 dB	\$390
Ultrasonex	PRO 900	Closed	40 ohms	6 - 42k Hz	n/a	96dB	\$550
Ultraplones; www.drumpphones.com	Ultraplones	Closed	70 ohms	6 - 100k Hz	1.5 W	102 dB/mW	\$230
Yamaha; www.yamahamultimedia.com	RH5MA	Open	32 ohms	20 - 20k Hz	n/a	n/a	\$50

est sense, making fewer, better-sounding headphones that last longer and can be repaired makes the most sense.

If you're looking to purchase new headphones, the chart above, featuring open and closed models, will help you get started. At best,

it provides common specs at a glance, such as power handling and impedance. It also shows how inconsistently specs are reported (efficiency, for example), or worse, not reported at all. For the most part, "street/net" prices are quoted. And if you already have a great-sounding pair of

fragile headphones (or vice versa), let us know by e-mailing mixeditorial@mixonline.com. We'll publish the results online. III

Mix contributing editor Eddie Ciletti writes the monthly "Tech's Files" column.

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Engineer Jim Scott

BUILDING SUCCESS THE OLD-FASHIONED WAY

By Mr. Bonzai

Engineer Jim Scott may be one of the best examples of a disappearing breed. He started his career in the analog days as a gofer at Los Angeles' Record Plant and worked his way up through the traditional tiers from janitor to assistant engineer and eventually "super-assistant." His first gig as a fledgling solo engineer was for Sting's *The Dream of the Blue Turtles*, an album that earned him a Grammy nomination for Best Engineered Album. During the past 25 years, Scott has distinguished himself with stunning work for the likes of the Red Hot Chili Peppers, Wilco, Johnny Cash, Lucinda Williams, Tom Petty and the Rolling Stones. Along the way he has continued to work with debut artists and has earned a worldwide fan club for his direct approach to making records.

Origins of an Engineer

Long before he became an engineer, Scott wanted to be a musician, asking for a guitar at age 6 and playing trumpet in the high school band. "When The Beatles arrived, I decided I wanted to play the drums," he says. "My dad took me to a famous music store, Mel Bay Music in Kirkwood, Missouri, and we bought that blue-sparkle Ludwig set that is now here in my studio."

All of this childhood musicianship had a major effect on Scott's later career. "I got into some rock 'n' roll bands in high school, and we played at a club called Rainy Daze in St. Louis, where underage kids could perform. You learned how to put on a show and how to work with a P.A. and mics for each musician. I really grew to love that life."

And that's where he first got the engineering bug. "Then when I went to college, I thought I could study to be a drummer, but I discovered I wasn't a very good one. I fell in with some other students who had a folk-rock band. They were very good musicians, but they didn't sound good in the clubs and coffeehouses because you couldn't hear them properly. I bought another P.A., some mics, and I engineered their shows. I didn't think of it as a job; I just wanted my friends to sound good.

"I was studying geology at USC and having fun hanging out with the band," Scott continues. "Then when I got out of college, I had a career in geology and became depressed. I wanted to find a job that I really enjoyed, and realized that working with the

band was what I wanted to do."

At that point, Scott began pursuing his dream. "I had a friend who worked at the Record Plant recording studio as a temporary bookkeeper and she said that kids come in and intern, and they learn how to engineer, record and make records. I was 28 years old and was hired to be a gofer—with a college degree and six years as a professional geologist. Then I became the nighttime guy who answered the phone. Then I moved up to being a janitor, and along the way I was actually trained to do what you need to do in a recording studio."

Scott's training at the Record Plant paved the way for his first recording job. "Then I got to work in the remote recording trucks for a couple of years," he says. "MTV had just begun in 1981 and every band in the country needed a video immediately. The quickest way to get one was to film the gig. We worked and worked all over the country.

"I met my wife and decided to quit the road life and get married. I was back in the studio [Record Plant L.A.] as the top assistant engineer. Finally, I needed more money and I went in to get it and [Record Plant co-founder] Chris Stone wouldn't give it to me. I wanted 25 cents more an hour, but he said \$5 an hour was the top for an assistant. I said I needed more money and just quit. He said, 'Great. Now you are a recording engineer and you can go out and bring me a client. Congratulations.'

"I was unemployed for a while, did some demo work for friends," Scott continues. "But studios were expensive. I didn't have any money, and the Record Plant called me because they had a job called the super-assistant. You got paid double—\$10 an hour—if you would come back to help out on complicated jobs when the client wasn't happy with the staff guys."

A turning point came when Scott was called back as a super-assistant for a session with Sting and an English engineer, Pete Smith. "We were doing a mix of The Police's *Synchronicity* tour for cinema release," he recalls. "The English engineer was not hip to that technology. He just wanted to be a rock 'n' roll mixer. I knew how to run a session, and figured it all out with the studio tech team and everyone was happy.

PHOTOS BY MR. BONZAI



Scott at his custom Neve 8048 made in 1976. The console was originally built for RCA Recording Studios and was owned for a time by Kitaro.

“Six months later, I got a call from Pete Smith. He asked me if I wanted to come down to Barbados and engineer Sting’s [1985] solo album, *The Dream of the Blue Turtles*. Remember, Pete had never produced a record and I had never engineered a record. We made the record and I was nominated for a Grammy for Best Engineered Album.”

A New Home: Plyrz Studios

After 20-plus successful years of recording at studios in L.A. and around the world, Scott decided to build his own mammoth workshop, Plyrz Studios.

“I created the studio because Cello Studios, one of my favorite studios for many years, closed down,” he explains. “I became studio-homeless, and although I continued working at other favorites like The Village, Sunset Sound and Sound City, I still had to continually move the equipment in and out. I continued decorating my workplaces and doing the gigs, but at 4 o’clock in the morning I had to pack it all up. The logistics



Plyrz Studios features an assortment of vintage instruments, including Scott’s own first Ludwig drum set.

of moving everything around just to do an honest day’s work got so tedious that I decided to build my own studio and stop commuting.”

His new studio is far removed from the Hollywood studio scene, nestled among small busi-

nesses and manufacturers in an industrial park. “I picked out a brand-new building with lots of totally clean power,” he says. “It’s a giant space with 26-foot ceilings and it’s up on a hill with a beautiful view. It’s plenty big enough for all of my

equipment; I was able to buy the equipment that I had always wanted and worshipped—the kind of vintage equipment I have been using to make my living for the last 20 years.”

Scott's pride and joy in the control room is a rare desk. “It's a Neve 8048 and the serial number is A3716, which dates it to 1976. It was commissioned and custom-built like all the Neve consoles of that era, when it took at least six months to make a console. This one was built for RCA Recording Studios in New York City and was installed in 1976. It stayed there until 1995, when it was bought by a wonderful Japanese musician named Kitaro for his private studio in Wade, Col-

orado. It is absolutely stunning and I consider it perhaps Smithsonian quality.”

The list goes on: “I have the two Neve sidecars, BCM-10s. One of them has 1073 equalizers; the other sidecar has 1079 equalizers, which are very similar with just a slightly different color. Those pieces of gear are the most valuable and the most charming pieces I have for the recordings.”

Scott's other most important items are his four UREI 1176 compressors. “They are very popular and have been the sound of rock 'n' roll since they were introduced in the late '60s. I also have two United Audio 175 tube compressors, which

are sort of the precursor to the solid-state 1176. I rely on them for the rock 'n' roll compression that people admire.” Plyrz also features a large collection of vintage musical instruments.

Alterations within the big rooms called for some acoustic design to suit Scott's recording styles. “It started as a big warehouse and now there are rooms within rooms within rooms. I put in a drop ceiling for the main recording space and then built a nice iso room within that area. I also built an amp closet with cubbyholes for a variety of guitar amps or Leslies, or anything that would be loud enough to pollute another sound and would work best if it has its own smaller room.”

Scott's mic collection is impressive. “I really don't have enough money to compete with the great recording studio collections, but I have a nice collection, including Neumann U87s, U47s, and RCA 44s and RCA 77s. And I have a big box of common rock 'n' roll mics, like Sennheiser, Shure, AKG and others. If I need one of the really fine vintage mics that I don't own, we just rent them.”

Another advantage of having your own studio is that you can maintain a consistent monitoring environment. “Since 2003, I have been a big fan of the KRK E8T speakers,” he says. “I have three sets of those, and I rotate the ones I use for stereo so they don't get tired and I can also use them for 5.1 mixing. I also have a set of ProAcs that I have used for a long time.”

Tracking and Mixing

Scott describes how he tracks the artists and bands he typically works with: “Over the past 10 or 15 years, I have done a lot of singer/songwriter-type rock 'n' roll bands. I try to get as many people together performing the song well at the same time to create the best possible take from the most people playing the music.”

Many engineers wait until the mixing phase of a project before dialing in the processing changes essential to a finished product, but not Scott. “My goal is that when the band walks in for the first playback or the first song, they say, ‘Wow, this sounds like a record.’”

“If you lose the artist at any point along the way, you are going to have to struggle to get them back because they are the ones whose reputation is on the line. They want to come in to the control room and hear something that's just fantastic. That is their goal for the day's work. If what they hear is great, they are happy, they are excited, their problems are solved and then they can just play their music.”

It's no surprise that the processing-on-the-go



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lends itself to an easy transition to the mix. "It is easier for me to mix the stuff I have recorded. By the time it is ready to mix, it is *really* ready to mix: There are no loose ends, no noises, nothing needs to be cleaned up or fixed. With any luck, I have been able to record tracks that sound good together."

For projects recorded by other engineers, Scott takes a different approach. "When the material comes to me from an outside source, the first thing I do is listen to each sound source—just to know it is what it says it is, and that it sounds like a pure tone, not broken or distorted for some mechanical reason. I just want to hear what the guy is calling his bass DI sound or his acoustic piano sound. I just quickly take inventory to know that everything is working and this is what I am up against today.

"Then I usually start with the drums and bass—but as quickly as I can, I like to get the music up, sounding like some kind of music before I dig too deep. They didn't record their album thinking about what it would sound like when I was going to mix it. They recorded it thinking that it sounded good when they did it. You gotta bow down to that philosophy, and say, 'They had something. What is it?'

"There is a natural balance in there somewhere. I might not like the drum sound, but that's okay. Maybe the drum sound goes with the bass sound. Maybe the drum sound goes with the piano sound. Maybe it all goes together as a sound. You have to figure that out."

At Plyrz Studios, recording is done mostly to Pro Tools. "Honestly, in the last three years we had two projects come on tape. One was Wilco, and that was on multitrack for *Sky Blue Sky*. I was the mixer and we played back off multitrack and mixed down to half-inch. It just sounded great."

Current Projects

Now that Scott has his own studio, the pace has not slowed in the least. "I am doing a record with a young band called the Sons of Bill, sort of a country-rock band from Virginia," he comments. "I am also in the middle a project with Citizen Cope—that's Clarence Greenwood. I recently finished my fourth album with my good friends Lowen & Navarro, *Learning to Fall*.

"And after that I am going to New Zealand for a project," he adds. "I was invited by Neil Finn of Crowded House to work with his organization called Seven Worlds Collide. A few years ago, he invited a great bunch of musicians, singers,

songwriters to make an album of original music and live performances for DVD as a benefit for Oxfam. This year, I have been invited to co-produce and engineer, with Neil and his brother, Tim, and his sons, Liam and Elroy. Wilco is joining us, and three or four members of Radiohead, Johnny Marr, Lisa Germano and Sebastian Steinberg from Soul Coughing. We have a song from Eddie Vedder and hopefully one from Tom Petty. The goal is to make an album of new and original music, putting together different combinations of the musicians gathered there. Everyone is donating their time, and it's a way in which I can give something back to rock 'n' roll, which has been very good to me."

When asked for an explanation of how he achieved his successes, Scott offers this advice: "Every day you go to work, you have to do your best work. If you slack off or get a bad attitude, the artist or producer will remember that and call somebody else the next time. That's my hot business tip of the day—be great." ■

For more from Mr. Bonzai's interview with Jim Scott, including favorite session moments with Tom Petty, Wilco, Roy Orbison, the Rolling Stones and other top artists, visit mixonline.com.

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"Black Hole is a great-sounding mic!"

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Cliff Goldmacher (EQ)

Bryan Carlstrom

(Alice in Chains, Rob Zombie, The Offspring)



The clarity and smoothness was amazing, reminding me of a really good sounding vintage U87.

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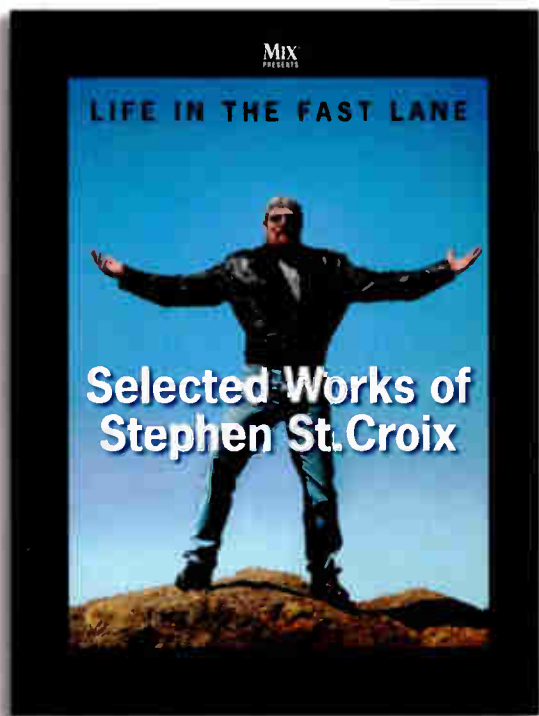
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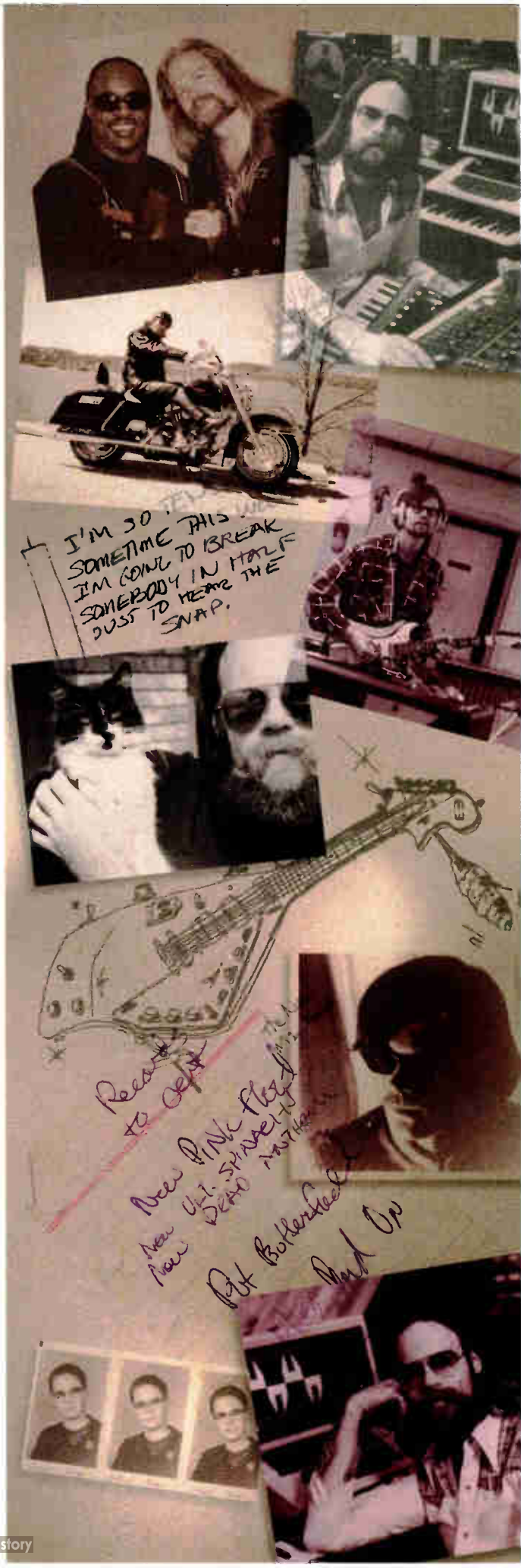
Stephen St.Croix inspired, provoked and educated *Mix* magazine's readers for 18 years in his one-of-a-kind column, "The Fast Lane." As an inventor, musician and engineer, St.Croix offered his audience a wealth of



knowledge and vision, as well as a Harley-riding rock-star attitude. Now, two years after his death, the editors of *Mix* have selected the best of St.Croix's columns, presented with never-before-seen photos, notes and drawings from his personal files. This book takes "The Fast Lane" beyond the pages of *Mix* and lends new insight into the life and mind of Stephen St.Croix.

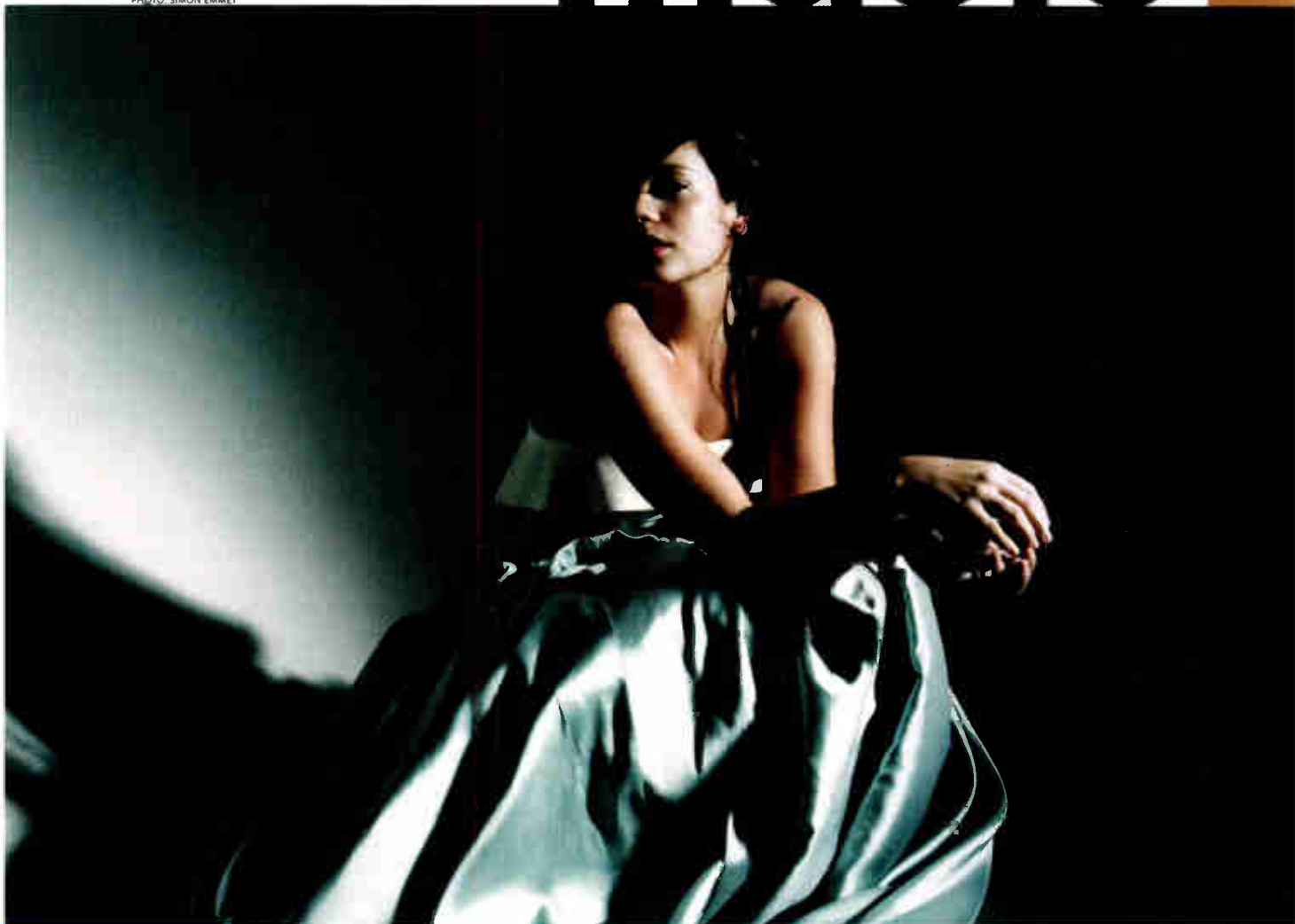
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By Blair Jackson

Lily Allen Returns

L.A. PRODUCER GREG KURSTIN BRINGS OUT HER BEST

Forget about the tabloid stories you might've read during the past year about 23-year-old Lily Allen, the prodigiously talented British singer/songwriter whose 2006 debut album, *Alright, Still*, was a surprise hit in the U.S. and around the world, thanks in part to the success of the buoyant reggae-pop single "Smile." The sensa-

tionalistic tales of possible misbehavior at an awards show, around London and in the South of France have *nothing* to do with her music, and to prove it she's just put out a sophomore disc that's even better than her first. *It's Not Me, It's You* (in stores February 10) offers up a dozen more songs that show her acerbic (the British might call it

"cheeky") wit, acute skills of observation, frank views on relationships and appealing everywoman persona.

Whereas *Alright, Still* had seven different producers and as many mixers, *It's Not Me, It's You* is a complete collaboration between Allen and producer/engineer/musician/songwriter Greg Kurstin, who had worked on

three tracks on Allen's debut.

"She was in the midst of recording her first album when I met her," Kurstin says from his Echo Studio project room in the Los Feliz section of L.A. "I was in England working on some other things and her A&R guy asked if I wanted to meet her. I checked out a mix CD of a few of her songs and I liked what she was doing, so we met up in the studio and we ended up writing a song together, 'Everything Is Wonderful.' About a week later, I listened back to it and decided I really liked it, so we took it from there. She came out to L.A. Eventually and we did three songs in a week at my studio.

"For the songs we did together for her first record, I had a few tracks that I had started," he continues. "I'd play her ideas, and she'd say, 'Oh, I like that,' or, 'What if we changed that this way,' and she'd start writing lyrics and then I'd develop the track more. The song 'Alfie' we created from scratch. We listened to a few songs for inspiration, then I built the track quickly in Logic."

For her sophomore effort, Allen says in her current record company bio, "I wanted to work with one person from start to finish, to make it one body of work. I wanted it to feel like it had some sort of integrity...We decided to try and make bigger-sounding, more ethereal, *real* songs...I think I've grown up a bit as a person and I hope it reflects that."

Indeed, there is a unified feeling to the album, even as it jumps across an eclectic set of genres, from the Euro-disco of "I Could Say," to the Spaghetti Western drive of "It's Not Fair," the English music hall bounce of "22" and the unexpectedly charming "F*** You," the country vibe of "Him" and the scratchy '30s-style sonics of "He Wasn't There." And while Kurstin's keyboards and sequencers dominate many tracks, there's also plenty of interesting instrumental and textural depth, from banjo to accordion to harpsichord, as well as finger-snaps and hand-claps, though some of those textural elements are actually synth-based replicas.

Lyricaly, the themes range from incisive glimpses of male-female dynamics and sexuality—sometimes biting and sarcastic, sometimes tender, sometimes joyfully banal—to frank takes on drug abuse and racism. Her cleverness doesn't call attention to itself; rather, many of her songs feel as though we're listening to an audio diary. "I find it hard to write songs about nothing," she comments. "I try to write things that are both relevant to my life—which is totally weird and surreal—and are also universal."



Producer/engineer/artist/songwriter Greg Kurstin and collaborator Inara George release their own music as The Bird & the Bee. Their latest was recorded while Kurstin worked with Lily Allen.

In Kurstin, Allen found the perfect foil. He's a nice, easygoing guy with wonderfully eclectic taste and an impressive track record as a writer/producer that includes work with a host of top women singers, including Natasha Bedingfield, Kylie Minogue, Sia, Britney Spears and Donna Summer, as well as adventurous male artists ranging from the Flaming Lips to Beck. Kurstin and singer Inara George (daughter of late Little Feat leader Lowell George) also comprise the ultracool duo The Bird & The Bee, whose fine second disc, *Ray Guns Are Not Just the Future*, was just released at the end of January. In fact, that disc and Allen's were being made simultaneously, each influencing the other to a degree. "I might do something with Lily I enjoyed, maybe a texture or some new thing I worked out, so I might bring something like it—a version of it—to The Bird & The Bee and vice versa," he notes.

Work on *It's Not Me, It's You* began in mid-2007 with writing sessions at a rented cottage in the village of Morten-in-Marsh in the heart of the picturesque Cotswolds area of Gloucestershire in Southwestern England. "I built a laptop studio there," Kurstin says. "Then I built another one at this castle called Lipiatt Park [also in Gloucestershire]. I had my laptop with Logic and then I rented 1073 Neves and an 1176. For the microphone, I just used a [Neumann] U87; that was all the outboard stuff I had. Then I had some instruments around, like a piano, an acoustic guitar, a Fender P-Bass, a Telecaster

guitar and a [Clavia] Nord Electro MIDI controller. That room was kind of challenging because the sound was so echo-y with the stone everywhere, so the vocals had so much natural reverb and it picked up every little foot noise."

For the actual writing process, "I break out little piano riffs or simple guitar riffs and she'll like some and reject others. I have to pull out whatever will inspire the best songs, so if she's not feeling it right off the bat, it's usually not going to happen. That happens a lot in the songwriting process, and that's fine. If she likes an idea, maybe I'll put it on a loop for her and then, literally, like half-an-hour later, she'll say, 'Okay, I have something,' and she'll sing in what she has—it might be a verse or a chorus—and then once I hear what she's doing lyrically, I'll start to work on the track. The lyrics will often give me ideas where to take the track. Usually, by the end of the day I'll have a finished demo of a song. We work pretty quickly together.

"Production-wise, I'll try out all sorts of things—trial and error—and sometimes it takes me forever," he adds. "I might try 100 things in a chorus until I can figure out how to make it work. Sometimes it comes together easily—like 'Everyone's at It' and 'Fear' came together quickly—but it's tricky; you can't predict what's going to take a long time."

After the writing and preliminary production sessions in England, work shifted a few

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Todd Rundgren

HAPPY TO BE ALONE AGAIN

By Blair Jackson

When Todd Rundgren makes a solo album, he makes a *solo* album. The multifaceted singer/songwriter/multi-instrumentalist/producer/engineer/tech pioneer first got the urge to do it alone all the way back in 1972, on three of the four sides of his breakthrough *Something/Anything?* set. Since then, he's recorded albums in every conceivable way—with bands, without bands, layering instruments one at a time, live in the studio with no overdubs, live onstage; you name it. He's cut note-for-note replicas of famous pop songs; laid down convoluted guitar-dominated prog-rock tracks; made an album entirely out of treated vocals; hit the charts with catchy, radio-friendly ballads; recorded interactive albums; and even made one with bossa-nova versions of some of his best-known tunes. His 2004 album, *Liars*, was a solo affair mostly; just a couple of guest spots kept it from being all-Rundgren. But on his latest, *Arena*, not only did he make it completely alone—using no other players or assistants—but he didn't even use a studio.

That's quite a feat when one considers that the title refers to the "arena rock" genre, with all its bombast, booming drums, screaming guitars and everything else that term implies. "A lot of my fans like the idea of me being a guitar-playing front man," Rundgren says with a smirk by phone from Bearsville, N.Y., on Christmas Eve morning. The previous night, he and his current band had played a sold-out concert in this small town that was Rundgren's home base years ago. "I've been through a lot of styles since Utopia [the dazzling prog-rock band he formed in 1974], and there have been times when I've gotten away from the guitar a bit. But after the [summer 2006] New Cars tour was cancelled, I went out and was guitar player with the Tony Levin Band and with some other groups [including his own], and we were getting such great responses from the audience—that's what pushed me to make a guitar-oriented record again. I'm going back to a retro phase—to the era when the guitar was the principal instrument.

"The idea of this record is, I wanted the guitar to essentially provide all the color. Instead of adding a layer of synthesizers or some



abstract sounds, I'd just get another guitar sound and use that. There's occasional organ in some places, and there's one song that's a little more modern-sounding in terms of the use of sequencers and stuff ["Today"], but mostly it's *lots* of guitars."

Arena was made entirely within a laptop environment, using Propellerhead Reason software, Line 6 TonePort, the Line 6 edition of Sonoma Sound Works' RiffWorks and other virtual tools. "As it turned out, I was having issues with my Pro Tools equipment and didn't want to get it fixed, so I devised this method that allowed me to do the entire project on my laptop with very little extra equipment," Rundgren says.

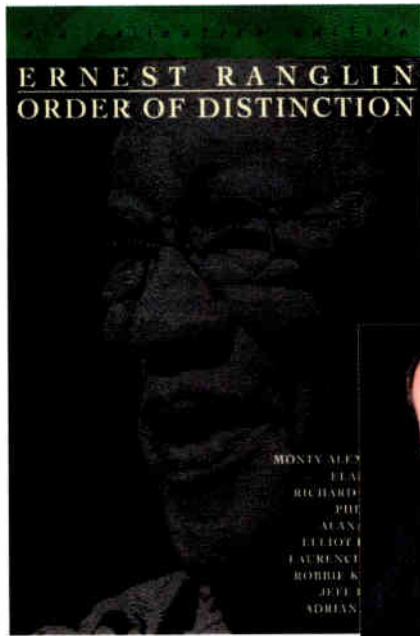
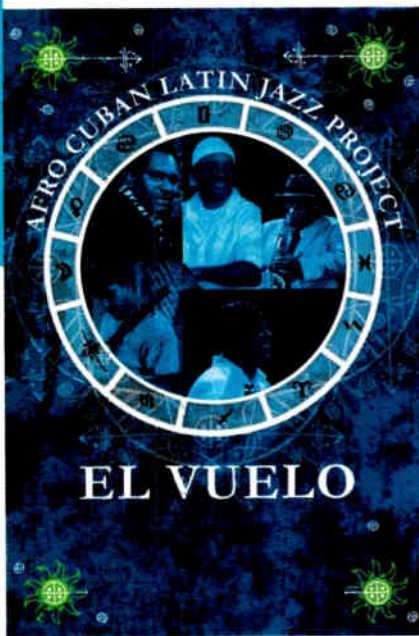
"Doing it on the laptop eliminated a rack full of stuff at least, because all I needed was a couple of pieces of hardware—one was an audio I/O box and a Line 6 TonePort [UX-8], which also had two phantom-powered mic ports, so when it came time to do the vocals I didn't have to add any more hardware to that." The strikingly varied guitar textures on *Arena*—from crunchy fuzzed riffs to liquidy, practically translucent lines—are products of the Line 6

environment, specifically TonePort and another software window called GearBox.

The flexibility of his laptop system allowed Rundgren to bypass a traditional console, digital recorder and even drums. The last particularly surprised me because Rundgren is a fine drummer and the sound is so authentic on *Arena* I assumed they were mostly real drums. "Nope, all programmed [in Reason]," Rundgren says with a laugh. "That's kind of revealing the man behind the curtain. If you had to ask, though, I guess I did an okay job of programming them. The drums probably took the longest time of anything—making them sound like real drum performances. Unlike other instruments, drums have a whole lot of vagary in it—little *feel* things that are just barely audible—and getting those properly framed is the biggest challenge.

"Knowing how to play drums definitely gives you greater insight into how to program them realistically. Plus, at this point, getting the ideal drum take might take just as long from a playing standpoint. I'm not in shape [as a drummer] and I've got tendinitis in my

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Mark Waldrep

mics by Neumann, AKG, Schoeps (and others); and lots more. The company's catalog encompasses music from a wide variety of genres: classical/orchestral (Bach, Beethoven, Mozart, Revel); chamber (Brahms, Scarlatti, Haydn); jazz (Patrice Rushen, Luis Conte); vocal (Lizbeth Scott, John Gorka, Cheryl Bentynne); acoustic guitar (Laurence Juber, Lowen & Navarro); and

even country (John McEuen/Jimmy Ibbotson, Albert Lee). I first got turned on to the label through an amazing DVD (audio and video) by Jamaican music pioneer Ernest Ranglin called *Order of Distinction*—in addition to visually and sonically superb performances by Ranglin and guests including Jeff Lorber, Monty Alexander and Robbie Krieger, the package included

a documentary featurette and a lovely booklet.

Waldrep hasn't completely given up on physical discs—AIX recently became the first audiophile label to strike a Blu-ray deal to put out high-definition video/audio discs—but he clearly believes that his company's future lies with the downloads. And though he wants to blow you away with the purity and brilliance of his 96/24 recordings, he's not a snob about it: "I want to be able to sell the same track to people multiple times—an MP3 for your iPod, as a Dolby or DTS file for your car, or when you don't have your high-end system with you. You can go to Windows Media Pro, Windows Media Lossless, to FLAC, to 96/24 PCM uncompressed—take your pick. Everybody can have what they want. It will sound good on anything."

AIX is not the only label doing this, and Waldrep is quick to acknowledge that there are many people out there who are striving to improve the state-of-the-art, but he does want to distinguish himself from companies who are releasing 96/24 versions of either old and recent analog recordings, or digital recordings made to analog tape: "Both are going to have some hiss throughout; it's a *flavor* of recording," Waldrep notes. And he recognizes that the journey to full acceptance of surround is a long one: "Probably 75 percent of the people are still locked into the stereo mode. That's fine, but it's a little less interesting than sitting somebody down in the room and playing them this incredible [unreleased] Jennifer Warnes session in 5.1 with Dean Parks and Vinnie Colaiuta and all these great musicians surrounding you. *That* will convert you!" III

AIX Records

AUDIOPHILE LABEL OFFERS HI-DEF DOWNLOADS

By Blair Jackson

AIX Records founder/president Mark Waldrep is the first to admit he can be "a bit verbose." The guy *loves* to talk. Fortunately, what he has to say is invariably interesting and provocative. Long a popular recording industry gadfly, Waldrep always seems to have one eye on the distant horizon, as if he's envisioning the next step in audio's evolution. As a self-professed audiophile, in charge of a label known for its immaculate sonics, he, of course, has his moments where he despairs about a world where compressed MP3s seem to be "good enough" and the bar for audio fidelity feels like it's getting lower in many circles, not higher. But with AIX Records, he's trying to lead by example, believing that his is not just a lonely cry in the wilderness—and talking (a lot) to anyone who will listen.

Waldrep's latest audio cause is high-definition downloads, which he believes is the wave of the future. He's usually right about these things, so give a listen. "I still make physical discs and we still sell them," he says from AIX's Los Angeles headquarters. "I sell more every month than I did the previous month. But it became pretty obvious to me that the catalog of roughly 60 records I've done—with hi-def video—wasn't going to take over the world as physical spinning discs.

"So that got me to thinking—what's the next thing? It's going to be downloads. Because Comcast and [Verizon] FiOS and others have got

the bandwidth growing out to your house for video, we can take advantage of that and make music happen through there, too," he continues. "So let's start a Website that is—to use a kitschy phrase—like iTunes for audiophiles, for people that *really* care about audio quality; the real deal. I don't put quotes around 'CD-quality.' Let's see if we can't allow people to download without the need for a physical disc, the quality of the stuff we've been recognized to produce." Waldrep trademarked the name "iTrax" years before "iTunes" even existed, originally attaching it to enhanced CDs he'd made. Now, itrax.com is the site where his high-def downloads can be found.

Waldrep, who besides being a composer and audio engineer, is a professor of Digital Media Arts at California State University, Dominguez Hills, started AIX Records in 2001 after a number of years operating a studio that specialized in digital mastering. From the outset, AIX Records was designed to showcase new, all-digital, high-definition (96kHz/24-bit) stereo and 5.1 surround recordings and video. All of the label's sessions are captured live in the studio, with no overdubbing. Equipment in the state-of-the-art room includes a Euphonix System 5 console and R-1 digital recorder; Benchmark Media Systems preamps; Sonic Solutions mastering and DVD authoring systems; Butler and Bryston amps; Audience high-res mic and speaker cables; B&W 801 surround monitors; a slew of great

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months later, mostly to Kurstin's studio and Dave Trumfio's Kingsize Soundlabs in the Silver Lake district of L.A. Kurstin's room contains "a computer and desktop and a bunch of keyboards and various toys to the left and right of me," he says. "Probably my main ones are a Prophet 5, Minimoog, ARP String Ensemble, B3, Clavinet, Rhodes, and various guitars and

I TRY TO WRITE THINGS THAT ARE BOTH RELEVANT TO MY LIFE—WHICH IS TOTALLY WEIRD AND SURREAL—AND ARE ALSO UNIVERSAL.—Lily Allen

basses. I have stacks of keyboards in another room, too, including some weird ones, like the EMS synth. I also have a converted closet that I turned into a vocal booth."

Allen is an exceptional singer, and Kurstin showcases her voice to the fullest over the course of the album's dozen tracks, intricately layering her harmonies, using effects sparingly but effectively, and letting her solid lead vocals carry the melodies. "I love working on the

harmonies; it's one of my favorite things to do," he comments. "Sometimes, I'll work them out; other times, I'll have her improvise a harmony track to see what she comes up with. She's got a really good ear."

On a song like "Fear," which is thick with backing vocals, "I probably have six to 12 in that chorus. I'll have a group and then bring up maybe one or two as the lead and have the

other ones as more ambient support. I've been into threes recently for some reason. I used to be into pairs, but I've been into threes and sixes lately."

Kurstin put some real guitar, bass and drums on the album—as well as conventional (i.e., non-synth) keyboards—but then there are also guitar-like lines on a song like "Fear," courtesy of a 360 Systems digital Mellotron program that he put into Logic and then played as a keyboard,

an accordion that is from samples (even though Kurstin can play the real thing) and synth bass frequently augmenting real bass. "Go Back to the Start" opens with weird electronic sounds that came from a distorted Roland 808 kick drum sound; "Chinese" features what sounds like a harpsichord, but is actually a 12-string guitar sample played on a keyboard; and the noisy old-record sound of "He Wasn't There" comes from the cellophane disks of an old Optigan, a favorite of Tom Waits (among others).

Throughout the process, Allen offered her opinions on Kurstin's production choices, and for the most part they were in sync throughout the whole project. "She was really easy to work with," Kurstin says. "I always looked for her input and approval on things, and she had some good ideas of her own."

Kurstin mixed the album at home, also in Logic. "It's what I learned on," he explains. "It's the MIDI thing: being able to pull up my library of sounds real quickly, and keeping the stuff MIDI so I can change the sound later and not have to commit to a certain sound. That can be a good thing and a bad thing, I suppose, but it's mostly been a good thing for me, and it definitely was on this album." ■■

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elbows, which makes it hard for me to do it for a long time."

Rundgren modestly adds, "Almost everything I play besides the guitar, I play with limited technique so it's always interesting working within those limitations. What that does is it leads you to create more textured arrangements. If you're playing a whole lot of notes on one instrument, it's difficult to fit other things into it. But if what you're playing is relatively simple because that's all you can do, you can add other textures to create contrapuntal lines and things like that."

Speaking more generally about Reason, Rundgren notes, "It uses an extremely familiar metaphor, at least for people who have used synthesizers and sequencers and such. It looks like a rack full of that kind of equipment. It's a literal metaphor, even down to the patch chords in the back, which, when you hit this button that flips the rack around so you can go work with the patch chords, the patch chords sway in the breeze! They come up with a new version of [Reason] with some regularity, and they're always coming up with things that make it even better."

The actual recording, mostly at his home in



Hawaii, was done using RiffWorks, which locks to Reason using ReWire. "You might pick out a guitar loop you want to record over, and you start it up and you start doing takes. I keep the takes I like, I export them out of RiffWorks—I'll clean them up using a simple audio program—and then bring them all into a sampler inside Reason, essentially making an instrument out of each one of them using all the samples I've recorded and then just lay them out as MIDI events."

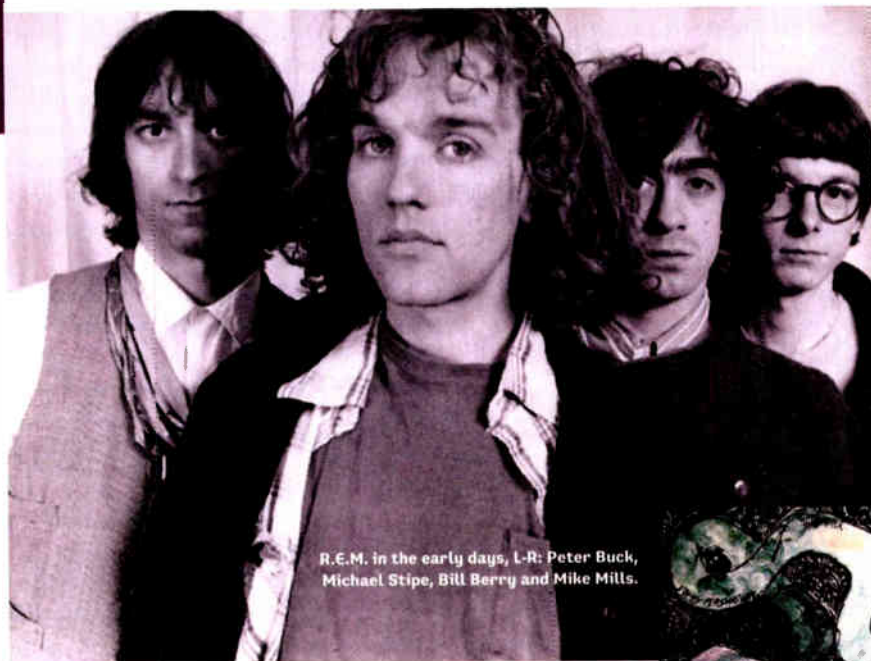
Rundgren says that working solo "allows me

to focus all the energy into what works best musically. You're not spending all this time going for what would be the so-called ideal take, where four or five guys in the band manage to lock in together and play the parts they intend to play. So the execution of it becomes relatively simple, and the tweaking you do later tends to be more about the sounds you're after rather than the performances." He says all of his reverbs and other processing also came from with Reason.

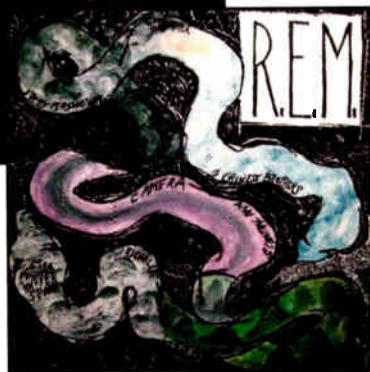
"There's a huge amount of flexibility; it can go wherever I go," he enthuses. "I could mix wherever I want as long as you get used to doing it with headphones and you have confidence that what you're hearing in the 'phones will translate well to speakers. In this case, I'm really happy with how it turned out. There were no major problems along the way."

But his job with the music on *Arena* didn't end with the completion of the album. "Then I had to teach it all to my band, and that's been great! The songs have grown, having their input and ideas, which is what you hope will happen with an album. This stuff is really fun to play." ■■

CLASSIC TRACKS



R.E.M. in the early days, L-R: Peter Buck, Michael Stipe, Bill Berry and Mike Mills.



R.E.M.

"SO. CENTRAL RAIN"

By Barbara Schultz

"So. Central Rain" is one of those songs, like The Clash's hit "Train in Vain," where the words in the title don't actually occur in the song, but you certainly know the song when you hear it. Remember Michael Stipe's plaintive, powerful voice singing, "I'm sorry...I'm sorry"? Now you remember.

It's not easy to put a finger on exactly what made R.E.M. so different, so great and so influential when this song became their first full-fledged hit in 1984. They had no gimmicks, no synths, definitely no hairdos and they didn't even seem that angry. They weren't retro, and they weren't punk or new wave either. But they became one of the few bands of the early '80s that managed to maintain counter-culture credibility despite becoming enormously successful. Their early albums also brought real guitars back to a new wave-weary indie scene, setting the stage for what would later be termed "alternative" music.

The members of R.E.M. met in Athens, Ga. Drummer Bill Berry and bassist Mike Mills were natives who had known each other since high school. A friend introduced this rhythm section to guitarist Peter Buck and vocalist

Michael Stipe—college kids who had become friends because Stipe frequented the record store where Buck worked. The foursome began playing psychedelic and punk covers at parties, and in small venues around the Southeast, working on their sound and their chops, and beginning to write their own mysterious, jangly, rocking songs.

The band's first recordings were made in producer/engineer/guitarist Mitch Easter's garage studio, called Drive-In, in Winston-Salem, N.C. Easter, the frontman for the band Let's Active, ran a friendly place that was known as a laid-back, creative center for indie bands all over the East Coast.

"It was a classic little garage studio we had," Easter says, "but little studios back then mostly had 8-track machines and we had a 2-inch, 16-track machine, which was more bodacious in every way! Punk and new wave scenes were spreading out across the country then, too, and the college radio stations were springing back into action, so all these local bands popped up who wanted to make 45s.

"My studio really came along at the perfect time because all these new bands that were

springing up also had this idea that they had inherited the punk scene," Easter continues. "They liked the idea of a studio that represented the music scene they were in, and my place somehow had that going for it, even beyond the local area. I did a lot of New York bands and Athens bands, including R.E.M."

R.E.M. recorded the single "Radio Free Europe" with Easter. It was a college radio success that was to be come part of an EP, *Chronic Town* (all made at Drive-In), which was originally meant for indie release on the local Hib-Tone label. But IRS Records ended up signing the band, and the EP became R.E.M.'s first IRS release. Label reps then set about encouraging R.E.M. to make their first full-length album, but they did not want the musicians to use Drive-In.

"Back then, there were all these notions about equipment," Easter says. "'You've gotta have *this* if you're going to make a *real* record,' you know? IRS said that it's got to be on 24 tracks, but I only had 16 tracks. It was like 'the more tracks the better,' so we went to this place

called Reflection [in Charlotte, N.C.], which was a hell of a lot better than my garage studio, but we really did it because IRS demanded eight more tracks!" [Laughs]

Reflection certainly had plenty of tracks to offer. Easter recalls that studio owner Wayne Jernigan was also a pro audio dealer at that time and, in particular, an MCI rep. So the main recording gear at the studio included MCI JH24 and JH10 tape machines, and an MCI JH600 console. "It was a really nice console," Easter says, "with maybe 56 channels and these fabulous light meters—maybe the best light meters anybody ever made! They were about 10 inches tall with a lot of elements in them and the best colors. It was like cosmic radiation was coming out of those things. It probably was! It probably made our hair fall out, but they were really pretty and you could switch them into other things like a spectrum analyzer or a peak meter. Most of the MCI boards had VU meters, but these were just beautiful."

The band wanted Easter to engineer and produce their first album, but the label had doubts—and, actually, so did Easter. "I was a

little intimidated by this," he recalls. "I'd only been recording bands for like a year. So I asked Don Dixon to help me because I was too much of a pup to go into that big studio by myself!"

Bass player/producer Dixon was already known in the local music scene, having recorded and toured with his own band, Arrogance. He'd worked in Easter's studio, and he had recorded at Reflection numerous times as a musician.

"I'd been in and out of Reflection for 10 years before we did *Murmur*," Dixon says. "It's a classic large studio of the era with a large main studio space—probably 30 by 50 feet—and one tiny little booth at the end and a bunch of gobos. It had your classic RCA Nashville curved walls, these floor to ceiling half-cylinders that helped disperse the sound. It had a live end and a dead end and curtains around. It also had great old tube mics and a lot of other stuff you needed—a Wurlitzer, a nice B3, good piano, vibes."

Still, Easter and Dixon lacked the sort of credentials that IRS wanted in a production team for an exciting young band, so they asked for an audition tape, which mercifully passed muster. After that, the band and their producers were largely at liberty to make the album they wanted, which Easter says was meant to be moody and unusual without being overproduced. However, on *Murmur*, Easter says, "A lot of the recording techniques were still sort of like late-'70s techniques. Bill really liked the idea of recording in a drum booth, even though by the time we did that record, drum booths were totally out of fashion. I thought it was kind of charming that he

wanted to do that."

As a result, the drum sounds on *Murmur* are fairly tight and small. "I don't want to use the word 'disco,'" Dixon says, "but they had that really tight, warm sound, like Memphis soul."

Murmur, released in 1983 and including a re-recorded version of "Radio Free Europe," was extremely well-received and the band toured relentlessly to support it. Then in '84, they went back to Reflection with Easter and Dixon to begin tracking their sophomore album, *Reckoning*, which includes this month's "Classic Track," "So. Central Rain."

Dixon and Easter both recall that the band's approach to *Reckoning* was more live performance-oriented than on *Murmur*.

"We brought the drums out into the big room, and there are much more ambient tones on the drums on *Reckoning*," Easter says. "Dixon and I were fans of those more live-type songs that were coming along in the '80s, and the band was ready for that by then, too."

Easter says that drum miking on *Reckoning* was fairly conventional, with the exception of Dixon's homemade version of Fritz, the binaural dummy head: "We wanted that stereo sound, but we didn't have the budget for a real one," Easter says. "But Dixon figured you could make one out of a cardboard box. He would take these 2-inch tape-shipping boxes that held two reels, and it was perfect to cut a slot in it and shove in one

of those stereo brackets that holds two mics. He would ram that through the box and draw a nice face on the head."

"I'd been doing that for a number of years," Dixon confirms. "We'd use U64s or maybe small-diaphragm AKGs—whatever was handy that had a small diaphragm. We would try to pack it with something so it would be solid. I still do that today. Those tape boxes are scattered all over the world!"

Another factor in the bigger, more ambient drum sounds on *Reckoning* was the acoustic reverb that the production team created. "Reflection had some old, conventional, big speakers that you could use to play stuff back out into the studio," Dixon remembers. "I think that the idea was for artists to hear what they did. You don't see that much anymore, but we used those speakers a lot—just to blast things out into the room—and we'd re-record them with microphones that we put in different places using various compressors."

Recording to the JH-24 machine at 30 ips, Dixon and Easter tracked every song live, with the other three (gobo'd) bandmembers arranged around Berry's kit in the main room, though Stipe's vocals and some guitar solos would be replaced later.

THE PROCESSING ON MICHAEL, THE MAGIC FORMULA, WAS A TOUCH OF THIS THING CALLED THE EXR EXCITER. IT WAS ONE OF THOSE MYSTERY TREBLE-BOOSTING THINGS, AND THAT GAVE HIM A TOUCH OF BRIGHTNESS.—Mitch Easter



Producer/engineer/
artist Mitch Easter
onstage, mid-'80s

Buck's beautiful guitar work, which so memorably opens "So. Central Rain," was captured pretty dry, according to Easter, but did feature the effect of a Scholtz Rockman. "These days, that's as uncool a piece of gear as you could possibly have," Easter says with a laugh, "but it was so great for Pete Buck, especially back when he had that really clean tone. We would build up these guitar washes with different sounds. We would start with his amp, then do a direct box with some studio effect, and then we also used that Rockman a lot because it had that built-in, weird compressed

sound that is really great for 12-strings or on top of one section." Easter recalls primarily using Shure SM7 mics on guitars.

Mills' bass amp was miked with a Neumann FET U47 from eight or so feet away, according to Dixon, who says he spent more time on vocals for *Reckoning* than on anything else. He often gave Stipe a ride to the studio about noon, and they would sing for a few hours in the quiet studio, replacing scratch vocals from the previous day.

"We had Michael sing into a FET 47—the transistor version of the famous 47—and it

sounded great. It had a good forwardness about it," Easter says. "The processing on Michael, the thing that seemed to be the magic formula, was a touch of this thing called the EXR Exciter. It was one of those mystery treble-boosting things, and that gave him a touch of brightness." Also included in Stipe's vocal chain were a DeltaLab delay, set to only about 16 milliseconds, and a UREI 1176 compressor.

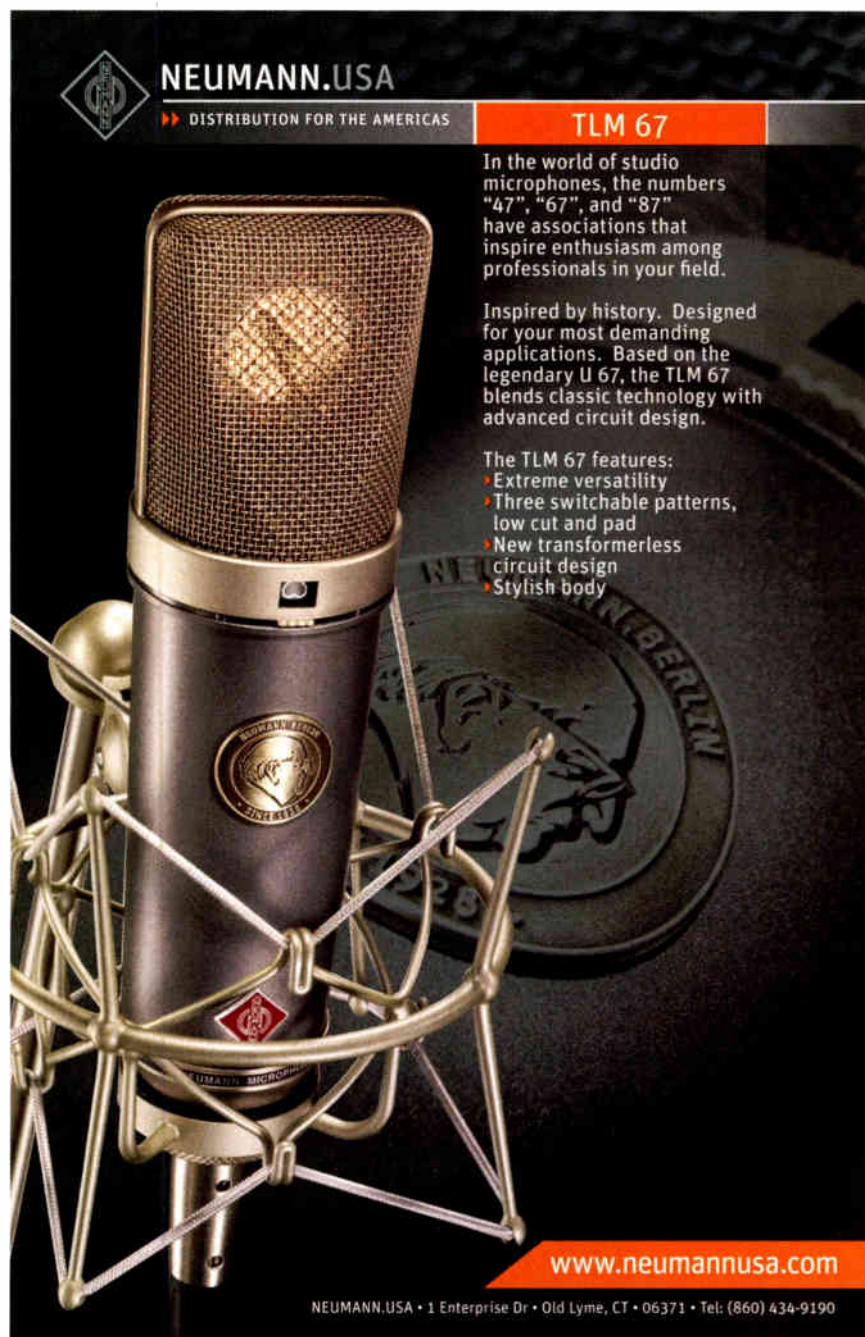
Dixon says that from the beginning of the *Reckoning* sessions, IRS Records' A&R had targeted "So. Central Rain" to be the first single from that album, which also required shooting a video for MTV. However, as Easter explains, "Those guys hated the idea of videos. They thought lip-synching and all that was really stupid." The band and their label solved this problem by making the video in Reflection Studio during the recording sessions.

"We convinced Michael that it was okay to do a performance video if he was really singing," says Dixon. So Stipe sang live during the video shoot, while the rest of the band mimed along to the album track behind artfully lit gobos.

Easter and Dixon may be the only non-bandmembers who could discern the difference between Stipe's emotional vocal on the album track and the live track he recorded for the video. And Stipe's truly authentic performance on the record and video helped make "So. Central Rain" and *Reckoning* the band's first mainstream successes. And in the 25 years since they cut their brilliant albums with Easter and Dixon, R.E.M. have stayed impressively true to their art, in spite of health problems, their own reluctance and the departure of drummer Berry in '97.

Dixon and Easter have remained friends with the bandmembers and with each other. Dixon garnered further production success after producing The Smithereens in '86 and says that The Smithereens' hits probably did even more to ignite his production career than the R.E.M. albums he worked on. Easter finally moved out of his garage in 1999 and opened the purpose-built Fidelatorium Studio. Both producers continue playing and recording in North Carolina and beyond.

"I'm still recording bands, and I'm still playing in them," Easter says. "The chances of anything I work on becoming as successful as R.E.M. now are certainly remote, but then again they were remote back then. From my perspective, I'm just doing the same thing I've always done." III



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COMING THIS FALL: **MIX AUSTIN**

PHOTOS: PAUL NATKIN



From left: vocalist/guitarist Carl Broemel, bassist Two-Tone Tommy, lead singer/guitarist Jim James, drummer Patrick Hallahan and keyboardist Bo Koster

By Carolyn Maniaci

MY MORNING JACKET

BIG SOUNDS, BIGGER VENUES

My Morning Jacket can really fill a room with sound, and as they've graduated to larger venues, their sound has evolved. Touring the U.S., the crew brings the same audio equipment to every gig, whether they're rocking a 3,000-seat theater or an 8,000-seat shed, so adaptability is the name of the game.

The band ended their summer/fall 2008 U.S. tour a few days early: After lead singer/guitarist Jim James injured himself during an Iowa City gig, MMJ's two Chicago shows had to be canceled, as well as their October/November European leg. However, they came through for Chicago

fans, and *Mix* caught up with them at the rescheduled shows at the Chicago Theater. The band is currently in Japan, finishing up its Asian schedule, which followed a busy January in Australia opening for Neil Young and playing the Big Day Out 2009 shows.

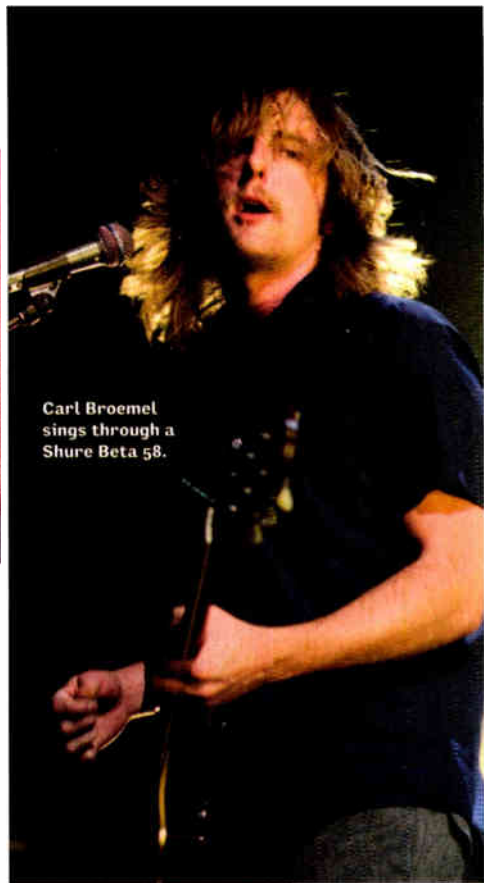
For their U.S. tours, the band car-

ries almost everything, using local sources to rent just front-of-house racks and stacks. MMJ travels with a Clair Global package that includes an i3 line array, two pairs of R4s for sidefills and SRM wedges, all running with Crown power amps. Although the tour had already ended, tour/production manager Eric Mayers was able to get together the exact same package for this mini-tour, which combines the Chicago shows with a New Year's Eve blowout at Madison Square Garden in New York City. "With the holidays and the weather in the last few days," Mayers says, "Clair's really put its logistical systems to the test and made this thing work for us." At the Chicago Theater, local rentals supplied left and right hangs comprising 12 mains per side and six L-Acoustics dV-DOSC cabinets with dV-SUB subwoofers.

Front-of-house engineer Ryan Pickett is running 40 tracks through a Midas H3000 board with Summit DCL-200 compressor/limiter applied on the mix bus stereo out. For compression, he likes to keep things in the analog realm for the most natural sound. He uses a dual pair of Summit TLA50 compressors on the drum



Carl Broemel sings through a Shure Beta 58.



sub-groups and background vocals and the TL Audio 5021 on the bass DI and lead vocals. Pickett sub-groups each of the guitarists' (Jim James and Carl Broemel) double Mesa Boogie Tremorerb 2x12 rigs and applies a Volare tube compressor to both. A Dr. Z Amplification Z Air Brake onstage limits the signal to the guitar cabinets without altering their tone. James' acoustic guitar goes direct but also gets the Volare treatment, which sweetens up its tone nicely. On bass, Pickett uses Radial's Phazer instead of delay, fattening up the sound by tweaking phase alignment between the DI and the mic on the bass amp.

Pickett dials in a stereo-heavy house mix to re-create the studio sound. Heavy reverb is also a big part of the band's sound. The engineer likes the Eventide 2016 for reverb, applying it pre-fader on the aux send

the first few years I was with them it was always an opening-slot situation, where you just do the best you can with what you have. Now it's nice to be able to stretch out."

Added to the FOH system, the band's touring gear now includes a 48-channel recording rig. Pickett sets up a pair of Alesis HD24s tandem to the board, loading them up with about 40 GB of mix-ready music every night. This has proven to be a user-friendly way to archive all of the band's performances, and it's far better than a straight-up board mix. "It's similar to analog in that you hit Play and Record, and you don't have to nurse it all night," he says. "On the same rack as the HD24s, we've got Klark Teknik splitters that have pre's built into them, so you can set the levels to the recorders, but it's the front end of the sound-out line. The



to supply more mix return.

Having worked with MMJ for six years, Pickett remembers the days before he had the luxury of picking and choosing his gear. "What has changed most has been them becoming a bigger band," he recalls. "It's given me more freedom to think about things in more depth, whereas

splitter stage feeds out to me, I run it into the Klarks, they feed both recorders and the other loop comes back into the desk. So you get a separate set of gain structures." Pickett backs up the show each night to clear the decks for the next performance, and they're good to go.

Besides just satisfying the archiving penchant, Mayers says the live recordings have proven useful for radio spots and other promotions. The band can appear "live" on the radio in any



Jim James sings through a Shure SM58.

city on short notice.

The band has an endorsement from Shure, which provides almost all of their mics. James sings through an SM58, and for backing vocals, guitarist Carl Broemel and keyboardist Bo Koster are on Beta 58s. Pickett uses an AKG D-112 alongside a Shure Beta 91 to double-mike the kick drum. Whereas most engineers use one mic inside and one outside the kick, Pickett says, "I've gotten to the point where I do a double inside because they're so loud onstage. The bass guitar would end up feeding into the front-head mic, so it's best to just keep it all inside the drum."

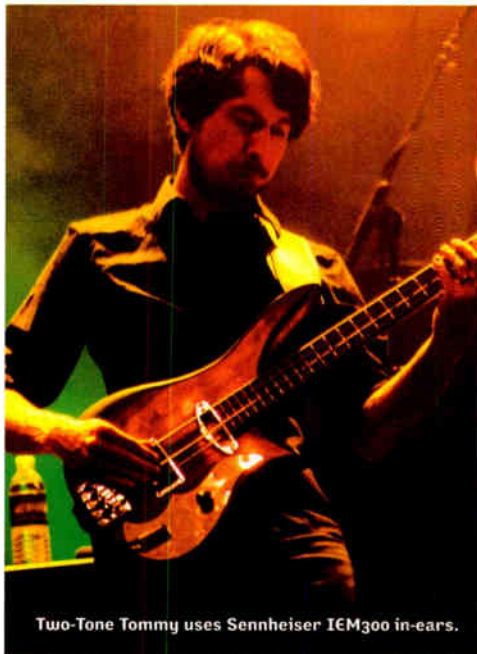
The band's huge onstage sound impacts a lot of sound decisions, especially for Dave Kissner, the band's monitor engineer since 2004. The band members have made attempts at moving into the in-ear-monitor world, but so far only Broemel and bassist Two-Tone Tommy have gotten comfortable using ears. The others like it loud and protect their hearing with -9dB Ultimate Ears ear-plugs, which presents a little bit of a challenge for monitoring. Past attempts to get the band to dial back their stage volume fell flat, says Kissner. "That's like trying to stop a freight train with a feather pillow. We just let them do what they do, and they appreciate what I can do to let them get as loud as they want onstage. Once you find that sweet spot in the mix, everything falls into place."

Koster gets one wedge behind him and one on the front corner of his keyboard riser. James hovers over his three wedges, which Kissner mixes with heavily reverbed vocals on the sides and clean in the center. He keeps the vocals out of the sidefills, because otherwise James has a tendency to blow himself out, except in the two songs where he sings falsetto, in which he needs the extra boost from the sidefills to feel his vocals over the band. Drummer Patrick Hallahan, with his long hair backlit like a flaming halo, is flanked by two Clair 12-inch subs along with his two wedges. He likes a "wall of sound" out of his monitors: "Patrick's a powerhouse," says Kissner. "He gets a full stereo mix behind him because he wants to hear everything, even over his own drums. He gets enough to rock his seat, but not enough to rock him off the riser."

Broemel and Tommy are both on Sennheiser IEM300 in-ears, but each still gets a full mix

in their wedges, both for a better feel and as a backup in case anything happens to the in-ears. Kissner feeds Broemel a little Yamaha SPX-990 reverb on all the vocals in his ears, with a long hall setting dialed up faintly to give him more presence. On a song called "Dondante," Broemel plays sax, and that trail from the 990 gets him in the mood with a more romantic feel.

Every monitor engineer has to learn to pick up various cues from the band during a performance. Each band-



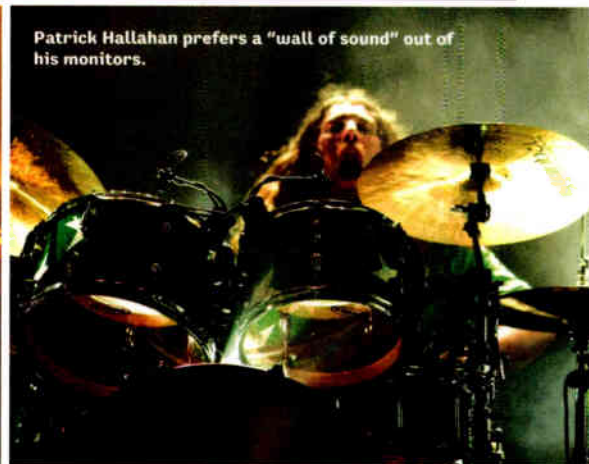
Two-Tone Tommy uses Sennheiser IEM300 in-ears.

member has his own special signals for Kissner: "Jim does what I call the 'pout and point,' where he pouts his lips and points up or down. Carl moves his fingers like they're a mouth. Mostly, I've gotten very good at reading lips."

Kissner is using a TC Electronics M1 reverb onstage, where he runs the monitors "like I'm breaking out of jail" through a Midas H3000 console. He believes there's some advantage to the continuity of using the same board as FOH, but more importantly, he and Pickett are both big fans of working in the analog world as much as possible. In overseas situations, where the band doesn't carry any audio equipment except mics, ears, backline amps and effects, they have to take what they can get and offer: work with digital boards. In that case, Kissner prefers the



Monitor engineer Dave Kissner; FOH engineer Ryan Pickett, production manager Eric Mayers



Patrick Hallahan prefers a "wall of sound" out of his monitors.

Yamaha PM5D, but he's much happier with an analog setup. "I like having the controls of analog and being able to tweak something minute without having to make 10,000 moves to accomplish one thing. It takes thought to run sound, but [in digital] it really takes a lot of concentration on the board and not so much on the feel of the music. Analog gives you the freedom to get into the soul of the song."

This winter takes My Morning Jacket to New Zealand, Australia and Japan. Instead of the full FOH setup they've been using Stateside, they'll be carrying only some outboard gear. Says Mayers, "This is going to be a much different scenario for us. We're going to be on every kind of console imaginable—from 5Ds to Digidesign Profiles—so it will be 'festival-style' the whole way. The band plays a lot of festivals, so we're all well-versed in this kind of routine." III

Carolyn Maniaci (nee Engelmann), formerly an assistant editor for Electronic Musician magazine, is now based in Chicago.

SOUNDCHECK

Joe Satriani



Joe Satriani helped design Peavey's JSX Series

Photos & Text by Steve Jennings

Guitar virtuoso Joe Satriani brought his sizzlin' licks across the U.S. for a quick six-month tour. *Mix* caught up with the guitarist and his engineers at San Francisco's Warfield Theater.

Production manager/front-of-house engineer Russell Giroox is manning a Yamaha PM5DRHV2 board, loaded with MY16-AT cards to archive and multitrack the gigs. Monitor engineer Simon Blanch

uses the same model desk, mixing Sennheiser EW300 G2 IEMs that Blanch calls invaluable "because of the frequency options." All effects/dynamics for both engineers are onboard.

While Clair Bros. Nashville provided the P.A. package (including SRM wedges, and ML18s and R4s for sidefills), the tour employed local racks and stacks. "We would literally get something different each day, depending on local vendors and venues," Giroox explains. "We did carry four Clair P2s for frontfills, which were perfect for our application: They're low-profile enough not to affect sightlines in the front row of the theaters and are full-sounding boxes for their size." Giroox employed the Clair Lake iO as an EQ for the mains and frontfills. "It was nice having the ability to walk a whole theater and tweak the system—some of those balcony stairs are killer!"

Giroox says that Satriani uses Peavey JSX heads and JSX 4x12 cabs, which the guitarist designed with the company. The rig has a DI/speaker simulator output that Giroox used exclusively as it best represented Satriani's tone.



Production manager/FOH Russell Giroox (left) and monitor engineer Simon Blanch.

fix it

James McCullagh, Lucinda Williams' FOH engineer

Coming offstage there's 32 inputs, but then we've got audience and record mics; I also double up a bunch of drum channels and route them through some processing and then back into the board on separate faders for a different sound. All in all, we've racked up quite a lot of inputs. I also run a mic line—which is copper wire, not a digital line—as we only have a digital snake (MADI lines) running between DiGiCo D1 consoles from stage into an Avalon 737 mic pre and then into the console on a line-in for Lucinda's vocals. Before it hits the stage rack, it gets split with a Radial ISO splitter to the DiGiCo stage box and then to the mic line, which runs down

to me. I've actually got two vocal channels: the MADI one and the mic line. The reason for all this is that if I had to insert the 737 over her vocal channel, I would not be using the mic pre of the Avalon, only the EQ and compression. What I want is the Avalon to be the front-end of Lucinda's vocal sound. That said, we are using the DiGiCo D-TuBe pre's in the stage rack on our vocals and acoustic guitars, and they sound really great.



tour log

2008 Top Tours

Pollstar has just released the Top 50 North American tours, based on ticket sales (calculated in U.S. dollars and based on reported information and research by Pollstar in 2008). Here are the Top 10; visit mixonline.com for a full report.



Clockwise from top: Bruce Springsteen, Rascal Flatts and Celine Dion



Artist	Average Gross (\$)
Madonna	5,539,749
Celine Dion	2,936,129
Bon Jovi	2,269,516
Eagles	2,098,263
Tina Turner	1,907,833
Kenny Chesney	1,898,817
Bruce Springsteen & The E Street Band	1,871,922
The Police	1,499,213
Neil Diamond	1,172,090
Rascal Flatts	886,264

Under the Vegas Volcano

To celebrate the multi-million-dollar renovation of the Mirage's The Volcano (with state-of-the-art pyrotechnics), percussionists Mickey Hart and Zakir Hussain created

ence and we surround them with loudspeakers. In this case, the audience surrounds the speakers and they move around freely," explains Ryan Knox of Acoustic Dimensions.

Onlookers can view The Volcano from areas on either side of the water—one in front of the hotel and the other on The Strip—so the system uses multiple point sources. It features a total of 25 MILO line array loudspeakers (painted green to match the foliage), clustered in small stacks of two, three or four boxes placed throughout the lagoon. Each stack has its own 700-HP subwoofer, along with several others on the island. A Matrix3 audio show control system allows the image of the music to be manipulated over 180 degrees. Signal processing is handled by a Galileo loudspeaker-management system.

"The music travels over a large reflective pool of water, which requires a fair amount of power," adds Brad Cornish of Technology West Group. "That water is being blasted by jets of flame. Between that and the natural desert heat, we've essentially created a microclimate, giving us an exceptionally high level of humidity to pass sound through. It calls for a lot of power and some rather unique and meticulous system tuning."

an audio track aided by a new Meyer Sound system. Commenting on scoring the track, Hart says, "You wake up one morning and are given the task to birth a full-blown volcano. From a whisper to a volcanic fury, the Meyer Sound system packs a sonic punch that brings The Volcano to life."

Overseeing the project was Sun Valley, Calif.-based design firm WET, working with Acoustic Dimensions and systems installer Technology West Group. "In most sound designs, we're working with a stationary audi-



load in



The Feeling's recent European tour showcased a Turbosound P.A. provided by Mansfield, UK-based Entertainment Sound Specialists. Pictured is vocalist/guitarist Dan Gillespie Sells.

Firehouse Productions deployed an L-Acoustics LA8-powered KUDO array for Sigur Ros' recent North American tour leg...Toronto's Domicil Jazz Club sees a new Adamson SpekTrix Series system; Adamson European tour support Jochen Sommer executed the sound design using Shooter Version 2.7.0...Doug Redler, guitar tech/stage manager for k.d. lang, reports that the artist and guitarist Grecco Buratto are using Lectrosonics M133A active guitar cables, IM UHF digital hybrid wireless beltpack transmitters and R400A digital hybrid wireless diversity receivers...FOH engineer Ian Bond has purchased a Midas PRO6 Live Audio System (serial #007—get it?!) from UK distributor Shuttlesound, adding to his rental company, IPB Audio. The system went straight out on Marillion's Happiness Is the Road tour with FOH engineer Rod Brunton...Clair Bros. Systems recently upgraded the audio system at the RBC Center (Raleigh, N.C.), which now features a combo of JBL VLA and VerTec line arrays, as well as Application Engineered Series speakers.

road-worthy gear



Audio-Technica Earphones for IEMs

Audio-Technica announces two new headphones for onstage monitoring. The EP3 model (\$139 retail) has an 18 to 18k Hz response and features a gold-plated, right-angle stereo mini-plug with locking collar for a secure connection. The \$59 EP1 has a 60 to 12k Hz bandwidth and a standard mini-plug connector. Both feature three sizes of interchangeable flexible earpieces and universal-fit foam tips for a custom fit, increased isolation and comfort. Their ultracompact design makes them ideal for onstage use with M2 and M3 IEM systems. www.audio-technica.com.

Allen & Heath iLive-T Series

The T Series comprises the iDR 32 (32 mic/line inputs, 16 outs) or iDR-48 (48 mic/line ins and 24 outs) MixRacks with either the iLive-T80 or iLive-T112 mix controller. The mix surfaces boast touchscreen control and add another 8-in/8-out and 16-in/12-out, respectively, providing 40-in/24-out to 64-in/36-out systems with eight stereo FX engines and full dynamic/EQ/delays on all channels and a single Cat-5 cable-linking controller and MixRack. www.ilive-digital.com



RØDE M1 Vocal Microphone

Designed for vocal use but equally at home in front of high-SPL sources, the M1 features a solid die-cast body, steel pop filter/grille and a cardioid dynamic capsule. The M1's 75 to 18k Hz frequency response has a slight LF bump to add warmth and a +3dB presence boost peaking around 8 kHz to help vocals cut through the mix. Its cardioid pattern remains uniform at nearly all frequencies for max feedback rejection. Sensitivity is stated as -56dB, ±2dB 1V/Pa (1.6 mV @ 94 dB) at 1 kHz. Retail is \$199 with stand clip and protective pouch. www.rodemic.com

ALL ACCESS

Photos and text by Steve Jennings




Hawthorne Heights

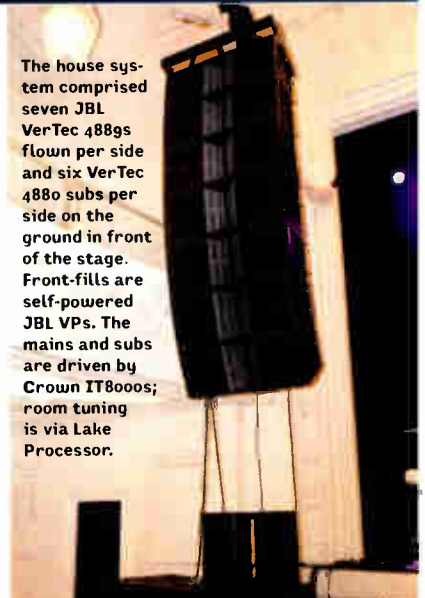
"Hawthorne Heights was carrying most of their own mics," Abreu says. "We provided them with SM58s for their vocals and a Shure Beta 52 for their kick mic."

Despite a few very tough years (including the death of bandmate Casey Calvert and an on-again/off-again relationship with their label, Victory Records), Hawthorne Heights (vocals/guitarist JT Woodruff, drummer Eron Bucciarelli, guitarist Micah Carli and

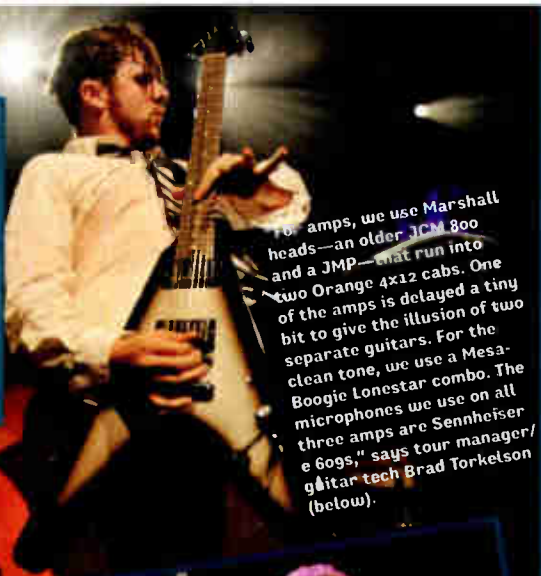
bassist Matt Ridenour) continue to wave the flag for emo-pop. Touring behind their latest release, *Fragile Future*, the band is playing theaters, relying on in-house engineers and gear. *Mix* caught up with the four-piece at San Francisco's Grand Ballroom.



Nick Abreu, full-time engineer at San Francisco Bay Area-based sound company Pro Media/Ultrasound and occasional FOH and monitor engineer/systems tech at the Grand Ballroom, mixed the show on a Yamaha PM5D console. "I like to keep it relatively simple," he says. "I was mostly using the onboard stock effects on the board: RevX 'verbs on vocals and guitars, as well as a stereo delay on the backing vocals for some songs. The only outboard processor I used was a channel of the DCL200 that we have at FOH on the lead vocal. Hawthorne's lead singer has a very dynamic voice, and it was nice to tame it a little bit in such a live room, as well as add a little warmth."



The house system comprised seven JBL VerTec 4889s flown per side and six VerTec 4880 subs per side on the ground in front of the stage. Front-fills are self-powered JBL VPs. The mains and subs are driven by Crown IT8000s; room tuning is via Lake Processor.



For amps, we use Marshall heads—an older JCM 800 and a JMP—that run into two Orange 4x12 cabs. One of the amps is delayed a tiny bit to give the illusion of two separate guitars. For the clean tone, we use a Mesa Boogie Lonestar combo. The microphones we use on all three amps are Sennheiser e 609s," says tour manager/guitar tech Brad Torkelson (below).



Sellers explains the complicated guitar rig: "We have the delayed guitar that is sometimes guitarist Matt Carter's live guitar, but can be A/B'd between that and a re-amped guitar. The guitar also runs in stereo through some of the pedal board, so things can get a little interesting if something goes wrong."



Bass goes through a Mesa Boogie Big Block head run into a Mesa Boogie 8x10 cab. A rack-mounted Sansamp runs direct to the P.A.



Eric Zintak (left) and Trevor Sellers (support band Emery tour manager/guitar tech)



According to stage manager/drum tech Eric "The Kid" Zintak, drummer Eron Bucciarelli's kit is miked with mostly Sennheiser models, including e 604s (toms). Snare takes a Shure SM57, while kick has a Shure Beta 91. Overheads are ATPro37s.

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MIX LIVE

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FEATURING STORY

Consoles Take Center Stage at PLASA

Maybe it's the economy, or simply a growing demand for smaller-footprint boards that consume less of those profitable seats in the prime main floor spots... but the hot console debuts in London at this week's PLASA show fit that category precisely. All featuring power and versatility in compact frames, the new entries in this market are the DIGiCo SD8, Midas PRO6 and Soundcraft's S13

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Jamal Woolard
 (right) and Derek
 Luke as Sean "Puffy"
 Combs in *Notorious*.

By Blair Jackson

'Notorious'

BIGGIE SMALLS LIVES IN HIP-HOP BIOPIC

Not to be confused with Alfred Hitchcock's classic 1946 romantic thriller of the same name, the just-released *Notorious* is the story of the hip-hop martyr known variously as the Notorious B.I.G., Biggie Smalls and (to his family and some friends) Christopher Wallace. His saga is certainly film-

worthy: The Brooklyn-born Wallace became a hip-hop superstar in the mid-'90s, selling millions of records and helping put East Coast rap—and Bad Boy Records boss Sean "Puffy" Combs, who's an executive producer of *Notorious* and depicted in the film by an actor—on an equal footing with

the dominating West Coast artists. Biggie married label-mate Faith Evans and seemed to have everything going for him, but he soon became embroiled in a fierce rivalry with various West Coast rappers and their posses—especially Tupac Shakur—and their public (and recorded) taunts and "disses" escalated

to violence. Eventually, Shakur, and then Biggie, were gunned down in their prime, with accusations about who ordered the “hits” (each’s camp blamed the other’s) lingering to this day. Biggie was just 25 when he was cut down in 1997, and in the years since his legend has only grown—and so have his record sales. His prophetically titled *Life After Death*, released right after his murder, has sold more than 10 million copies.

Even with Biggie’s popularity, it was no slam-dunk that *Notorious* would even get made. There has never been a major rap/hip-hop biopic (though the Eminem vehicle *8 Mile* was inspired by a slice of his life), and it was not clear who the target audience would be: Is it a “black” film, aimed at that demographic, or does it have broader appeal? But according to the film’s New York-based supervising sound editor and re-recording mixer, Lewis Goldstein, “Once it got into production and they started seeing dailies, I think they realized what a broad film it could be. The film *looks* amazing; the visual character of this film is astounding. The cinematography [by Michael Grady] and the direction [by George Tillman Jr.] make it look *huge*. It’s quite an accomplishment.”

In the title role, Jamal Woolard has received across the board plaudits for his uncanny physical and temperamental resemblance to Biggie; what’s more, he (and the other actors) did their performances live rather than lip-synching to playback.

“One of the music editors, Jamie Lowery, experimented quite a bit with trying to make Jamal’s voice sound even more like Biggie, pitching him down a little bit and trying some comparison plug-ins to try and match Biggie’s timbre,” Goldstein says. “But what we found is that it ended up slightly hindering Jamal’s performances by taking some of the edge off, so we decided not to do that. Jamal is not Biggie, but his performances are still really great. Ninety-nine percent of what’s in the movie is these people singing live. Occasionally, we had to go in and ADR a word here and there because it wasn’t said correctly or it wasn’t sung quite right, but we did that as little as possible. And when we did, we always got the same mic that was used in the live performance so we could match it perfectly.”

In the live music scenes, the actors mostly rapped/sang over a stereo playback track, and production mixer Mathew Price had eight to 10 live mics on the principals, as well as several booms on the audience. Goldstein says, “I got onto the project so late that a lot of the live performances were shot prior to me coming on

the job, and Mathew did amazing work, but I would’ve liked to have had some additional mics on the audience because that’s where a lot of the energy for those scenes comes from. It didn’t end up being a problem, though, because we figured out a way to get what we wanted from the boom tracks.” The solution for Goldstein was to use bits and pieces of the 12 to 15 available takes and use mics from these different performances. “We did some really tight editing on them to build these audiences and then aug-

out, but [director] George [Tillman] really didn’t want that. He *wanted* it edgy because that’s the way those performances sound in that world. That’s another reason he didn’t like most of the ADR we tried on the singing, too: It didn’t have that same live energy. Everything in this movie was about energy for him.”

Goldstein has been involved with film sound for more than two decades, getting his start in New York right out of college working as a sound editor on commercials using the then-



Notorious sound crew (L-R): David Briggs, Alex Soto, Lew Goldstein, Rusty Dunn, Cate Montana, Tom Ryan, Nathan Lindsey, Richard Kameran, Billy Orrico

ment them with some sound effects,” he says. He was hampered somewhat by the amount of playback music in the boom takes, “so I had to go through a lot of EQ and noise reduction to try to get rid of as much of the playback from the boom channel as possible so I’d have these crowds clean.

“Having so many channels of crowd, I could really pan them around the 5.1 field and create a very large audience sound, which was great because on two of the primary songs, when Biggie is at his pinnacle—‘Warning’ and ‘Juicy’—there was a tremendous amount of crowd participation where the audience is singing with him, and since I had the boom track [takes], it sounds tremendous. Then we also did a little loop group recording with about 15 people to give even more definition to the crowd.”

Goldstein says that Woolard’s performances were so tight and consistent from take to take that “later you could take all these different performances of the same song and cut in and out between them and they’d match *incredibly well*.” In fact, the only downside to the live performances was “these guys were putting out so hard into these wireless radio mics—and bouncing around the stage—that those recordings are a little crunchy. It’s very compressed live singing, verging on distortion. My inclination was to try to clean everything up and smooth things

new New England Digital PostPro system. From there, he drove to L.A. and landed a position at the first big digital post house in town—EFX Systems—cutting dialog, FX and, within a couple of years, also supervising on myriad TV and film projects. “[EFX founder] George Johnsen had an amazing vision of the digital future but it would take quite a while for the film industry to come around,” Goldstein says. “He had so much financial investment in this with the NED PostPros and Synclaviers and [Sony] 3324 digital multitracks. There was a group of about eight of us who were doing almost all of our work on digital editing systems, which was rare back in the mid-’80s. I’ve stayed with digital technology ever since and gone through *many* different editing systems—from Synclavier to Otari to the Doremi Dawn system. I also had a hand in helping out [in the development of] the AudioVision, which was Avid’s original audio editing device.”

The arc of Goldstein’s career took him from L.A. back to New York in the mid-’90s, when he worked out of C5 with the likes of Skip Lievsay, Ron Bouchard and Phil Stockton. “That was an amazing time,” he says. “We were working on things like *Men in Black*, Coen Brothers films like *Fargo* and with many great New York directors; lots of really, really good films.” These days, Goldstein has his own Manhattan-based sound

editorial shop, NYC Department of Sound, with a staff of editors, all of them fluent on the digital format of the day, Pro Tools. His work the past few years has included supervising and/or mixing on a variety of big and small projects posted in New York City, including *Last Holiday*, *The Squid and the Whale*, *The Sentinel*, *The Visitor* and another interesting recent music-biz film, *Cadillac Records*—the story of Chess Records—which he finished mixing right before *Notorious*.

"I've really only ever mixed in a virtual environment," he comments. "Every film I've mixed has been Pro Tools-based. I come from an editing background, and moved from that into mixing. A lot of the jobs I have, because of budget and time frame, require a good amount of editorial during the mix process. And there is no better way than to have all of the sound source material in a system that is also the mix system. At the same time, a lot of lower-budget material in New York—the \$5 million and down films, even the \$15 million films—have more limited mix budgets. And with a system like an ICON or a Pro Tools-based mixing system, you're able to get the job done incredibly efficiently."

Goldstein says that originally on *Notorious*, "We were slated for a hybrid mix. I was going to do FX and backgrounds [on Pro Tools] and another mixer was going to be doing dialog and music on a [Neve] DFC, and we'd split it up that way. But we did a series of temp mixes with just me mixing in Pro Tools in this facility downtown called Goldcrest—a great Dolby-certified room where I do a lot of my mixing. We did most of the ADR there, too. And as we got closer and closer to the final mix of the film, there were a lot changes coming in and the schedule got pushed—we started adding voice-over. Danny Elfman came on as the composer and that took some time, and they were also doing picture changes. We started losing the time we were going to have at the [DFC studio with the other mixer], and since these smaller Pro Tools mixes I'd been doing were working out well, it was eventually decided to finish the movie that way, but in a bigger room."

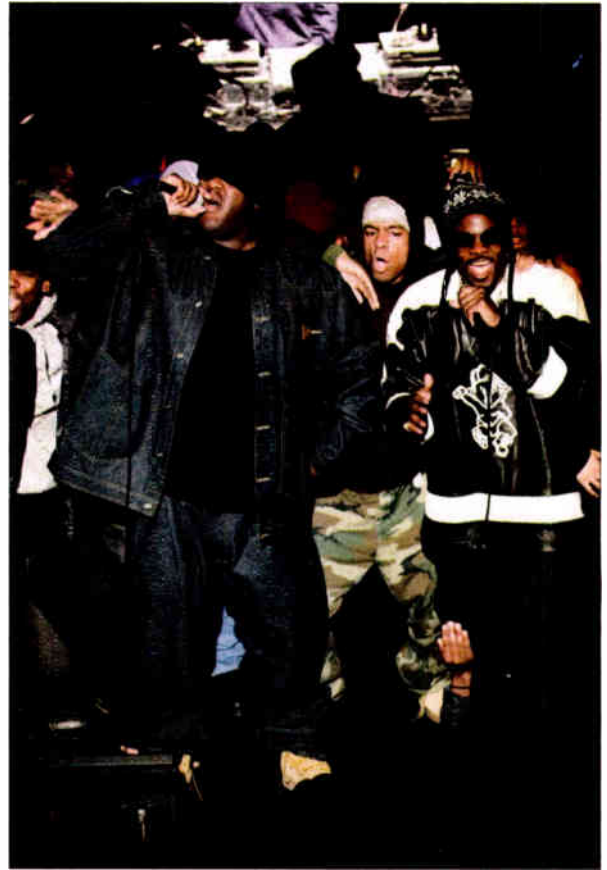
The mix studio he chose, Digital Cinema, in Midtown on the far West Side, was built many years ago for the late, Oscar-winning mixer Rick Dior. "It's probably the largest mix room on the East Coast," Goldstein says, "and it's not used that often because the majority of mixers in New York are on staff at other facilities. But it's an amazing room; more of an L.A.-style room, with great acoustics and the physical volume. I mixed a chunk of *Cadillac Records* there, and also mixed a [forthcoming] film called *New York, I Love You*

there." Although Digital Cinema is equipped with a Neve DFC, "I have never turned it on," he says. "I brought in a Digidesign C24 and I mixed the entire film that way. But I utilized the room for what it has to offer—a great space."

Between the many music scenes and other action on the streets, in clubs, in prison, at parties, in houses and apartments and such, *Notorious* proved to be a complicated film to mix. "This film has a lot of sides to it, which made it a lot of fun and challenging," Goldstein says. Much of it required a fairly straightforward and realistic approach, but there are also many interesting sound design moments that challenged Goldstein and his FX editor/designer Rusty Dunn to be out-of-the-box creative. Goldstein says, "There's some sound design that's almost like action-movie sound design, with fast swishes and all this motion, and then there are also party scenes that go into super-slo-mo, almost like music video scenarios, as well as flashback moments.

"I swear, I've never mixed more music ins and outs: overlapping with this, it's cross-fading, it's now source music taking place in a bar and it slowly becomes a score piece. In party scenes in *Notorious*, a piece of music would start out as score—it slams in and starts the scene—and over a period of time it becomes smaller, moves to the background, becomes like an underscore, it gets more of a tight room reverb, and all of sudden becomes a source cue. There are also some scenes where source and score are playing simultaneously and it was a real fine line determining which would be the dominant element in a scene. It would move back and forth between them depending on what needed to be emphasized emotionally." Goldstein describes Elfman's score as "very different for him. A lot of it is sort of tonal, drone-y and ethereal. There are some more traditional orchestral things, too. But it's all very effective.

"It's a loud movie, one of the loudest I've ever worked on," Goldstein says with a laugh. "The amount of subwoofer we put on—not just on the music, but also on sound effects, and



In the live music scenes, the actors rapped/sang over a stereo playback track while keeping the energy flowing.

these transitions between scenes, as well as several flashback moments that were low-frequency bays and swishes and impacts."

He says that director Tillman had a lot of input into the sound and "knew exactly what he wanted. He was there every second. So was the picture editor, Dirk Westervelt. The amount of time those two put in was staggering. Dirk also had a great editorial department that early on did everything right as far as setting up the film in the Avid. It gave us great flexibility throughout the process to constantly be getting OMF [Open Media Framework] updates. They had loaded all of the audio from the shoot into the Avid.

"And since all of the microphone channels were ingested at the same time in Pro Tools, David Briggs—the dialog editor—was able to switch easily between mics, even if the only channel cut in the Avid was the mixed track."

The days and nights finishing *Notorious* were long and intense, but at the end of the day, Goldstein was elated by the experience: "It went through a dramatic evolution picture-wise, story-wise and sound-wise, always getting better and better, which is what you hope for. It was a very worthwhile endeavor from a movie point of view, a craft point of view and working with some great people." III



Left: Studio B with SSL C300 and Dynaudio speakers

Tomato and Larry the Cucumber are, ask your young kids!) “We’ve done all their episodes,” Paragano says.

“We shoot all the dialog, deal with all the editorial, get it back from the picture editors, put it all together. It’s great to see it go from storyboards to finished animation.” Paragano also recorded the dialog and some of the music for the irrepressible vegetables’ 2008 feature film, *The Pirates Who Don’t Do Anything*, as well as mixing the foreign versions of past shows.

Paragano was the re-recording mixer for the bonus features on the Rolling Stones’ multi-concert DVD set, *The Biggest Bang*, and has worked on many other documentary-style shows. Last year he was the ADR mixer for Nicole Kidman’s extensive ADR for the film *Australia* (she has a home in Nashville with husband Keith Urban), hooked directly into the film’s post-production studio in Sydney (see *Mix*, November 2008), and completed ADR with Ashley Judd on the forthcoming Harrison Ford-Sean Penn drama about immigration, *Crossing Over*. Meanwhile, on the music side, “we just remixed six Roy Orbison songs for *Guitar Hero II*, which was a lot of fun. We’ve been archiving, restoring, repurposing and remixing for the Orbison estate for almost nine years now.”

With Nashville’s film and television industry continuing to expand, Paragano sees his facility growing, as well. “In the past year we have added a fourth room,” he says, “a picture-editing suite which allows us to have in-house editorial, graphics and DVD/Blu-Ray authoring capabilities. I’m also hoping to expand into our adjacent 3,000 square feet and put in more editorial suites and a dub stage/screening room. None of that is definite yet, but I do believe there is the work to support that kind of expansion.”

And if it comes to pass, it will be good not just for Paragano and his studio, but for Nashville in general. ■

PARAGON STUDIOS

POST IN NASHVILLE? YOU BET!

By Blair Jackson

One doesn’t ordinarily think of Nashville as a hotbed of film and video post-production activity, but for one of Music City’s major players, that realm has become increasingly important the last few years, to the point where they are now attracting post work from all over the world. Fred Paragano’s Paragon Studios, which is situated in a wooded area in the Nashville suburb of Franklin, still does plenty of music projects in its

a good position to start from,” he says. The studio attracted a lot of concert DVD sound work, “and then we started getting into the shooting side of it, too, so we were doing sound and picture *and* post-ing shows, as well. Then, as we started doing a lot of this, I thought, ‘We’ve got to step this thing up,’ so that’s when we purchased and installed the SSL C300 for Studio B. It was kind of frustrating mixing larger projects on a single Pro Tools [Pro Control] system, so the move to an actual film-dubbing console two-and-a-half years ago made an enormous difference. It’s been awesome. It’s a two-seat console and it’s been a great calling card for a lot of cool projects.”

How does it make his job easier? “The extensive busing structure and the ability to easily route things to and from wherever and still be able to monitor multiple sources and stems properly makes the whole process so much easier. It has sped up my workflow dramatically.”

Which is a good thing, since Paragon’s post business has increased significantly since they installed the C300. A couple of regular gigs have kept the room humming: Over the past year Paragano has recorded and mixed eight episodes of the brand-new PBS series about songwriters called *Legends and Lyrics*, including segments shot in Louisiana and Nashville featuring such artists as Kenny Loggins, Richard Marx, Three Doors Down, Kris Kristofferson and Phil Vassar. And for the past five years, Paragon has practically been a one-stop shop for the popular award-winning animated children’s TV/DVD series *Veggie Tales*. (If you don’t know who Bob the



beautiful and spacious “A” Room (equipped with an SSL XL-9080K). However, these days it’s the “B” post room in the 22,000-square-foot Russ Berger-designed facility that’s attracting a lot of the work *and* buzz.

According to Paragano, the move into post happened naturally over time but accelerated as the fortunes of the music business changed and diminished the past few years. “We started getting post-production projects just naturally because all three of our control rooms are set up for mixing to picture—they’re all 5.1-capable—so we were in



Owner/engineer Fred Paragano

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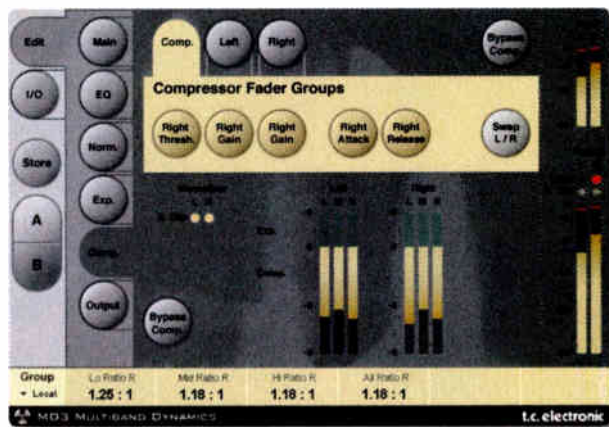
High-End FX for Your DAW

TC Electronic PowerCore 6000

TC Electronic's (www.tcelectronic.com) System 6000 algorithms, once only the domain of the system with the same name, are now available on the PowerCore 6000 platform for \$3,495, a fraction of the 6000's price. The unit features eight FreeScale DSP engines, the same DSPs used in System 6000, and has an SRAM memory design that supports high-performance reverbs and delays. This enables users to run the 6000's reverbs and delay algorithms with popular DAWs, as well as with any other VST- and Audio Units-compatible host. PowerCore 6000 includes three of TC Electronic's best reverbs, starting with the VSS3 stereo source reverb, a genuine and original reverb directly ported from the System 6000. NonLin2 is an effects reverb capable of generating compact vocal ambience, percussive and dramatic drum sounds, reverse reverbs and

new "twisted" effects. Completing the reverb section of PowerCore 6000 is DVR 2 digital vintage reverb, which emulates the original EMT250 processor.

PowerCore 6000 is expandable, offering a final audio touch with the MD3 Stereo Mastering Tools. M and S components of a stereo signal can be processed separately and provide even more control, making full use of the Spectral Stereo Enhancer. The mastering options given with the inclusion of the MD3 are supported through two more plug-ins: Brickwall Limiter, the plug-in used to get rid of the signals known to generate distortion in consumer CD players, radio processors and data-reduction codecs; and Unwrap 5:1, the tool that facilitates



smooth and fast stereo to 5:1 up-conversion. Rounding out the plug-in package that comes with PowerCore 6000 is TapFactory, a delay/reverb hybrid based on the Reflector algorithm from System

6000. TapFactory features effects that range from reverbs like ambience and early reflections to delay, and allows individual parameter settings for each of its 24 taps within seconds.

Versatile Quick-Change Artist

Focusrite Liquid Saffire 56 FireWire Interface



The new flagship 2U multichannel FireWire I/O from Focusrite (www.focusrite.com, price TBA) features Liquid technology combined with the Saffire PRO interface to deliver a host of preamp flavors, seamless software integration and routing flexibility. Two of Liquid Saffire 56's eight preamps use the third generation of Focusrite's Liquid Preamp; each provides a choice of 10 different preamp emulations. Models are based on the Neve 1073, Pultec MB-1, Telefunken V72 and more. A harmonics dial on each Liquid preamp lets users compensate for variance in vintage originals of the same model, or to add levels of 2nd, 3rd and 5th-harmonic distortion to shape the preamps' performance creatively. I/O options include 10 analog outputs, 16 channels of ADAT I/O, stereo S/PDIF or AES I/O (on RCA phono), MIDI I/O and two virtual "loopback"

inputs for routing digital audio between software applications. Mic, line and instrument inputs all have independent connectors. In addition, onboard word clock I/O allows Liquid Saffire 56 to supply a master clock for your studio or slave to an existing clock.

Analysis Tools for the Mac

Blue Cat Audio VST Plug-In Bundle

Blue Cat Audio's (www.bluecataudio.com) latest version of its analysis plug-ins (already available for PC) features Mac OS X compatibility, as well as several improvements and fixes. The six VST plug-ins are available as a single bundle (Blue Cat's Analysis Pack) or separately (\$299 each). They include an audio level meter, spectrum and stereo field analyzers, and a multitrack oscilloscope. While the Multi Series offers multitrack analysis, the Pro Series lets users extract parameters from the incoming audio signal and record them as automation curves or send them as MIDI CC messages for unique sidechaining effects and external hardware control. The upgrade is free for existing customers, with demo versions available for download.



VIs at Warp Speed

Muse Research Receptor 2 Pro Max

The dual-rackspace, 18-pound Receptor 2 Pro Max (\$3,199) from Muse Research (www.museresearch.com) features a 3GHz dual-core processing engine, 3 GB of RAM, a 1TB drive and an E-SATA port for connecting to external drive arrays. Pro Max's time-saving software features include Muse's Universal Preset Access (UPA), which brings out all of the factory presets of a virtual instrument or effect for easy access from the mixer-like user interface. The new model also has enhanced Ethernet performance benefits with UniWire™ technology that preserves your CPU, letting users offload processor-intensive tasks to the Receptor. The unit comes with updated factory sounds, including hundreds of presets based on the Plugsound Box collection of virtual instruments with keyboards, synths, GM sounds, drums, urban sounds and loops.



Affordable Directionality

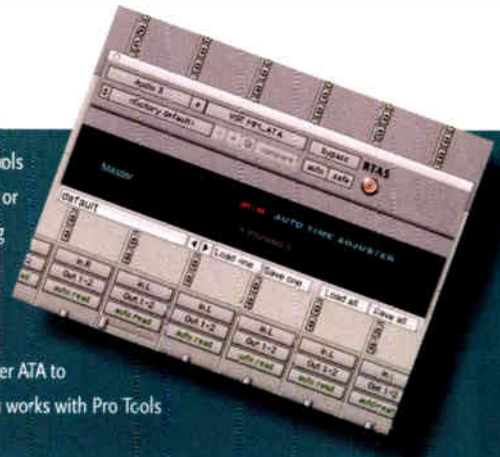
Avlex Superlux PRA-116B Shotgun Mic

This compact, 7.8-ounce shotgun mic from Avlex (www.avlex.com) features a unidirectional polar pattern, excellent off-axis rejection and an integrated low-frequency roll-off switch set at 80 Hz at 12 dB/octave. The PRA-116B (\$210) includes a mic clip, camera shoe shock-mount adapter, windscreen and carry pouch, and it is powered by a single 1.5-volt AA alkaline battery (included), promising 800 hours of use.

Making LE More Like Its Big Brother

Mellowmuse Auto-Time Adjuster

Auto-Time Adjuster (\$49) from Mellowmuse (www.mellowmuse.com) is an RTAS plug-in for Pro Tools LE/M-Powered, and is designed to enhance workflow by automatically compensating for plug-in or hardware insert latency. Previously, non-TDM users had to compensate for plug-in latency by moving individual audio tracks backward/forward, or using Digidesign's Time Adjuster, which meant a lot of tweaks whenever a plug-in was changed in a large project. Auto-Time Adjuster uses audio ping-pong to calculate and compensate for insert latency automatically on audio and/or aux tracks with the click of a button. To add or remove a plug-in on a track, users simply click the Ping button on the master ATA to calculate current latencies and synchronize the tracks, even when using hardware inserts. The plug-in works with Pro Tools LE/M-Powered Version 7.3 or above, Windows XP or Vista and Mac OS 10.4 or higher.



Lotsa Watts for Your Sub

Lab.gruppen **PLM 14000 Power Amp**

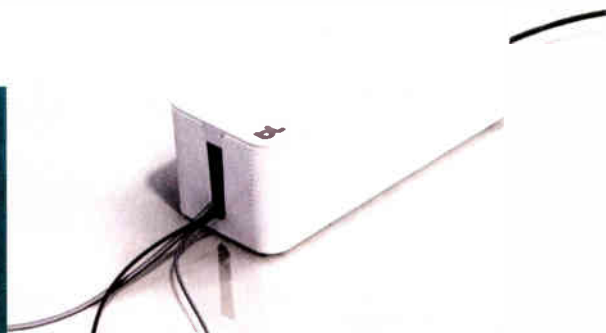
Built around a 2-channel amplifier platform optimized for high-power requirements, the PLM 14000 (\$3,495) from Lab.gruppen (www.labgruppen.com) pumps a massive 7,000 watts/channel into 2 ohms and 4,350W/side into 4 ohms, making it ideal for demanding subwoofer and low-end applications. As with the company's 4-channel PLM 10000Q, the new PLM 14000 integrates Dante networked audio distribution, Dolby Lake drive processing and load verification with real-time performance monitoring. It also offers extreme power density, patented Intercooler cooling, a full suite of protection features and a Power Average Limiter (PAL) to prevent tripping AC breakers. Parallel or redundant input/outputs are provided for analog, AES digital and Dante networked audio signals.



Keepin' It Clean and Simple

Bluelounge **CableBox**

This affordable and simple enclosure from Bluelounge (www.bluelounge.com) offers a tidy, practical solution to unsightly AC cable clutter while eliminating fire risk and dust accumulation. The CableBox (\$29.95) accommodates power strips and surge protectors of all shapes and sizes with room to spare for surplus cable length and adapters. The unit comes in black or white; it has non-slip rubber feet and is made from flame-retardant plastic.



Hybrid I/O for Your DAW

Lexicon **IONIX FW810S FireWire Interface**

The IONIX FW810S (\$1,099) from Lexicon (www.lexicon.pro.com) steps out of the typical FireWire I/O box to offer integrated channel strip processing, dbx high-voltage mic pre's and the new Pantheon II reverb plug-in. I/Os include two front 1/4-inch/XLR combo jacks for mic/line or instrument inputs; six rear mic/line combo inputs; eight analog TRS outs (7.1 surround capable); stereo main outs; stereo S/PDIF digital I/O; MIDI I/O; and headphone out. Operating up to 96k, the IONIX features dbx Type-IV conversion; a software mixer with dbx compressor, limiter, gate and EQ on each channel; the ability to save/load up to five monitor mixes; and output routing to incorporate external effects gear. The Pantheon II reverb has 35 factory presets, and users can change the parameters of six different reverbs. It also includes a hardware monitor reverb for zero-latency monitor mixing. The Windows/Mac-compatible software suite includes Steinberg's Cubase and Toontrak EZdrummer Lite.



Surround Sweetening

Eiosis **AirEQ 5.1**



The new multichannel 5.1 EQ plug-in from Eiosis (www.eiosis.com, €200 native, €400 TDM) promises an easy-to-use GUI for equalizing 5.1 buses, with simple mouse-click access to the L, C, R, Ls, Rs and LFE channels. Other features: L/R and M/S modes, a display offering frequencies or notes, band naming and Digidesign ICON mapping. AirEQ 5.1 uses double-precision processing for maximum audio resolution. Eiosis has painstakingly matched AirEQ 5.1 with the analog curves, promising natural HF equalization without harshness or artifacts. AirEQ is available for TDM, RTAS, AudioSuite and Audio Units mono, stereo and 5.1 versions.

Compact Field Unit

Audio Developments AD255 Portable Mixer

The latest small-footprint mixer from Audio Developments (dist. by Independent Audio, www.independentaudio.com), based on the AD245 Pico Mixer, features a phantom or 12V-powered mic preamp, three-band EQ, transformer-balanced inputs and outputs, highpass filter, aux outs with separate rotary controls and limiters across the main outs, which may be linked for stereo operation. The AD255 (\$6,094/six inputs, \$7,227/eight inputs) also features a twin-LCD-meter display (PPM or VU-switchable), headphone monitor and an electronically balanced stereo tape return, and is powered by eight C cells, fitted internally or from an external 12V-15V source.



Two Capsules, Two Options

KMF Stereo Microphones

KMF Audio (www.kmfaudio.com) is now shipping both tube and solid-state versions of its stereo microphone. Both models employ spaced, small-diaphragm omnidirectional capsules



set apart on a crossbar on either side of a custom integrated preamp section, fed from an external power supply to keep noise to an absolute minimum. As shown, the signal from each 249-ohm capsule is fed to separate left and right XLR outputs. Specs include a flat 20 to 20k Hz response. The tube version uses Russian mil-spec tubes and a high/low output gain switch, while the solid-state version features a variable gain knob.



New Series, Same Prices

Bryston SST² Amplifiers

Bryston, LTD (www.bryston.ca) has announced the introduction of the SST² series amplifiers, incorporating several upgrades to all eight models featuring Bryston SST hand-built amplifier topology. The new series offers the same prices as the existing lineup which now ranges from the 2B SST² (100 watts per channel/8 ohms, 180 per channel/4 ohms at \$2,650) to the 28B SST² (1,000 watts mono into 8-ohms at \$8,000). New features include a balanced input stage, output chokes promising extended high-frequency bandwidth, soft-start circuitry featuring



gradual ramping of power, an extreme-duty push style power switch and a new power supply transformer design.

In Your Ears

Sennheiser IE Headphone Series

The new IE 6, IE 7 and IE 8 ear-canal headphones from Sennheiser (www.sennheiserusa.com) promise reduction of ambient noise and feature dynamic transducers covering a wide frequency range with one system. The silver and black IE 6 (\$249.95) offers attenuation up to 20 dB, and a frequency response of 10 to 18k Hz, while the IE 7 (\$299.95) boasts 10 to 19k Hz response. The top-of-the-line IE 8 (\$449.95) features a low-profile dial on each earphone, enabling fine-tuning of the bass response, with 25 dB of attenuation and frequency response ranging from 10 to 20k Hz. All three models feature cables strengthened with Kevlar™, plus transport case, small cleaning tool and a cable clip. III

ADAM A5 Desktop Monitors

Compact Two-Way Powered Speakers With a Few Surprises

ADAM Audio is known for its studio and consumer speakers, all of which use its ART (Accelerating Ribbon Technology) folded ribbon tweeter. ADAM's most recent release is the A5 two-way active reflex monitor targeted for studio and multimedia applications. The frontported A5s feature a 5.5-inch carbon fiber/Rohacell woofer, the ART tweeter and two 25-watt amps, all packed into an 11-pound, 6.8x11.2x7.9-inch enclosure. The front has a power switch and rotary volume pot, and a light denoting whether the Link control is active (more on that later). At the rear are balanced XLR inputs, unbalanced RCA ins and controls for maximizing the monitor's response to various room properties. Three rotary knobs adjust high frequencies (± 4 dB), mids (± 6 dB at 6 kHz) and lows (± 6 dB at 50 Hz).

I first used the speakers in a small, nearly square office with a carpeted floor and an 8-foot ceiling. Far from acoustically inspiring, this environment is more and more *de rigueur* in home studios, editing stations and DAW-based music creation suites. I mounted the A5s on 10-degree upfiring Primacoustic RX5 Recoil Stabilizers, which help provide a rock-solid and centered stereo image but also aim the tweeter at the user's head in close-field, desktop listening situations.

A floor-to-ceiling bookshelf behind my listening position—packed with randomly sized boxes, books and other items—offered a fighting chance to downplay rear-wall kickback. I left the room-correction controls flat and never had to touch them for the entire test.

I listened to a variety of sources from an Apple MacBook's 1/8-inch unbalanced output

plugged directly into the A5s RCA inputs. Tracks included full resolution PCM mixes played from Pro Tools LE and a variety of CDs burned into iTunes using Apple Lossless encoding. The Stereo Link function worked very well, allowing me to change the volume of both monitors from either speaker's rotary control. This works by plugging both left and right inputs into one of the speakers and then linking the second A5 via an included RCA cable.

No matter the audio source, I was struck by the monitors' smooth top end, even on sources such as AC/DC's *Black Ice*, which came across as strident on other monitors. In every case, the center remained rock-solid with a lush stereo field that sometimes

seemed to expand beyond the boundaries of the cabinets. Another surprise was the A5s' impressive degree of bottom end. George Duke's *Dukey Treats* rocked the room with some serious LF reproduction and great mix detail. I did notice some distortion on certain tracks, which I attribute to the MacBook's sound card.

When iTunes was stopped, the output would buzz and I could hear zipper noise while I was using my mouse. To take the test up a notch, I employed Apogee's Duet FireWire interface as the audio output for my computer and everything improved tenfold. Distortion and zipper noise disappeared and a slightly smoother top end was evident when I used the

Duet to feed the A5s. Keep in mind that this was still an unbalanced hookup.

Next, I popped the A5s on top of a Solid State Logic SL 4000E in a proper listening space, patched the balanced monitor outs from the patchbay into the speakers' XLR inputs and sourced a number of mixes and tracks from Pro Tools. The A5s were stellar in this situation and provided a great secondary source for evaluating tracks when jumping from larger monitors.

Having this level of quality for less than \$800 a pair nearly made me feel guilty using the A5s. I've listened to them for hours on end without fatigue and am nothing short of astounded by their balance, smoothness, imaging and detail. III



The ADAM A5s feature RCA and XLR inputs and linkable volume controls on the front.

PRODUCT SUMMARY

COMPANY: ADAM AUDIO

WEB: www.adam-audio.com

PRODUCT: A5 Studio/Multimedia Monitor

PRICE: \$399.50/each (black); \$439.50/each (white)

PROS: Great sound. Cabinet well-tuned from lows to highs. Stereo Link allows dual volume control from one speaker. Exceptional value.

CONS: Stereo Link only works with unbalanced connections.

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AKG C 214 Condenser Microphone

Fixed Cardioid Version Offers Value and Versatility

The AKG name brings to mind a number of legacy mics—such as the C 12, C 414 and C 451—and there isn't a lightweight in the bunch. Of course, the company also manufactures a variety of well-respected headphones, as well as wireless and installed sound products. Most recently, AKG unveiled a new condenser mic designed for the recording and live sound markets. The new C 214 is versatile and affordable, offering the user options and accessories to alter the mic's performance. It ships with the H 85 shock-mount, W 214 foam windscreen and a sturdy carrying case. The mic has a fixed cardioid pattern, 20dB pad and a highpass filter that cuts the bass by 6 dB per octave, starting at 160 Hz. The pad lets the mic handle up to 156dB SPL—or 20 dB less when the pad isn't engaged.

The C 214 is designed, engineered and built in Vienna, Austria, and as promised, it lives up to AKG's quality standards. The mic, case and shock-mount are all top-notch. I especially liked the shock-mount, which has a simple design and seems nearly indestructible. The mic is made of an all-metal die-cast body and is coated in a scratch-resistant finish. The recessed switches are solid, yet you can easily move them with a thumb or fingernail. There's no "in-between" feeling on these; when you change the switch position, you know exactly what's on and what isn't. The 1-inch, edge-terminated capsule is mounted on an integrated suspension and housed in a double-mesh grille, promising high-RF immunity with little impact on acoustic performance.

In the Rhythm Section

I first heard the 214s used as a spaced pair on an acoustic guitar. The mics were run through

a Neve VR console's preamps directly to 2-inch analog tape. The guitar part was heavily strummed and produced a lot of low-frequency boom, which I could easily address by engaging each mic's high-cut filter. Immediately, the part sat down in the mix, and the drums, bass and keys needed no further EQ. The top was smooth and not jangly or cutting. I used a single 214 on a loud guitar cabinet with a Shure SM57, and it made a nice partner mic for this application.

I next tried the pair in an X/Y configuration as overheads on a drum kit. The cymbals rendered very well with a nice stereo image and exhibited no strident wash when they were hit hard. The attack of the toms also sounded great; however, there wasn't a lot of overall extreme low end present as verified by the frequency diagram, which is dead-flat below 500 Hz with a roll-off starting at 75 Hz. I tried the mics on toms (top and bottom), engaged the pad and they took the level without a hiccup. The closer I got to the bottom of the low tom, the more I could play with the proximity to get the low end that I needed. Later in the session, they worked well on hand percussion, taking the bite out of a shaker, even when the part was played hard. The 214 also sounded great on bells and other transient-producing toys.

Reliable Performance

The 214 came up short on a female vocal, sounding a bit thin. In this situation, I would prefer a mic with more of a bump in the low end. However, this mic generally inspires confidence. It's sturdy and easy to place/position in the mount, and it sounded great in a majority of situations. Of course, the C 214 isn't all things in all applications, but it excels for acoustic guitar, guitar amp,

hand percussion and around a drum kit. Some audio forums hail the 214 as the "affordable 414." I balk at such comparisons because I find them too simplistic. The 414 comes in a number of differently priced incarnations that excel in a variety of applications, so I think it's unfair to make such claims. However, if you said that the C 214 lived up to the AKG standard for making a quality product that is priced fairly and is comfortable wearing a number of different transducer "hats," I'd wholeheartedly agree. ■



The C 214 features a fixed cardioid pattern, highpass filter and 20dB pad.

PRODUCT SUMMARY

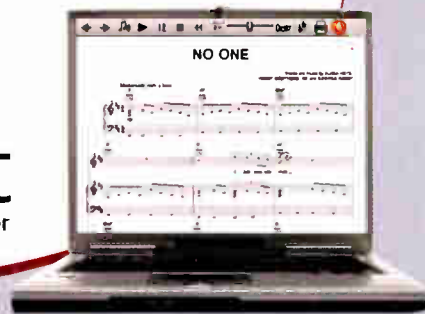
COMPANY: AKG
WEB: www.ake.com
PRODUCT: C 214
PRICE: \$649

PROS: Good all-around mic for a variety of applications. Rock-solid construction, excellent shock-mount and case. Good value.

CONS: Can come up short on the low-frequency spectrum in certain applications.

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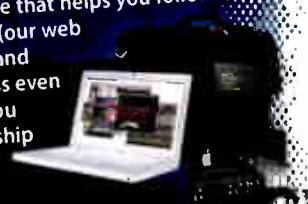
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Benchmark DAC1 PRE D/A Converter

Monitor Various Digital Devices With This Reference-Quality Box

Whether you're mixing your latest 24-bit/192kHz opus, evaluating the project's reference CD or tweaking EQ settings for the release in MP3 format, having an accurate and flexible monitoring setup is indispensable. The Benchmark DAC1 PRE fills this need by switching effortlessly among six stereo inputs in various formats and providing a volume control for its reference-quality signal output.

That's a Switch

A detented rotary control on the table-top unit's face selects any of three coaxial digital inputs, optical (Toslink) or USB digital input, or analog input. (Connections for all are on the rear panel.) A status LED for each stereo input either lights steadily to indicate valid input signal or blinks to alert you otherwise. Another detented rotary control adjusts level at the unit's headphone and line-level outputs. (The latter are also on the rear panel.) Two 1/4-inch headphone jacks sit side-by-side on the front panel. Plugging into the left one automatically mutes the unit's line-level outputs (this feature can be defeated), whereas signal from the right headphone jack can be monitored simultaneously with that for other outputs.

On the DAC1 PRE's rear panel, three coaxial digital inputs on RCA jacks and one optical (Toslink) connector can accept signals in either S/PDIF or AES/EBU format and at up to 24-bit/192kHz resolution. The "Type-B" USB connector accepts input (up to 24-bit/96kHz resolution) directly from a computer and is compatible with both Mac OS X and Windows



Vista/XP/2000; no drivers need be installed. Both USB 1.1 and 2 are supported. Benchmark's UltraLock™ clock system purportedly eliminates jitter on all digital inputs, including USB. A pair of unbalanced RCA connectors accepts analog input from devices such as an iPod, analog mixer, FM tuner or tape deck.

Signals from the selected input source exit the DAC1 PRE via left- and right-channel balanced XLR and unbalanced RCA jacks (and the headphone jacks). The XLR and RCA output jacks are meant to connect directly with powered monitors or a power amp for passive monitors. The strength of the output signals exiting these jacks is determined by a three-way switch on the rear panel and internal trimmers and pads. (The pads affect XLR outputs only.) Depending on its setting, the switch either places the previously mentioned volume control in-circuit for XLR and RCA outputs (it's always active for the headphone outputs), sets fixed output levels determined by trimmer settings or mutes all but the headphone outputs. Pressing the input-selector rotary control also mutes the DAC1 PRE. An optional rackmount kit is available.

Might as Well Jump

Popping the unit's lid and repositioning internal jumpers to bypass the out-

put pads, I used the DAC1 PRE successively as a D/A on my mix bus and on individual tracks (using one of the DAC1 PRE's coaxial inputs). The results were outstanding: The sound was always ultra-smooth and warm, exhibiting no glare or edginess.

Routing my digital mixer's S/PDIF output to one of the DAC1 PRE's co-ax inputs, the unit worked great as a level controller for my control room monitoring chain. Don't bypass the pads (set to -20 dB at the factory) or volume control when using the unit this way—fixed, unpadding output levels are extremely loud and could blow up your speakers!

Listening to MP3s on iTunes was plug-and-play easy. As soon as I connected a USB cable between my Mac QWERTY keyboard and the DAC1 PRE, "Benchmark 1.0" appeared as an output choice in my Mac's Sound Control panel. Connecting a fiber-optic cable between my CD player's optical output and the DAC1 PRE's optical input, CDs sounded great on playback. The DAC1 PRE's headphone outputs provided very loud levels and a nicely balanced sound.

For an all-in-one solution for quickly monitoring multiple high-res and low-res input sources in turn, the DAC1 PRE is hard to beat. III

Mix contributing editor Michael Cooper is the owner of Michael Cooper Recording in Sisters, Ore. Visit him at www.myspace.com/michaelcooperrecording.

PRODUCT SUMMARY

COMPANY: BENCHMARK
WEB: www.benchmarkmedia.com
PRODUCT: DAC1 PRE
PRICE: \$1,595 (MSRP)

PROS: Excellent sound quality. Switches among six stereo inputs. Accepts numerous digital formats. XLR outputs can be padded 0, -10, -20 or -30 dB (using internal jumpers). User-friendly, fast operation.

CONS: Output pads and trimmers can only be accessed by removing the lid. No XLR connectors for AES/EBU input.



ProAudio Review Magazine

~ From review by Strother Bullins

"With Broadway, my audio workspace sounds like I never imagined it could. As a result, my work has never been better or more satisfying. Without a doubt, the Primacoustic Broadway system is the most significant pro audio investment I have ever made."



TapeOp Magazine

~ From review by Andy Hong

"I had the room treated in 4 hours, installation couldn't have been easier. We heard an obvious difference: mud gone, imaging cleaned up. Now the highs are crisp, the midrange is well defined, and the low end is right where it should be. When it came to choosing an acoustic treatment, it was an easy decision: Primacoustic was the clear winner."



Electronic Musician Magazine

~ From review by Jeff Burger

"The London 14 is a welcome addition to my studio. The effects in controlling unwanted acoustic artefacts have been significant... Primacoustic's kit approach strikes a great balance in price and performance."



Audio Media Magazine

~ From review by Paul Mack

"The most telling track was Joni Mitchell's 'Big Yellow Taxi'. It's a great acoustic work that gave us the real story. In short, we could hear the room that the track was recorded in, plus the room we were listening in. I'm not sure there is anything that advocates the acoustic treatment as effectively as this."



Recording Magazine

~ From review by Bob Rossr

"Imaging has improved dramatically. Mixes now display a depth that previously never translated in this room. It's as if the front wall behind the monitors has disappeared. I'd give Primacoustic a qualified thumbs up."



Sound On Sound Magazine

~ From review by Paul White

"I found the installation simple and was pleased with the results — there was a noticeable improvement in clarity, imaging and evenness of bass. The Primacoustic approach certainly works and I look forward to doing more mixes using it. Primacoustic have come up with a pragmatic and versatile solution to small studio acoustics that is affordable, effective and visually attractive."

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World Radio History

www.primacoustic.com

Peavey ReValver Mk III

Schematic-Level Modeler Creates Custom Amp Designs

Soon after acquiring plug-in company Alien Connections in 2007, Peavey set out to retool its ReValver Mk II amp-modeling software. In a move that nicely complements the vision of the online Peavey Custom Shop for hardware, ReValver Mk III provides a kind of “tweakability” never before seen in any amp simulation software.

Available for Mac/PC in VST, Audio Units, and RTAS, as well as in stand-alone version for live use, ReValver Mk III models 15 classic guitar amps, including several Peavey units such as the 6505, JSX, Classic, ValveKing, and Triple XXX. Both tube and solid-state combo designs are offered, as well as takes on Vox, Fender and Marshall classics.

ReValver’s amplifier modules comprises a preamp and a power amp by default, but also come in separate preamp- and power amp-only formats so users can mix and match. It also has 19 “racked” stomp boxes (chorus, phaser, flanger, distortion, auto-wah, tremolo, compression, limiter, delay, octaver, etc.) and 11 effects, including an FFT-based convolution reverb with sample spring reverb and an awesome 8-band parametric filter with adjustable frequency, gain and Q. ReValver allows you to stack an unlimited number of modules into the virtual rack and freely move them around, bearing in mind that the signal flow is always top-down. You can set each module individually to process in either mono or stereo, and insert the signal splitter and merger modules to create processing chains

that are quite elaborate. You can even arrange two discrete signal chains (with phase-invert control) and later blend and pan them for dual-tone stereo presets.

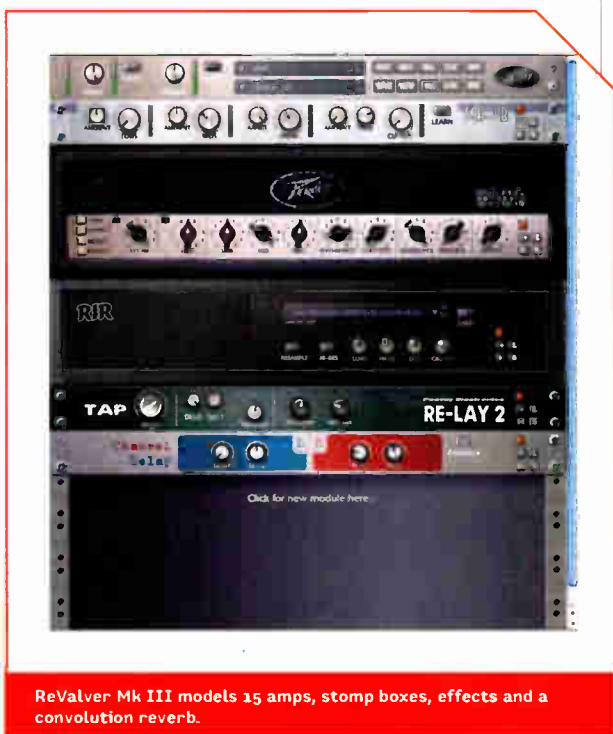
To “hear” all this, ReValver provides more than 150 speaker simulations that have been captured using real-time convolution and something that Peavey calls “membrane modeling.” Finally, there are some handy utilities, including a standard needle-and-strobe tuner, a Simul-Tuner with six independent tuning channels that strobe relative to reference tones, an adjustable frequency analyzer and more. The whole shebang is capable of running in standard Real Time or 11Q Mix-down mode, with the latter processing at 64-bit with oversampling—although I can’t see justifying the resultant 4x hit to the CPU for a 5- to 6kHz-wide guitar tone.

Get Your Geek On

I enjoyed the hours it took to pore through the hundreds of fantastic sounding presets, mainly slowed by my inspired riffing along the way.

And this software would be worth every penny if we stopped right there. But one of ReValver’s most powerful features is its Module Tweak mode. Right-clicking on an amp takes you to a signal-flow GUI where you can change, add or remove tubes (both power and preamp), rectifiers, output transformers, tone stacks and more. In essence, you become your own virtual boutique amp builder. Yet, it gets even better!

Clicking on any one of the



ReValver Mk III models 15 amps, stomp boxes, effects and a convolution reverb.

photorealistic component icons will bring up its “technical parameters” screen, along with a laundry list of editable schematic details. Take the Input Stage configuration, for example. Along with choice of tube from among nine possible triode types (there are another eight pentode types to choose from at the output stage), you can either apply a preset tonal character to the tube or tweak it down to very minute engineering specifications. These could include the voltage as delivered by the power supply, adjusting plate load, attenuation due to resistor ladders, cathode capacitors, bias voltage and more.

At the output stage, amplification class is variable between 100-percent Class-A and 100-percent Class-B, essentially allowing for customized A/B weighting. Even the power supply can be modified. Selecting from “ideal,” tube-sagging/-stiff, diode-sagging/-stiff, or transparent types, you’re given full control over amp drain, charge speed, size (stability) of the PS filter tap capacitor, voltage drop influence and much more—pretty mind-blowing stuff.

PRODUCT SUMMARY

COMPANY: PEAVEY ELECTRONICS CORPORATION

WEB: www.peavey.com

PRODUCT: ReValver Mk III

PRICE: \$299.99

SYSTEM REQUIREMENTS: Mac—1 GHz CPU; 512 MB RAM; VST/Audio Units host or stand-alone. Windows—1 GHz CPU; 512 MB RAM; VST host or stand-alone with ASIO/WDM audio card.

PROS: Awesome “tube” sound. Extensive preamp and power amp modeling. Deep circuit-level tweaking. Convolution speaker and microphone simulation. Supports IR import and export. Virtually unlimited tonal possibilities.

CONS: 64-bit Mixdown mode inflicts bigger “hit” on CPU than necessary for guitar tones. Getting the most from Tweak mode requires basic circuit knowledge or a lot of patience and a good ear during trial-and-error parameter changes.

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With this level of intervention, not only is it possible to get just the right tone or response from a classic circuit; it's also surprisingly easy to cook up your own custom designs. You can even tweak many of the effects circuits—a nice bonus.

As an alternative to the real-time IR speaker module, the Speaker Construction Set is extremely cool, allowing you to select from dozens of predefined speaker models and assemble them into a virtual cabinet with any physical size of your liking (up to 40x40x20 inches). There's a choice of 20 microphone scenarios based on five mic models (SM57, MD421/MD441, U87, KM 84 and C 414), displaying various polarity and LF cut settings. You can adjust their distance from the speaker, axis positioning, the angle between two mics in stereo configurations, as well as contour the lows and highs, speaker distortion and crunch. I was extremely impressed with the results; each change did exactly what I expected it to do, and the differences were anything but trivial.

But what's *really* cool is that ReValver lets users capture the IR of any internal module and save it as a 44.1kHz WAV file for export. You can even capture the IR of any third-party plug-in and use the response within any of ReValver's IR-compatible modules. This let me take snapshots of my favorite "oil can" delay or processor-hogging speaker/room modeling plug-ins and incorporate their "sound" into ReValver with lower CPU overhead. The sound design potential is incredible.

Gettin' Hot in Here

Rather than just simulating how the separate boxes in a guitar rig might sound at output (as the competition does), ReValver Mk III's component-up approach makes it sonically superior. Electrical variances, amp tonality, gain structures and coloration are all earthy sounding and ultimately realistic. The emotive feedback I got from the software in response to changes in my playing and guitar controls was incredibly natural, flowing directly into my hands. This software connects with your "guitar soul."

Never before—but particularly not outside the world of vintage hardware—have I experienced this kind of excitement in getting an amp sound. The warmth and authenticity are spot-on. With ReValver Mk III, finally, there should be no question that you're playing through tubes. **III**

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

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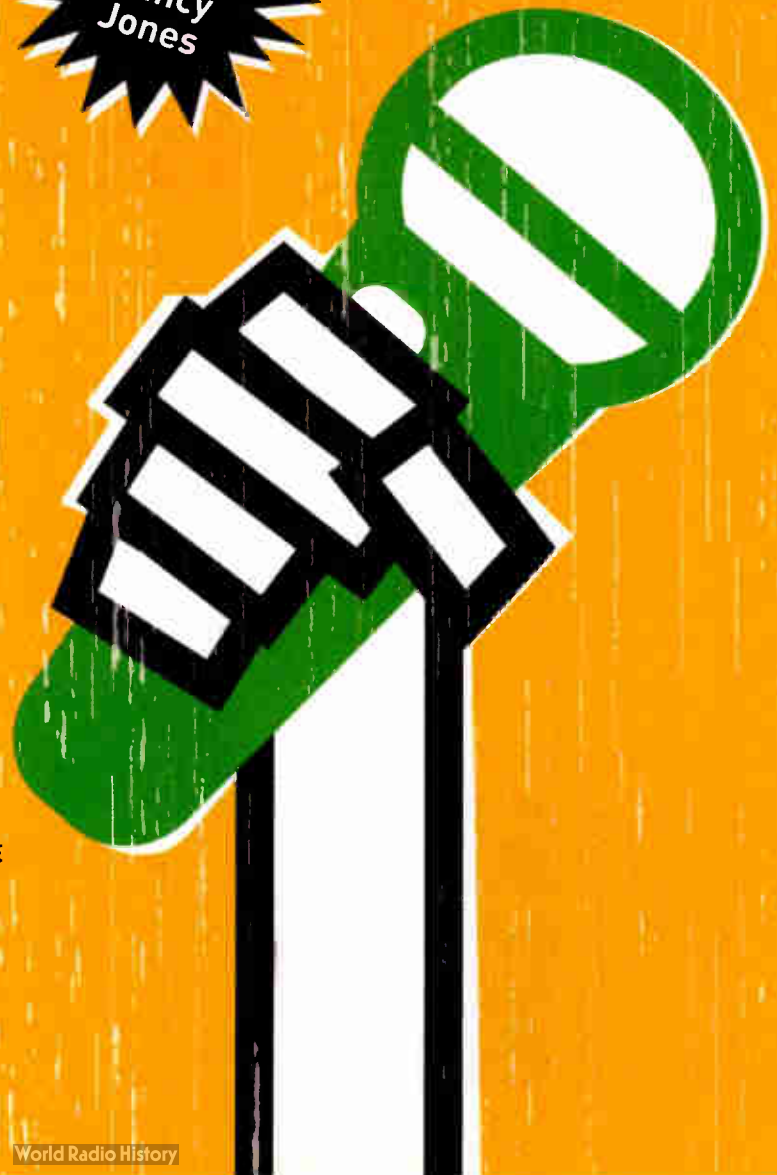
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World Radio History

Novation Nocturn Intelligent Plug-In Controller

Easy-to-Learn Software/Hardware Interface Improves DAW Workflow

Nocturn from Novation is a very cool and inexpensive plug-in controller for any DAW. It features eight buttons and eight rotary encoders on the hardware surface, plus a horizontal fader and Speed Dial, which, with its dedicated rotary, can address any function above which the mouse is held. As for the mapped parameters, Nocturn can handle any amount; the surface can be paged +/- for situations where there are more parameters than buttons/rotaries.

The heart of the system is the Automap software, which assigns controllers to the software automatically. If this is not to your liking, the software/hardware can be easily remapped using the Learn function. You can also rename functions as you'd like. The Automap overlay comes in three levels of opacity, so it melds perfectly with your onscreen setup. There is an excellent Browser mode that lets you use Automap as command central for your plug-ins. Rather than clicking on the plug-ins themselves to gain control (which can sometimes be offscreen), the Browser represents all your mapped plugs that can be clicked on (and into) the controller.

Hardware and software setup was easy. Nocturn plugged directly into my computer's USB slot, and the software manages plug-ins with a simple drag-and-drop interface. In my Pro Tools session, I was able to jump right into Nocturn by bringing up a plug-in, which was immediately mapped to the surface.

The Automap software was both cool and frustrating. The interface recognizes the mapped plug-in right away, but it sometimes spreads



Nocturn provides eight rotaries, eight buttons and a fader that can be mapped to control most plug-in parameters.

common parameters apart, making grab-and-go usage unintuitive. For instance, when I opened up a 4-band EQ, the highpass enable was on button one, while the lowpass enable, right next door on the plug-in, was on button seven. The same was true for the rotary controls. However, the fix was easy via the Learn function, which let me quickly reassign the buttons to the plug-in by double-tapping Learn to lock it, then quickly running through the plug-in's parameters and its associated Nocturn buttons as I wanted it in a simple mouse-click/button-tap fashion. All this is saved into Automap for future use.

Some plug-ins reacted oddly to AutoMap and then also to the Nocturn. For instance, a multi-mono Trim plug-in used on a stereo track came up with both buttons and faders assigned to the control knobs—no buttons were mapped. When I tried the same Learn process that worked so well on the EQ, the results were sketchy. For instance, clicking on the Range button would freak out the fader, causing it to jump wildly from Inf to +6. I got around this by clicking on a button in the GUI, then going to the Parameter pull-down and

assigning it that way. I have to note that whenever I had to change something, Automap and Nocturn quickly came to the rescue, often with a function addressed redundantly; for instance, Learn has three buttons.

It may sound like I was displeased with the Nocturn, and it's true there were some instances where I was disappointed. However, in all but a few situations the software and hardware were excellent and intuitive—the Browser, Learn and viewing options are well thought out and quickly learned. On the software side, there is room for improvement. A couple of simple upgrades would be to include a "none" choice on the GUI's parameter pull-down—you can accomplish this by clicking on the parameter and hitting your Delete key, but it would also be convenient to have it on the pull-down. Nocturn also can't address non-automatable parameters—for instance, the ability to choose channels and grouping on multi-mono plug-ins, nice functions to have under your fingers. For the majority of applications however, Nocturn is a winner, intuitive, easy to set up and navigate. So if you're looking to step up your system to the next level of control for a month's worth of lattes, Nocturn is just the ticket. III

PRODUCT SUMMARY

COMPANY: NOVIATION

WEB: www.novationmusic.com

PRODUCT: Nocturn

PRICE: \$199

SYSTEM REQUIREMENTS: Mac OS X 10.4.0 and greater. (Tiger or Leopard) Windows XP with Service Pack 2 or greater. USB 1.1 and 2.

PROS: Generous amount of rotary/button controls. Good user interface (software and hardware). Great price.

CONS: Non-automatable plug-in parameters not addressed. Automapping sometimes not intuitive and may need adjustment.

STUNNING!

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Secrets of API's 500 Series The Little Module Format That Could

No one likes empty spaces and blank faces on an API Lunch Box or 10-space rack. Thanks to a marriage of old and new technology, this month's column is about clever geeks who have gone beyond the conventional to give the empty real estate in your 500 Series rack an extreme makeover.

In the late '60s, when Saul Walker founded Automated Processes Inc., recording consoles were client-specific and built around standard in-house modules (such as amplifiers, EQ, etc.) and custom modules (i.e., the monitor section). The same was true for Neve, Putnam, Flickinger and a handful of other manufacturers. Especially in those pre-IC, pre-transformerless days, each console had a signature sound, and that was *before* the built-in EQ and compression were switched in. Back then, API modules found their way into many non-API consoles, such as DeMedio and Sony, but I don't think Walker ever envisioned that so many third-party entrepreneurs would embrace his 15-pin edge-connector configuration and make their

own products for it. (Log on to mixonline.com to see a few of those companies.)

To a D.I.Y. enthusiast, the beauty of the 500 Series format is that the mechanics and power supply are already done—a huge savings because items like these, as well as metalwork and I/O, can add up to a big expense. And while building a power supply is hardly a major technical issue, making it legal—adding a seal of approval from Underwriter's Labs, CSA (Canada) and CE (Europe)—is complex and expensive. Using the existing power supply allows more time for product

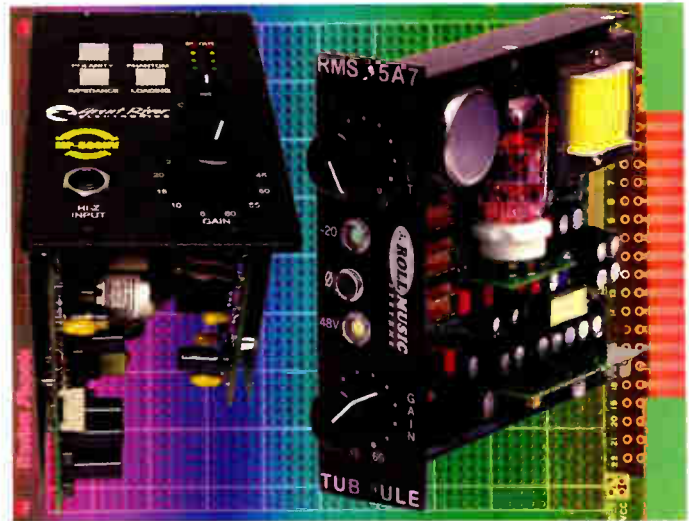
500 Series Pinout Data	
Pin	Description
1.	CHASSIS
2.	Plus 4 Output "+"
3.	option
4.	Plus 4 Output "-"
5.	Audio Ground
6.	525 Stereo Link
7.	option
8.	Plus 4 "-" Input
9.	option
10.	Plus 4 "+" Input
11.	Gain Adj 550b, 560b
12.	+16 volts DC
13.	Power Ground
14.	-16 volts DC
15.	Phantom +48 VDC

The "basic" API 500 Series pinout. "Option" implies some vintage and module-specific variations.

development. This is one reason many products use "wall-wart"-style power supplies.

Feels Like Latin

The beauty of a dead language—or an outdated operating system and software—is the lack of change, and after a tweak to accommodate phantom power, the 500 Series edge connector pinout was etched in stone. As shown in the table above, plus and minus 16 volts are respectively supplied to pins 12 and 14, with ground on pin 13 and 48V on pin 15. An API 525 module has three 2520 op amps and consumes 80 mA—an important consideration/target because 10 modules in a rack want to be within 75 percent of the power supply's rating. (According to Justin Morse of Roll



Shown here are two examples of 500 Series modules. On the left, the Great River 500-NV converts the incoming bipolar 16-volts—normally used by API modules—into 24 volts used by Neve-style amplifiers. On the right, the Roll Music Systems RMS 5A7 converts the incoming voltage into tube-capable power—250 volts for the plate and 12 volts for the filament.

Music Systems, the limit is 130 mA per slot.)

Inside the typical 500 Series power supply are two regulators: an LM-317 (positive) and an LM-337 (negative). When properly heat-sinked and ventilated, these devices are good for up to 1.5 amps, 75 percent of which is 1.125 amps (another safety margin target). For these devices to run cool, it should be noted that the input/output voltage differential should be conservative—within 12 volts (according to the maximum spec) and preferably under 10 volts. If the regulator's output is 16 volts, then the input to the regulator shouldn't be more than 26 volts—and even that is pushing it a bit. Higher local line voltages (what comes out of the wall) can produce higher regulator input voltages, thus exacerbating thermal issues, especially when the rack is fully populated.

New Classes in the Hood

You might think a co-op power review board might rule out a 24-volt, single-ended Class-A amplifier from moving into a bipolar 16-volt hood. Similarly, a classic RCA-style tube preamp couldn't possibly be squeezed into a 500 Series module, let alone run on the available power, right? But that didn't stop two local audio geeks from trying (and succeeding).

Dan Kennedy of Great River Electronics and Justin Morse of Roll Music Systems independently chose similar paths when designing their 500 Series modules. Their goal was to deliver the same performance and specs without compromise. Kennedy solved his power challenge by using a TDK-Lambda DC-to-DC power converter module that accepts anything from 18 to 36V and outputs bipolar 12 volts (24 total), which is exactly what classic Neve amplifiers want.

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Putting a vacuum tube in Roll Music Systems' RMS5A presented two power challenges. The vacuum tube requires a high plate voltage (250V) along with enough current for the 12V filament (150mA). Morse chose an off-the-shelf DC-to-DC converter for the filament and a voltage multiplier for the plate. Both are vertically mounted on a separate PCB to conserve space.

With power management out of the way, the next challenge was physical: squeezing a Great River ME-1NV (half of an MP-2NV) into what became the MP-500NV. To comfortably fit two large British transformers required a doublewide 500 Series module. By contrast, the RMS5A7 output transformer matches tube to line-level impedance at a much higher ratio than its solid-state counterpart, which surely contributed to a smaller transformer. To further conserve real estate, the tube preamp does not include a DI or metering.

Morse also did not go for the typical 12A7 dual-triode options, but decided on a 12DW7/ECC832/7247 available as NOS or new from JJ Electronic. This is a dual triode with the same pinout as a 12A7, but with a twist: One triode section is equivalent to a 12AX7 (high gain) while the other is like a 12AU7, with lower out-

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The beauty of this type of converter is that it behaves like an active power transformer, in that voltage conversion has an inverse effect on current, where the power (watts = amps *times* volts, or $P = IE$) is the same on both the primary and the secondary. If a transformer secondary delivers 24 volts to a 1-amp load after rectification, the power is 24 watts. The power reflected on the primary side is also 1W. We know the voltage is 120, so by using $P = IE$, $24 = "I" \times 120$ so that I (the current in amps) = 200 milliwatts (mW).

A conventional linear power supply relies on the 60Hz power line frequency, which is not the most efficient way to transfer power from primary to secondary. A DC-to-DC converter works its magic at superhigh frequencies via internal oscillator, allowing far greater efficiency from a much smaller transformer. Technically, it's win-win.

—Eddie Ciletti

put impedance and 10x the current capability, making it better suited for driving a load.

D.I.Y. Starter Kit

In addition to seeing both modules' internals, the background of the opening graphic also shows a pre-fab project board that started out with 44 pins, but was hacked down to 15. Thus equipped, you're on the way to creating a little

500 Series module of your own. But before embarking on your project, it's a good idea to do what API did: Use a pair of diodes on the module's power input to block accidental reverse polarity. Include three LEDs to confirm the presence of power, and you're ready to roll your own 500 Series module. III

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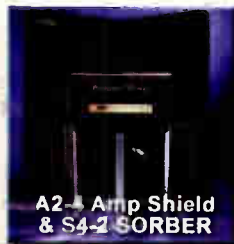
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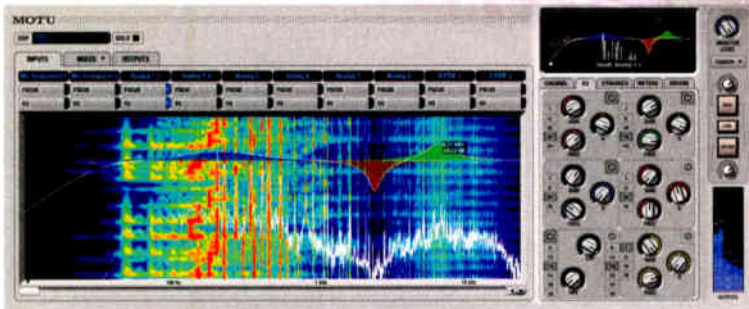
Run DP6, the Traveler-mk3 and a host of exciting new companion products on the new MacBook Pro for the most powerful and portable studio ever.

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The new FFT and spectrogram display in CueMix FX



MOTU Traveler-mk3 Portable I/O with effects & mixing

The Traveler-mk3 isn't just a 28 x 30 FireWire interface. It's a full-blown digital mixer with effects, including modeled analog EQ and compression on every channel, plus reverb — all accessed via the elegant CueMix FX on-screen mixer. Use bus power from your laptop, or use a battery pack for extended sessions in even the most remote locations. The ultimate professional portable interface/digital mixer.

Euphonix Artist Series

High-end console for your MOTU studio

MC Control and MC Mix bring Euphonix' high-end console technology to your MOTU personal studio in a compact design that fits perfectly in front of your MacBook Pro. MOTU now natively supports Euphonix' EuCon protocol for seamless, tactile control over almost all major DAW functions.

MC Mix

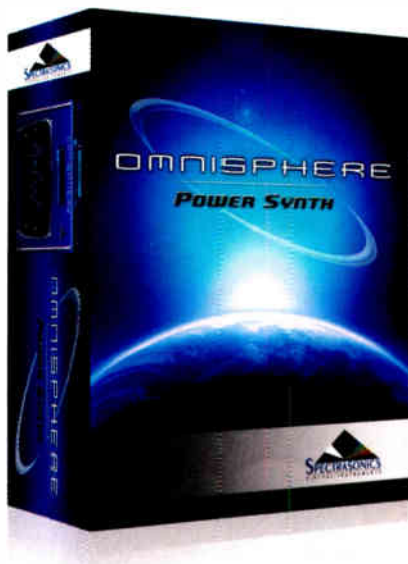


MC Control



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Spectrasonics Omnisphere Spectrasonics' new flagship power synth

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Mu Technologies Mu Voice Vocal tuning and intelligent harmonizer

Imagine a plug-in that allows you to tune your vocal recordings, apply special effects and add natural-sounding harmonies when mixing your track. The proprietary spectral analysis and synthesis techniques of Mu Technologies set new standards in vocal processing providing a unique tool for your Digital Performer vocal tracks. Great for musicians and engineers alike, equally adept for both live and stage use.



Shure KSM 44 Multi-pattern condenser mic

The flagship of the KSM line — and the new must-have mic for any MOTU studio. The KSM 44 has extended frequency response specially tailored for critical studio vocal tracking. Includes flexible polar patterns: cardioid, omni and bidirectional.



Dangerous Music D-Box Killer analog summing & monitor management

Dangerous Music's renowned analog summing adds incredible punch, depth and warmth to "in the box" mixes. Now add monitor control with two speaker outs, two digital ins with D/A, talkback, two phone outs and aux analog input and you've got a must-have final analog mixing stage for your MOTU mixes.

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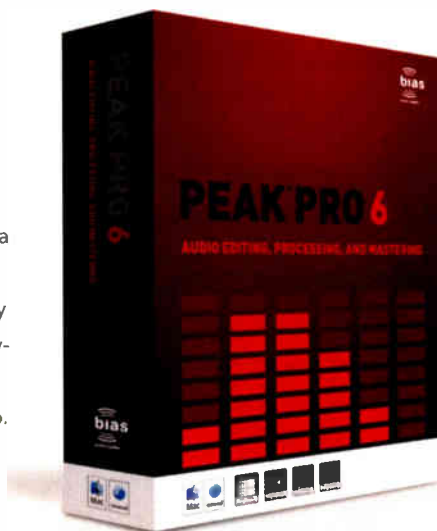
Ocean Way Drums from Sonic Reality The premiere virtual drum instrument

Put the power of the world's most awarded studio complex in your MOTU desktop studio. Ocean Way Drums delivers 19 drum kits immaculately recorded in legendary Ocean Way Studio B where artists like Radiohead, Green Day and Eric Clapton create hit records. The new affordable Silver Edition is now only \$499 MSRP.

BIAS Peak Pro 6

Evolution of an award-winning standard

Whether you're a musician, sound designer, audio editor, multimedia producer or mastering engineer, Peak Pro 6 offers more creative potential than ever before. Used side-by-side or launched directly from within DP6, Peak Pro 6 streamlines your workflow with industry-renowned sonic quality and precision. For additional mastering, restoration and DDP 2.0 delivery power, step up to Peak Pro XT 6.



Antelope Isochrone OCX

Premier reference master clock based on aerospace technology

A master clock is the heart of any MOTU digital studio, essential to maintaining stability and preserving sonic integrity. The Isochrone OCX is an ultra stable, great sounding master clock highly regarded by many top professionals. Mixes come alive with much more depth and detail when the OCX is plugged into gear that has a digital input. Hear it and believe it!



PreSonus Studio Channel

Channel strip with class A vacuum tube preamp

This fully featured channel strip delivers a class A tube mic/instrument preamplifier, a variable VCA compressor, and a 3-band parametric EQ complete with VU metering — all at a great price. Studio Channel is the perfect way to add that signature fat tube tone to any track.



Enhance your MOTU desktop studio experience

Run DP6, the Traveler-mk3 and a host of exciting new companion products on the latest Mac Pro tower for the most powerful desktop studio ever.



Mackie Control Universal Pro

The most complete control surface for Digital Performer

Nine motorized, touch-sensitive faders effortlessly control bankable channels while eight assignable V-Pots and over 50 master buttons provide unparalleled DAW control. A massive transport section with weighted jog wheel and robust build quality offers a true console feel. The 8-channel Expander Pro and C4 Pro virtual instrument controller allow seamless expansion.

Mackie HR824mk2 Active Studio Monitors

Premium performance to perfect your mix

A mainstay of professional studios worldwide, the HR824mk2 high-resolution monitors employ the new Zero Edge Baffle, which minimizes diffraction for a crystal-clear image and an evenly dispersed ultra-wide sweet spot. Acoustic Space, LF roll-off and HF controls allow custom configurations, which are sure to suit your MOTU studio space...and your taste.



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World Radio History

Hank Neuberger

Grammy-winning pro audio nomad is a force in broadcast sound, summer festivals, studio management, cast albums, live Webcasts—proving a young dog can always learn new tricks.

It's Grammy time once again. What can we expect on February 8th this year?

Let me first just say that it has been my privilege to supervise the broadcast audio for the Grammys broadcast for almost 20 years now. We were very fortunate to win the Emmy for sound for a special last year, and we have a very dedicated team that is responsible for that kind of achievement, the most important being the guys with their hands on the faders, the music mixers—Eric Schilling and John Harris—and our production mixer Tom Holmes. Our mission has always been the same: to make sure that when those artists come on that show, their sound is spectacular, nothing less than a perfect balance of the song they perform on the show. The Recording Academy is single-mindedly dedicated to the excellence of the music that we present. One thing we do that no other show does is that we created a parallel premix world for artists and their producers to prebalance their rehearsal so that we have a starting point when they hit the stage. We're able to spend more hours per artist in prebalancing, and we think that pays off.

I understand you are doing the pre-tecast this year, as well.

This is the second year we're producing a live Webcast of the pre-tecast program, where about 100 awards are handed out in advance of the telecast itself. That will be up at grammy.com, same day, February 8.

And your other lives?

I'm still in the studio business. I still carry some

arcane titles, like executive VP of Chicago Recording Company, where I started back in the '70s. And also with Glenwood Place Studios, where we were fortunate this year to have fabulous clients like Kanye West, Britney Spears, Alicia Keys and Courtney Love. But as everybody knows, the studio business is a constant uphill battle. We love it, we take great pride in the work we are able to do in those environments. But here's the punchline: The rates for music recording in the mid-'70s were basically \$100 an hour. Studios today, even at the high end, go for about \$100 an hour—30 years later. Every cost has gone up, but the rates are the same. This is a very difficult area to rely on exclusively.

Finding other segments—whether theatrical films or TV or game audio or other soundtracks mixed to picture—are some of the obvious ways studios can diversify. I just produced a cast album at CRC with Chuck Mead for a brilliant musical called *Million Dollar Quartet*, which is based on the night in 1956 when Elvis Presley, Jerry Lee Lewis, Johnny Cash and Carl Perkins were at Sun Studios with Sam Phillips. It rocks.

You seem to have carved out a nice niche in summer music festivals.

We were fortunate to hook up with the AT&T Blue Room Website when they did Lollapalooza 2005 with promoter C3 Presents. Since then, I've produced video and audio for live Webcasts at about 20 multiday festivals over the past four summers. Last year, we had great success at the Rothbury Festival, a very special event in northern Michigan, and the Mile High Festival in Denver. In addition to the live Webcasts, we were able to produce HDTV specials that have run on MTV's high-def network Palladia and the Fuse Network. For New Year's, we put Rothbury and Mile High together with AEG's production of Operation MySpace, shot at an army base in Kuwait featuring Disturbed and Filter and other artists. Those three together ran on New Year's Eve all around the world on the American For-



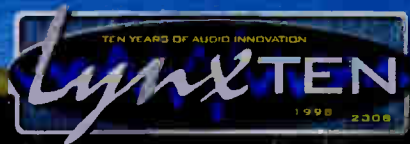
Hank Neuberger, left, with Guy Charbonneau at last year's Coachella Music Festival

es Network for all the troops overseas. ***So you extend the life and reach of the festival, which has always been a problem in coverage.***

That's what I think we're all looking to do in the New World Order. If we can give these performances "legs" and let them live in addition to the experience of being there, then we can help the artists be showcased throughout the year. We want fans to keep coming out and seeing their favorite artists each year. A festival is a value buy. If you believe that music is important and you think it is a good thing to have in our universe, then you want to help your artists find audience and help their audience find them.

Okay, I have to ask: What it's like to be a Chicago boy these days?

The great thing about Chicago right now, besides being the home of the President-elect, is that Chicago is the U.S. nominee and one of four candidate cities for the 2016 Olympics. We are very hopeful that the U.S./Chicago next October will be named the host for 2016. Talk about production, talk about matching an incredible event to literally the most beautiful city in America. We have our fingers crossed that this comes to pass. It would be great for production, great for the U.S. and great for Chicago, and as a Chicago boy, it's something I'm hoping for. ■



Ten Good Reasons Why Lynx Aurora Converters are the Tools to add to your Pro Recording System.



Well, maybe 11.

As an owner of a professional recording system, you have made a significant investment to provide world-class audio production for you and your clients. The single most crucial factor is the quality of the converters you choose. In developing the Aurora 8 and Aurora 16 converters, we had your needs in mind. We would like to point out 10, 11, maybe more reasons why Lynx is a great choice for you.

Of course we can't give you all of these reasons in this ad. But, here is just one...

Reason #1 Aurora 16 offers 32 simultaneous channels - sixteen channels of analog I/O and sixteen channels of digital I/O at sample rates up to 192 kHz.

Okay, maybe one more...

Reason #6 The sound / audio quality - Rich, open, transparent. Let your ears give it a try.

So whether you are just starting out, adding channels or upgrading the system, you'll have good reason to try out Lynx Aurora converters.



To see the entire list, please go to <http://www.lynxstudio.com/10reasons>.

TRAVELER_{mk3}

portable bus-powered audio interface
with on-board effects and mixing



Install the mk3 in a standard 19-inch rack or remove the brackets, slide it in your backpack and hit the road.



Use bus power or a field battery for extended remote recording sessions and stand-alone operation as a mixer.

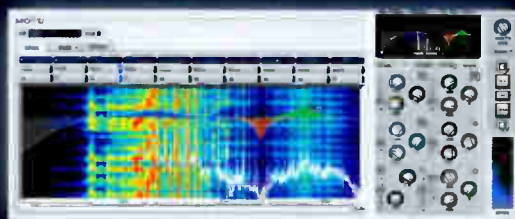
- **Flexible operation** — equally well-suited for studio, stage and remote locations, with or without a computer.
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- **SMPTE and MIDI time code sync** — no separate synchronizer needed.
- **Stand-alone operation** — a complete mixer with effects. Adjust any setting quickly with intuitive LCD menus.
- **Drivers for Mac and Windows** — Works great with your favorite software.



CueMix FX software gives you complete access to the mk3's powerful mixing and effects.



Comprehensive metering with accurate ballistics.



Compression modeled after the legendary LA-2A leveling amplifier.

FFT and "waterfall" spectrogram provide precise, real-time visual feedback as you apply EQ filters.

7-band parametric EQ modeled after British analog console EQs.