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Red Bull Studios
Santa Monica, Calif.

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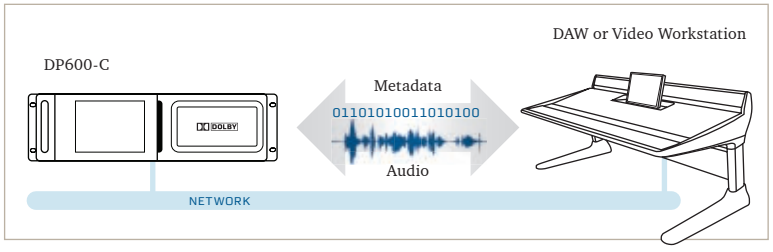

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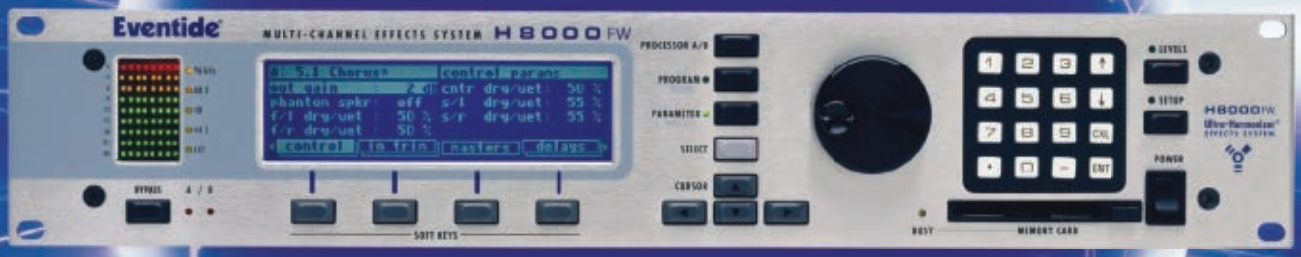


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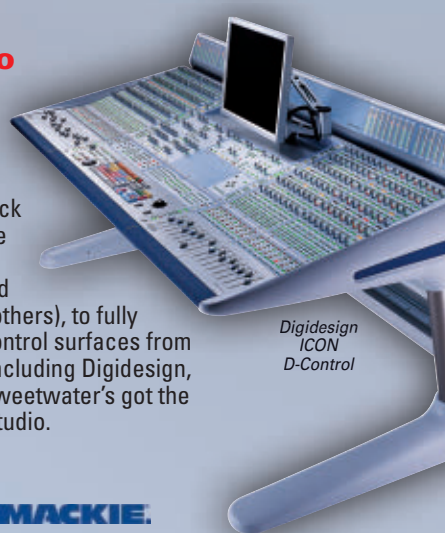

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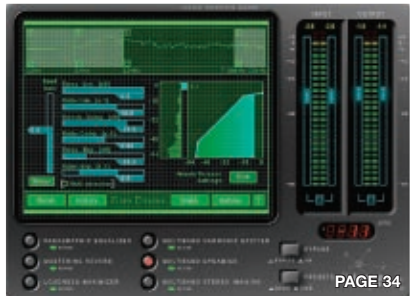
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**46 Winter NAMM Show Report**
In this issue, and at mixonline.com, you'll find our most comprehensive NAMM show coverage ever, bringing you all the news about company shake-ups, new gear and trade show events.

**On the Cover:** Red Bull Studio in Santa Monica, Calif., was designed by Dave Bell of Whitemark and Troy Germano (formerly of Hit Factory). It features a 48-channel SSL K Series console and custom Exigy monitoring, and will support Red Bull's record label and music production efforts. **Photo:** Robert Wright. **Inset:** Steve Jennings.

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**1983:** Bill retired and sold UA (now UREI) to Harman International. His original products became prized collectors items for almost two decades.

**1999:** Universal Audio was revived by two of Bill's sons. Bill, Jr., and Jim Putnam continue their father's legacy with hand-assembled reissues based on Bill, Sr.'s, drawings, vintage components and design secrets from his personal diaries.

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# The Music Life

The ongoing state of confusion and borderline despair in the music industry—and, by association, the recording industry—is not really about a nosedive in CD sales or the now decade-old "threat" of file sharing. It's not about label layoffs or big studios closing. It's not even about quality vs. convenience, or whether pirating can or can't be stopped. These are simply today's realities. No, the confusion is the result of a much longer but now-hyperaccelerating shift in the culture at large—the culture of information, the culture of social interaction and certainly the culture of music.

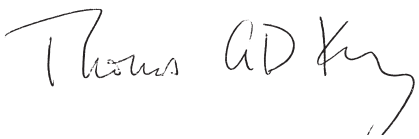
Music isn't only about music any more. Well, some of it still is, but for the majority of consumers, music is about lifestyle. It's about the culture they live in and the friends around them. It's about a rite of passage or a stumble through darkness. And it's always been this way, from the lament of a Depression-era Okie to the howl of an alienated, plaid-shirted Northwest teen. Steve Jobs knows that. When the culture shifted, he adapted, then led. Toyota knows it, making the Scion a lifestyle surrounded by hip art and cutting-edge music. Red Bull, whose studio is featured on this month's cover, knows it, too. Music is about who and what we are. Music is culture.

I, too, cringe when Led Zeppelin helps sell a Cadillac, but I also know that my teenage daughter later bought her own Zep two-disc set. I don't endorse Red Bull the energy drink; I've never even tasted it, but I do recognize that the company has done as much to promote music worldwide as any label in recent years. Red Bull has been entwined with the music industry for years, hiring L-Acoustic P.A.s for an air race in San Diego, hosting Red Bull Music Academies and Red Bull Music Labs around the world, teaching Reason at Red Bull Music Workshops and building out the Red Bull Studio music network out of New Zealand. Yes, Red Bull sells a lot of drinks. They also help sell a lot of music.

And, of course, there's the store on every corner. Starbucks has embraced music play/sales/distribution as part of its business model and its own beverage-centered culture, forming alliances with Apple, XM Radio and the Concord Music Group. Whether you're a Frappucino drinker or not, there's no denying that innovations like its onsite iTunes Wi-Fi Music Stores promote and sell a lot of music.

What does this all mean for the recording industry? There's more music being made—with a greater potential audience—than ever before. There's more *audio* being produced than ever before. Yet big studios will close in favor of new condo developments, while other studios will open to address a wide-open market in interactive audio. Manufacturers with innovative products will thrive while others will fail. Some musicians, engineers and producers will continue to make money, either in traditional ways or in ways we never saw coming. Others will go back to their day jobs and sing in blues bars. It's always been that way. It's just a new way.

The point is not that Red Bull or Toyota or even Apple represent the future of our industry. But we could all stand to take a look at the way they, and countless others, view music: as a lifestyle. As the heartbeat of culture.



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# Letters to Mix

## STUDIO RECORDING: A DYING ART?

I had to chuckle when I saw the cover of your January 2008 issue: "Live Sound Issue." What *Mix* issue is *not* about live music anymore? I feel as though you have gotten away from your roots. The reason is simple: Music recording is dying.

iPod and Sirius/XM devices are ruining music daily. I've had it with the current crop of "musicians," and I suspect that I'm joined by hundreds, if not thousands, of other engineers and producers. The "producer" nowadays is a kid making "beats" in his bedroom. Most of the companies who make high-end audio gear will be out of business by the end of this decade, unless they retool and start offering VST plug-ins for every piece of equipment they make. This is a nightmare for those of us who believe that there is such a thing as a signal chain that one needs to go through to achieve a good sound.

If we continue down this path, all music will be "live." This is good for the paying customer who wants to go out for some entertainment. The problem is that most older listeners don't go to the kinds of venues that feature live music. Most kids can't appreciate the vagaries of "good" music or, at least, music that was created with an ear for the finer and subtler aspects of the art. This will result in a dumbing-down of music, the likes of which has not been seen since, well, the 1950s. And if you think that the '50s were the "golden age of crummy pop," wait until the teens and '20s of the 2000s.

What happened to all of the great music that we all used to listen to and love? Who will carry on the mantle of this incredible art form?

*Sammy James*

## ROY PRITTS TRIBUTE

I have enjoyed *Mix* magazine since my first issue, which may have been one of the very first issues published. The subscription was given to me by Dr. Roy Pritts, who brought me into the music business/recording/live sound/synthesizer program at the University of Colorado at Denver Auraria [campus]. He was a good friend and mentor, even after I graduated from the program.

Every issue reminds me of him, and I believe it was *Mix* that paid such a fitting tribute to Dr. Pritts after he passed away a short time ago ("Current," August 2007). Thank you always for such a fine magazine! I read every issue cover to cover, and there is always good information that I use in my day-to-day audio pursuits.

*Brian Salyards*

## TALKBACK

*The January editions of the MixLine e-newsletter asked readers who work in game audio production after beginning their careers in music and post-production to tell us why they made the switch, as well as name the title of the first videogame they worked on. Here are a few of the responses that we received.*

I got my start in late 1993 to early 1994. I was playing in bands and was in my last year of college. I had a friend who was an occasional set-design artist and worked on a couple of movies, like *Batman* and *Jurassic Park*. He got a job through a friend at New World Computing as a 2-D animator for the company. I was working at Sam Goody's record store, and he came in to see if I would be interested in interviewing for the "sound guy" position. The only computer I owned at the time was an Atari 1040ST running Master Tracks Pro.

Two days prior to the interview, I purchased a ton of magazines current to the gaming industry and read like a madman so I knew a little about the current game biz. The thought of getting paid to be creative was just a wonderful thing to me, and I was determined to try it out.

Needless to say, I got the job and here I am roughly 15 years later with more than 100 game credits and my own sound company and recording studio. I have actually used my game experience to get into post-production and have done a feature film and TV spots for the movies *300*, *Pathfinder*, *We Are Marshall* and, most recently, *I Am Legend*. I am thankful every day for the chance I got.

The first titles I worked on came out about the same time; they were *Hammer of the Gods* and *Inherit the Earth*, both for the PC. I think our audio budgets were about a hundreth of what they are now.

*Rob King*
*Green Street Studios*

I'm a DJ/producer/MC getting into the game industry. My first game audio gig was doing sound for the THQ title *Saints Row* with Volition Inc. I chopped up a lot of voice, designed the ambience implementation and made some placeholder radio station ID/speech recordings.

I'm an old-school gamer and have a degree in computer science, so the transition was pretty natural for me. I actually got in the loop with the developers through my work organizing hip hop events in their area. Then a friend of mine who I DJ'd with got a job there and recommended me for another spot. My electronic music/networking skills were integral in being the right person [in the] right place [at the] right time. Before that, I didn't have much intention in going into game audio, but it turned out to be a great career path for me.

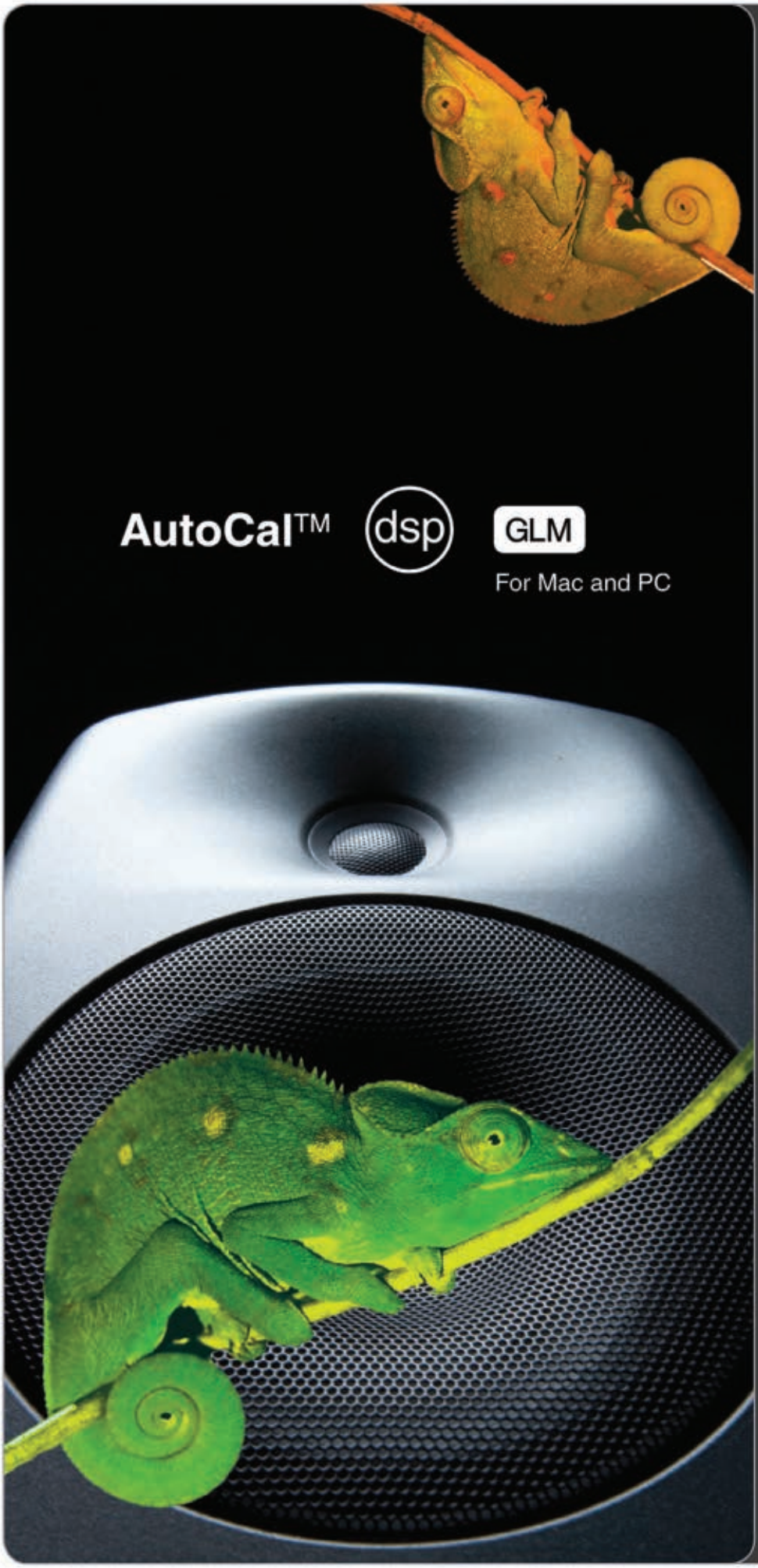
I plan to get further into sound design with Foley/synthesis and audio programming, then eventually branch into game design. I believe interactive multimedia is the medium of the future and we're just starting to see the beginning of next-level gaming.

*Victor Carreon*

My first title was *The Playroom* for Broderbund. I made the switch from full-time musician/composer to games because of the position that opened up at Broderbund. I found out about it as CD-ROMs were getting popular. I've been doing sound work in games about 80 percent [of the time] since then, the rest [in] TV, film and some live.

*Tim Larkin*

We'd like to hear from anyone who has worked in Nashville. Tell us about your most memorable Nashville session! And if you've worked in Nashville for several years, tell us about how the scene has changed. E-mail us at mixeditorial@mixonline.com.

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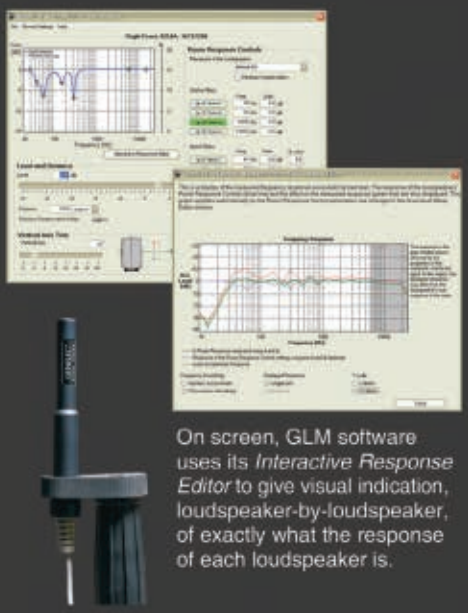

On screen, GLM software uses its *Interactive Response Editor* to give visual indication, loudspeaker-by-loudspeaker, of exactly what the response of each loudspeaker is.

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...WINTER NAMM NEWS...WINTER NAMM NEWS...WINTER NAMM NEWS...

# THE AWARD GOES TO...

PHOTO: JASON VAUGHN

The night before Winter NAMM 2008, *EM* and *Remix* held a joint awards show celebrating the best in audio technology for 2007. Pictured from left are *Remix* technology editor Markkus Rovito, Universal Audio's Mike Barnes and Joseph Lemmer, and *EM* editor Gino Robair. For additional photos from the bash, as well as all of *Mix*, *EM* and *Remix* magazines' coverage from Winter NAMM, visit emusician.com/ms/namm08.

# GIBSON GUITAR, TC GROUP MERGE

Gibson Guitar chairman/CEO Henry Juszkiewicz (pictured at right) and TC Group CEO Anders Fauerskov held a press conference at Winter NAMM, where they disclosed that the two companies will merge.

"This merger will revolutionize the music industry for many years to come," said Juszkiewicz. "The synergy between the two companies will allow us an enormous advantage in the development of new audio technologies."

"The opportunities ahead are very exciting for us," said Fauerskov. "This merger will create exciting new opportunities for all employees within TC Group and Gibson, and in particular fantastic new tools for our markets and customers."

Under the terms of the new merger, Fauerskov will remain based in Europe and serve as COO of the new combined Gibson Guitar Corp. The two companies expect to finalize the deal by the end of February 2008.

# METALLIANCE GOES PRO

***METAlliance founders (L-R, rear) Elliot Scheiner, Ed Cherney, Al Schmitt, Frank Filipetti, Phil Ramone, George Massenburg and Chuck Ainlay. Foreground (L-R): Inaugural Pro Partners Bill Putnam Jr., Universal Audio; Joel Silverman, Millennia Media; Jeff Phillips, Lexicon; Peter Chaikin, JBL Pro; Mike Edwards, Audio-Technica; EveAnna Manley, Manley Labs; John Jennings, Royer; and Carl Jacobsen, Cakewalk.***

At Winter NAMM, the METAlliance (metalliance.com) announced the first group of Pro Partner manufacturers in a new program of professional audio and video companies working with the alliance to recognize the call for quality in the recording arts. The METAlliance comprises award-winning audio engineers and producers who have been involved in establishing techniques and technical standards. Its Board of Directors includes Chuck Ainlay, Ed Cherney, Frank Filipetti, George Massenburg, Phil Ramone, Elliot Scheiner and Al Schmitt.

Massenburg, addressing the press conference, said, "We hold thorough, comprehensive testing and evaluation in the highest regard. The METAlliance is all about recognizing the benefit of quality workmanship, not to mention quality listening. We qualify tools knowing that in our everyday work we're using what we're testing."

Pro Partners who joined the METAlliance at the press conference include Audio-Technica, Cakewalk, GML, JBL Pro, Lexicon, Manley Labs, Millennia Media, Royer Labs, Sanken Microphones and Universal Audio.

# BIGGER SLICE OF CAKE
## CAKEWALK, ROLAND UPDATE

Cakewalk has expanded its strategic relationship with Roland; in 1995, Roland began distributing Cakewalk products in Japan. In 2003, Roland invested in Cakewalk to help fund the development and marketing of joint products, as well as distributing products outside of the U.S. Now, Roland owns a bigger share of Cakewalk, but didn't acquire the whole company; i.e., Cakewalk is not becoming a division of Roland. No other details of the agreement were announced, but stay tuned for future developments regarding the two companies creating joint products.

COMPILED BY SARAH BENZULY

# JOE DESMOND, 1953-2008

Joe Desmond, a well-known industry figure with more than a quarter-century in pro audio and M.I. sales, passed away on January 16, 2008, after being diagnosed with liver cancer this past fall. A graduate of Boston University, this native Bostonian went West to California for his first job as a Guitar Center salesman. Moving rapidly within the organization, Desmond opened and managed stores in California and Illinois before starting his own company, which exported rare guitars to Japan. In 1987, Desmond went to work for Furman Sound in Northern California, and during his 17-year tenure there became a driving force responsible for bringing the company from fewer than $1 million in annual sales to a position as an industry leader.

Several years ago, he left Furman to found Joe Desmond & Associates (www.jdagear.com), a rep firm and import business located in nearby Rohnert Park, Calif., handling top suppliers such as Adamson, Aphex, BBE, Danley, ETA Systems, FBT, G&L Guitars, Nady Systems, One Systems, Raxxess, Rolls, SE Electronics, X2 Digital Wireless and others. Joining Desmond in the operations at JDA was his wife, Pam, whom he met at a NAMM Show in 1982, when she was working as an ad executive at *BAM* (*Bay Area Music*) magazine.

Desmond, whose hobbies included classic automobile restoration, was known for his warm smile and his ability to put his customers' needs ahead of his own. He is survived by his wife and two children, Jillian and Ben. Desmond will long be remembered by his many friends throughout the industry.

*—George Petersen*

# TIME MACHINE

## KORG M1 TURNS 20

Back in 1988, the Korg M1 music workstation was one of the first products that combined a keyboard with realistic sounds (using PCM-sampled wave ROM), sequencing and digital multi-effects in a single package, helping to bring many D.I.Y. musicians to the forefront. To celebrate this anniversary, Korg is offering numerous promotions; visit www.korg.com/promo for info.

# ON THE MOVE

**Who:** Harry Chalmiers, president of McNally Smith College

**Main Responsibilities:** I am leading an inclusive planning process called 20/20 VISION. We are creating a new vision for the college (what will it be like in the year 2020).

**Previous Lives:**
1998-2006, VP for academic affairs/provost at Berklee College of Music
1994-1998, executive director of MacPhail Center for Music
1985-1994, executive director of Indian Hill Music Center
1978-1994, instructor, College of Music, University of Massachusetts Lowell

**The most exciting thing about working in the education field is...**the opportunity to shape the process and content of education to become as meaningful as possible to young people.

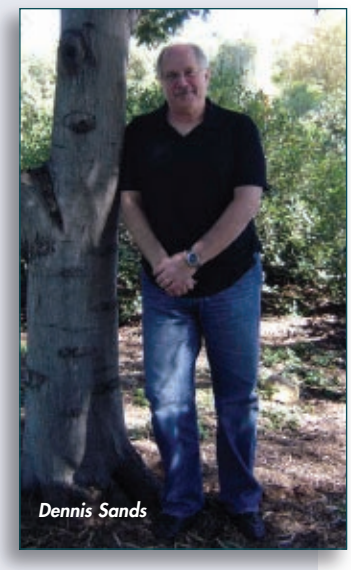
**The one profession I would like to try is...**professional golf.

**Currently in my CD changer:** Béla Bartok, Broken Social Scene, BT, Imogen Heap, Radiohead and some working drafts of new songs I'm writing.

**When I'm not at work, you can find me...**working on my novel. It's a suspense story set in two locations: a music college in Boston and South Louisiana after a major hurricane.

# CAS TECH NOMINEES

The nominees for the Cinema Audio Society's 4th Annual Award for Technical Achievement are:


Dennis Sands

## PRODUCTION

Aaton Cantar X2
Schoeps CMIT 5U
Fostex PD606
Sonosax SX-STD mixer
Zaxcom DEVA 5.8

## POST-PRODUCTION

iZotope RX
CEDAR DNS 2000
Steinberg Nuendo 4
Euphonix S5 Fusion
Digidesign ICON

The awards will be presented on February 16, 2008. The ceremony will also honor Outstanding Achievements in Sound Mixing in five categories: Motion Pictures; Television Movies and Mini-Series; Television Series; Television Non-Fiction, Variety or Music Series or Specials; and DVD Original Programming. Music scoring/sound re-recording mixer Dennis Sands will also take home the Career Achievement Award, while writer/director Bill Condon will be presented with the Filmmaker Award.

## LISTEN...PLAY...READ...WATCH

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NAMM2008 Show News

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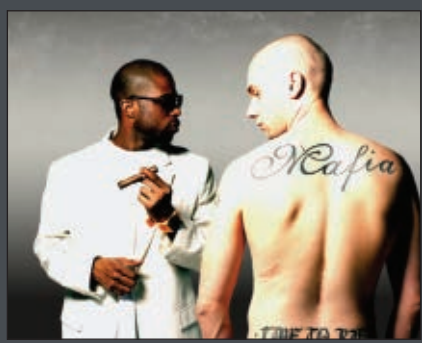
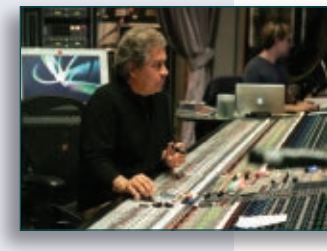



**LISTEN: Midi Mafia**
They're climbing the charts with their distinctive production of R&B and hip-hop artists. Check out samples of Midi Mafia's projects.

**WATCH: Foo Fighters**
There are always more tour photos than we can print. Log on and peruse our Foo Fighters photo gallery.

**LISTEN: Recording Notes**
Hear clips from P.O.D. and Jonas Brothers, Tommy James & The Shondells' "I Think We're Alone Now" and "Cool Spins."

# FERNANDEZ MIKES ADAMS



Scoring mixer Bob Fernandez recently completed recording Joseph Vitarelli's score for the HBO miniseries *John Adams*, which is based on David McCullough's Pulitzer Prize–winning biography of the second American President. Fernandez chose a nice selection of Sennheiser and Neumann microphones for the project, including a pair of MKH 8040s on the violin section. Other selected mics used at the Sony Pictures scoring stage were a Decca Tree with three Neumann M 150s, and a pair of Neumann M 149s that were used as outriggers. Additional M 149s served to capture the bass section, with Neumann TLM 170s on the cellos. A Sennheiser MKH 40 miked the harp, and several additional MKH 40s captured the violas, flutes, oboes, clarinets and bassoons. A bank of Millennia Media HV-3 preamps served the entire ensemble.

# MIX L.A. OPEN UPDATE

The 13th Annual Mix L.A. Open, set for Monday, May 12, 2008, at the Malibu Country Club, promises to be bigger and better than ever! Hosted by honorary chairman Ed Cherney, the best ball tournament will have more contests, more prizes and more auction items. Open to any level golfer, the event begins with registration and a continental breakfast at 8 a.m., with the shotgun start at 10 a.m. The awards dinner and silent auction are scheduled for 3:30 p.m.

Proceeds will benefit hearing health and audio education programs, including the House Ear Institute's Sound Partners program (www.hei.org/education/soundpartners/sp.htm) and L.A.-based Sound Art (www.soundartla.org).

For information about sponsorships or entry fees, go to www.mixfoundation.org or call Karen Dunn at 925/939-6149.

## INDUSTRY NEWS

*Steve Seable*

**Dr. Charles Chen** joined **Lauten Audio** (Santa Clara, CA) as chief engineer. The company has also sparked a distribution agreement with **Analog Audio GmbH** (Gröbenzell, Germany)…New York City–based **Syntonic Design Group** is joined on the left coast by **David P. Hoover**, general manager of West Coast operations…**Harman** (Northridge, CA) updates: **Blake Augsburger**, country manager of Harman USA, and **Ken Yasuda**, country manager of Harman Japan…**Auralex Acoustics** (Indianapolis) expanded its sales force with **Tim Martin**, director of sales…New production manager at **Linear Acoustic** (Lancaster, PA) is **Steven Glynn**…Previously at Disney, **Steve Seable** joined **Yamaha Commercial Audio Systems** (Buena Park, CA) as product manager for the DSP and amplifier group, while **Peter Robinson** is the new product manager for the speaker product team… **Sennheiser** (Old Lyme, CN) appointed **Ben Escobedo** to associate product manager, music industry products…**iZ Technology** (Vancouver, BC) opened three authorized service centers for the West Coast, Central and East Coast…New distribution deals: **TransAudio Group** (Las Vegas) is the exclusive worldwide distributor for **TRUE Systems** (Tuscon, AZ); **K&K Productions** is the new **Providers Series'** (Dacula, GA) rep in southern Illinois, Iowa, Nebraska, Kansas and Missouri; **DiGiCo** (Surrey, UK) products will be distributed in the U.S. and Puerto Rico by **Group One Ltd.** (Farmingdale, NY); and **APB-Dynasonics** (Totowa, NJ) is represented in Southern California, Arizona and Southern Nevada by **Marshank Sales** (Tarzana, CA).

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# Red Bull Studios

**By Tom Kenny**

*The live room and control room (below) feature broadband acoustic treatment in custom Red Bull colors.*

PHOTOS: ROBERT WRIGHT

Does it really surprise anyone in 2008 that Red Bull would build a world-class recording studio in the heart of Santa Monica, Calif., a few miles down the I-10 from the entertainment capital of the world? Or that the company would hire the former owner of The Hit Factory, who would then bring in his longtime partner, one of the world's leading designers, to bring it to life?

Red Bull North America doesn't do "small." And they don't do "local." In the summer of 2005, Greg Hammer, a veteran label exec and now head of music at Red Bull, called Troy Germano and told him of plans to build a recording space within the new 100,000-square-foot U.S. headquarters then just starting construction. By September 2005, Germano, now the principal of Studio Design Group, New York, and David Bell, a partner in White Mark Ltd., London, began designing the studio together.

During the ensuing months, the live room was made slightly bigger, the control room was pushed back and some editing rooms were nixed. "Thirty-foot ceilings, no columns—it was an ideal space," says Germano. "We knew the enormity of the project going in. To have 100,000 square feet on one level is essentially four airplane hangars. We were able to work with our 5,000 square feet in the back as they were shoring up the front. It went very smoothly."

From concept to completion took 26 months, with the actual construction happening from February 2007 to the opening this past October. For Germano, it marked a re-entry into studio life following the sale of The Hit Factory building in 2005 and a two-year stint purchasing large-scale concerts for the Sazka arena in Prague. It also rekindled his 20-year partnership with Bell.

"David and I first worked together on Hit Factory London in 1989, when my dad and I began a joint venture with the CBS UK facility on Whitfield Street in Soho," Germano recalls. "David was heavily involved in that project with his previous partnership. Ten years later, Dave formed White Mark with partners Derek Buckingham and Alan Cundell, and we did Studios 6 and 7 in New York, as well as the entire facility at the Hit Factory Criteria in Miami. Red Bull is very reminiscent of Studio 6, and that room was modeled loosely on a studio I'd seen in Stockholm back in 1992.

"I went one weekend in '91 to see Polar Studios, where Led Zeppelin had recorded *In Through the Out Door* and where all those great ABBA records were created," Germano continues. "There was a 56-input SSL E Series and really just three booths around the control room. One was marble, one was wood and one was a combination of materials. I called my dad from Stockholm and told him I knew how we should build the new room on the third floor. Not really a studio, but a control room with four booths. That idea became Studio 2, and the same concept was extended to Studio 6, which won a TEC Award in 2003. In some ways, that concept carried over to Red Bull. There are three booths surrounding a large live room, and one of them is tremendous."

The rooms could have been even larger, but Germano and Bell opted not to use all 30 feet of ceiling in favor of accessible and isolated HVAC systems. The advantage, besides luxurious room to treat the studio ceiling, is a 12-foot pocket of air between studio and structure.

"The height of the building translates from a user's point of view into a live room of majestic size with great decay," says Bell. "The acoustic treatment is a mixture of broadband absorption and a large amount of diffusion. We believe in broadband solutions in all designs and do not install tuned elements, as these can run the risk of producing unevenness in the room's response." The back wall is made up of three sections of diffusers with areas of absorption between them, and the live room features diffuser clouds.

On the cover this month is the 48-channel SSL K Series in custom Red Bull colors; this is the last K series ever built. Directly behind it, built into the producer's desk, is a Digidesign Icon D-Command. "Usually that would be rolled into the side for a project," Germano explains. "This is an experiment, and we'll see if it gets used. But in today's world, 48 faders is enough, even without the small faders. So much processing goes on inside the box, we thought it would be nice to have D-Command at the listening point—the benefit of both worlds."

The main monitoring system is by Exigy, the London-based company of Matt Dobson, former owner of Boxer. (Germano installed Boxer monitors in the original Hit Factory at 421 West 54th St.) "There are four 18-inch subwoofers built into the front wall below the stereo mains. I wanted to do something different; these punch, they have clarity."

The D-Command atop the producer's desk is flanked by Teletronix, Manley and vintage Universal Audio gear, among countless other analog gems. The mic collection is still growing, and the room has had its share of sessions.

Red Bull has been in the music industry for more than a decade now, promoting music worldwide far better than most major labels. It should come as no surprise that they now have a world-class space. ■

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*Tom Kenny is the group editorial director for* Mix, EM *and* Remix *magazines.*

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# STREAMLINING HIP-HOP PRODUCTION

## The Roots, Nelly and Al Kapone Keep It In the Box

Hip-hop production is usually a collaborative affair, where numerous contributors work together in various studios across the country. This can also extend into the mixing process, if the artist is so inclined. While developing a song—and subsequent set of rough mixes—the artist and producer(s) will often move into a more "mixing in the box" situation, where they have access and input into more stages of a song's multiple mixes, which the engineer can then print and send off in a day.

The three albums described here took more than a year to make and represent different sides of the genre. In each case, though, the artists have all staked as much of a claim in their records' productions as is technically possible.

### THE ROOTS' *RISING DOWN*

Headquartered within producer/arranger Larry Gold's Philadelphia facility, The Studio, The Roots began working on their new album, *Rising Down*, almost immediately after wrapping their *Game Theory* album in 2006. Founded by drummer Ahmir "?uestlove" Thompson and MC Tariq "Black Thought" Trotter, The Roots are a quintessential organic collective, growing in their most productive periods with musicians and writer/producers who strengthen the core; in a live situation, they tighten up as a full-on hip-hop band. In the studio, songs emerge from a combination of band compositions, submitted beats and band jam sessions, with lyricist Black Thought and ?uestlove as the galvanizing producer/performers, and longtime manager/producer Richard Nichols supervising as executive producer.

On the origin of *Rising Down*'s songs, Nichols says, "In the process of making this album, we sifted through and/or produced at least 2,000 tracks. When we feel something, we'll pull it out and Ahmir will go into the studio with various bandmembers, re-cut drum parts with engineer Steve Mandel and start developing some different arrangements around it."

Outside of the bandmembers, the core unit of *Rising Down* includes vocal producer/in-house A&R Karl Jenkins, and writer/producers Khari and Radji Mateen, Tahir Jamal, Pedro Martinez, Ritz, Ridwan and Shane Clarke. From the point of track selection, a steep production process begins, which marries an old-school approach with new-school execution. As Nichols describes, "The Roots are a magnet for creative people," and the Philly-based collective that's grown up around the band gives weight to their vision and helps carry it out. Thanks to unlimited studio access, studio smarts and no-limits digital technology, The Roots—on their tenth major-label album—are recording more prolifically than ever.

?uestlove's production savvy and sonic flair thrive, unfettered, within the in-the-box production style used on the past couple albums. At The Studio, ?uestlove, Black Thought, Roots engineer Jon Smeltz and camp develop tracks into Roots-sized songs, laying down multiple drum patterns, experimenting with effects, cutting stacks of vocals and backgrounds, and bringing in Roots musicians like producer/keyboardists James Poyser and Kamal Gray to explore various arrangements. In a pre-mixing stage, which Nichols prefers to call "level-one mixing," ?uestlove, Smeltz and Nichols assemble a number of rough mixes per track. "At this point, we're taking the song to the next level ourselves, conceptualizing through the use of plug-ins," Nichols describes. "We want everything in-the-box so that we never lose anything. We'll have a million versions of songs; every time we make a change, it's a new version."

For mixing, they bring in fresh ears. New York City–based Jason Goldstein, who mixed a large portion of *Game Theory*, perfectly fits in with The Roots' production approach. "When we get to the mixing stage, Jason starts his versions and we're able to produce the finished song by a kind of Frankenstein patchwork method," Nichols describes. "Working this way requires more attention, keeping accurate notes and having the due diligence to sit there and listen to version after version, night after night. But it gives you the latitude that you could have only dreamt of some years ago."

A Grammy-winning mixer, Goldstein's pop and R&B chops (Beyoncé, Rihanna, Mary J. Blige) also appeal to The Roots, says Nichols, who acts as the outspoken musical advocate for the band throughout the mixing process. "Our music tends to be artsier and grimier, veering into experimental post-hip-hop, and Jason tends to mix more contemporary hip-hop and R&B, so he brings a certain refinement we need to get to an aesthetic that isn't so niche in terms of the sound, but at the same time is not made for radio."

With the recording and production process so extensive prior to mixing, Goldstein has a lot of ground to cover in the initial mixing sessions, reviewing and organizing all the ideas that were meticulously crafted in the rough mixes. Until this point, every idea, every musical effort and every sonic experiment has a shot. In mixing The Roots, the pruning, enhancing and interpreting process will be just as exhaustive and, again, highly collaborative.

"They have this aesthetic they're going for, and it's pretty elusive," says Goldstein from the mix position at Battery

BY JANICE BROWN

Studios in New York City. "They want it to sound lo-fi, but not like a demo. They want it to have a raw, aggressive energy, but also sound smooth and clean." Approaching the mix from a few different angles helps Goldstein narrow down all of the possibilities. "Now that I'm all in-the-box, I can go in one direction for a couple hours, print that and switch gears, and then go in another direction for a couple hours," he says. "I'll send several versions to Rich and we'll marry together different bits of my mixes. The Roots try so many different ideas, so it makes sense that I should try a bunch of different ideas in mixing them."

Song-to-song, Goldstein spends the most time honing the low end as ?uestlove's impeccable drumming is the central feature of The Roots' sound. "When Ahmir does the rough mixes, he builds in a lot of the lo-fi aesthetic that he wants," says Goldstein. "He'll do some radical EQ'ing and throw Amp Farm on certain drum tracks to give them that distorted, lo-fi sound, and so most of the time I just build on top of what's there. A lot of the effects you hear on the record are effects they applied that I've either augmented or replicated in a different way to bring even more definition to it."

Establishing the best drum sound for each song means sifting through the multiple drum patterns and drum sounds—live and programmed—and pulling together the choice cuts from several rough mixes. "Ahmir likes his drums to sound sort of trashy and aggressive, so I mix it fairly dry; there's no big room sound, which is what makes it sound in-your-face," says Goldstein. "The room mics are all mono and they're coming right at you, up the middle, so that the central point is Ahmir and the drums. By mixing the drums, bass and vocal really dry and putting them right up the middle, I have all this space on the sides to use for cool wrap-around sounds: synth pads, vocal stacks turned into swirling pads and other such elements."

Goldstein added presence to Black Thought's vocals using the Sonnox EQ's GML setting, as well as Sound Toys Phase Mistress to turn background vocals into padding synth sounds. He applies the Crane Song Phoenix plug-in to all submixes, which, he says, "radically changes the character of the sound

*Al Kapone builds songs on musical jams.*

*Billy Hume mixing in the box for Al Kapone's* The Hip-Hop Band Movement

*Jason Goldstein brings contemporary hip-hop and R&B mixing elements to The Roots' projects, including the upcoming* Rising Down.

and glues stuff together in a way I haven't heard anything else do." Goldstein also uses the Sonnox Inflator on the stereo bus to add dynamics and increase apparent loudness.

The always eclectic Roots criss-cross through various musical territories on *Rising Down*, from the fuzz-pop single "Birthday Girl," featuring Fall Out Boy, to the hard-hitting street romp "Get Busy," to the moody, synth-heavy "Singing Man." So, mixing the album sometimes means smoothing out any distracting contrasts. "The songs, no matter how smooth or pop-y, need to knock, need that hip-hop weight," says Goldstein. "There's a sensibility about the low end—they're not going for the contemporary hip-hop overdone low end, which hits you in the chest, but something more full that envelops the records like a feeling."

### NELLY'S *BRASS KNUCKLES*

This past December, St. Louis–based rapper Nelly, the consummate hip-hop hit-maker, delayed the release of his highly anticipated new album, *Brass Knuckles*, for a few more months so he could spend more time in the studio. Nelly's engineer, Carl Nappa, expects they'll stick hard and fast to the new June 24 release date, though with 50 songs to pare down to 14, it's decision time.

Nappa, who engineered most of Nelly's last release, the 2004 double-disc *Sweat* and *Suit*, moved to St. Louis to set up and operate Nelly's recording studio, located within his label's headquarters. "This has not been a typical process for a Nelly record," says Nappa. "In the past, he'd go into the studio, and three to four months later he'd be done. But he seems to be searching for something on this new record, which he started last January [2007] out in Los Angeles with a producer named Nef-u."

According to Nappa, during the past few months, the album's sound has changed pretty dramatically, at least in terms of writer/producers with tracks in the running. Nelly has a history of relying on his last-minute instincts, according to Nappa. "Production on *Nellyville* [2002] had wrapped in time for the label's release date, but Nelly wasn't satisfied and went back into the studio, delaying the album's release, to cut the last two songs—'Hot In Herre' and 'Dilemma'—which became the album's biggest singles."

Making *Brass Knuckles*, Nelly has logged time at The Record Plant in Los Angeles and in Atlanta studios with Jermaine Dupri and Polow da Don, but the majority of the recording and mixing has happened with Nappa at Nelly's studio in St. Louis. It's not the first time Nelly has worked in his own private studio—he did so for 90 percent of *Sweat* and *Suit* in a makeshift studio Nappa set up in a Los Angeles rental. "I sold Nelly on the idea of doing the last studio in L.A. with the notion that we would bring all the equipment back here and set it up again in St. Louis," he says.

The St. Louis studio is the base camp for Nelly and artists on his Universal imprint, Derrty Entertainment, though it's entirely portable. Nappa says, "I worked with acoustic designer Mark Donahue and builder Joe Zimmerman to build a totally modular acoustic design for this studio. All the acoustic treatments are built in modular blocks and screwed onto the wall. We can easily unscrew these panels and make the same dimension room somewhere else."

Equipped with Pro Tools HD, Digidesign Control|24, Augspurger mains with 18-inch subs and ProAc near-fields, Nappa has recorded a good deal of Nelly's vocals and mixed nearly 20 songs in the St. Louis studio so far. Professional Audio Design's Dave Malekpour equipped and tuned the room. "The monitoring system is from the Hit Factory Studio 2, with Crown and Bryston amplification," says Nappa. "The only thing Dave and I changed was the crossover; it had been an old BSS crossover that I could hear overloading and we changed it to the new Dolby Lake System, which is incredible." That said, Nappa adds, "I do 90 percent of my mixing on my Avantone—the new Auratone—and ProAc speakers, but Nelly loves the big monitors."

***Carl Nappa moved Nelly's portable studio from L.A. to St. Louis for* Brass Knuckles.**

Right after the *Sweat*/*Suit* albums, Nappa started getting a lot of calls for indie projects and began mixing in-the-box to fit the lower budgets. Now, and for the past two years, Nappa's been mixing this way full time. "With Nelly, this style of mixing is invaluable because he'll often be out of town, and I can easily send him MP3 mixes and keep it open to production for weeks after that," says Nappa. "We'll go back and forth—he'll change a lyric, add a vocal or request some sonic revision. I'm still tweaking stuff that I mixed months ago."

Having Nappa at the helm of the St. Louis studio helps Nelly work as fluidly as possible, while maintaining an album producer's control over the entire catalog of material in the hopper. "As a songwriter, Nelly gets into these really prolific modes of writing," says Nappa, "and with the studio here we can keep the production open on as many songs as we like."

An expert melody-man, Nelly intuitively sees songs rising up around the beats, an approach that's likely to blame for the number of songs in production. "On this record, Nelly's barely written anything down," Nappa observes. "He'll get inspired and go into the booth, work on a couple lines at a time and create as he goes. We're just filling in the pieces after that." Nelly's vocal chain, new on this album, is a Sony C800G microphone into an Avalon AD2022 mic pre, then the AD2044 compressor and AD2055 EQ.

Those songs produced outside the St. Louis studio come into Nappa's hands in varying degrees of "produced." When Nelly works with big-name producers, the songs come back fully mixed by their own engineers, but in cases of less-equipped writer/producers, production-oriented work falls to Nappa. "When I get the multitrack, I'll match my basic levels and panning to what the producer had on his 2-track, and from there I'll take it into the mix, compressing, EQ'ing and sculpting the low end," Nappa describes. "Most of these songs revolve around a 4- or 8-bar loop, but since most of the producers don't come out during mixing, I'll be very involved in the arrangement—doing drops to create choruses, bridges, transitions; work that, in another genre, would be handled by the producer."

As for mixing, Nappa says, "You really can't screw up Nelly. He's got the mic technique down so well that you put up the vocal and it's 90 percent there." He mixes with a tried-and-true technique and his go-to plug-ins. On Nelly's vocals, typically, he applies light compression with the Waves Renaissance compressor and then—depending on the song—he'll EQ with Focusrite, Renaissance or Massenburg Design Works plugs. "If I need to do aggres-

sive EQ'ing, I'll hit the Focusrite; if it's more of a singing part, I'll use the Renaissance," Nappa explains. "If I need to do some dissecting, I'll use the Massenburg EQ. The last thing in my chain is the Crane Song Phoenix Dark Essence plug-in."

Nappa runs his submixes out through an 8-channel API summing mixer into the new Dramastic Audio Obsidian TXIO stereo compressor, through the broad-stroke Manley stereo Pultec EQ, and then limits the mixes and sends them off to mastering. "I spend a lot of time mixing, and we invested a lot of money in monitoring so I would know accurately what was going on," Nappa concludes. "So I don't leave a lot of room for mastering—1 or 2 dBs—and I use mastering engineers that I trust."

### AL KAPONE'S *THE HIP-HOP BAND MOVEMENT*

Memphis rapper Al Kapone has the crunk energy and lyrical flow of his Dirty South rap brethren down pat. He's even adapted it for the big screen, penning the *Hustle & Flow* highlight track "Whoop That Trick," as well as the soundtrack's "Get Crunk, Get Buck." On his ambitious new album project, tentatively titled *The Hip-Hop Band Movement*, Kapone digs much deeper into his Memphis roots, cutting a new musical path that fuses Memphis past and present.

It all started backstage at a Grammy event in Memphis. Talking about putting together a hip-hop band, Kapone caught the ear of Atlanta-based writer/producer/engineer Billy Hume, who had been working live instrumentation into more and more of his hip-hop productions (David Banner, Shop Boyz, Bonecrusher, Ying-Yang Twins). The two chatted and decided to keep in touch. "A month later, I went to Billy's studio in Atlanta," Kapone relays. "We totally clicked. We'd never worked together and barely knew each other, but in just two days we came up with two completed songs. I knew this was the vibe for my next project and there was no turning back."

What started out as a songwriting effort turned into a full-fledged album, and Hume was given the reigns over the entire project, including songs produced by Memphis-based *Hustle & Flow* and *Black Snake Moan* score composer/musician Scott Bomar and producer Kurt "KC" Clayton. "Every song on this album has been an adventure," says Hume. "It's not like the assembly-line production that goes into rap music. It's more like producing a rock record, and it's taken me drawing from all my experience—with alternative and jam-band rock, acoustic and reggae music—to pull this off."

Kapone's vision and artistic approach for the album were, as Hume describes, "inspired" and often resulted in magical sessions. "I wanted to make a hip-hop record that reflected the live musical roots here in Memphis—Stax and Sun Records—and the blues from the Delta," Kapone notes. To represent older-school Memphis, Kapone enlisted legendary session hands such as guitar player Charles "Skipp" Pitts, members of the North Mississippi All-Stars and members of Kapone's live gigging band, Tha Untouchablez, assembled by Clayton.

Hume and Kapone did very little advance planning before going into the studio, a method Kapone recognizes would not have been as successful without a full-on writer/producer/engineer partner like Hume. "Billy is amazing in the studio, and it really helped free my mind," says Kapone. "I whistle or hum something, and Billy blows that up. We ride the wave to the end, and it always comes out hot."

Though Hume says the process varied track to track, the songs were often built on musical jams. "We went to Dave Matthews' Haunted Hollow Studio to work with DMB

drummer Carter Beauford," says Hume. "I went there with the agenda to have him do some live drums we could use to liven up some of our MPC beats, but we ended up creating some great stuff on the spot there with Kurt Clayton on keys and Carter on drums. I went back to my studio and started building songs out of my favorite sections."

Lyrically, the album's defining track, "The Music," written by Kapone and Clayton, pays tribute to Memphis as the birthplace of rock 'n' roll. Hume and Kapone brought members of Tha Untouchablez into Young Avenue Sound in Memphis to cut the song's music. "I wanted to capture that live energy, with the band playing the song beginning to end," says Hume. "By the end of the day, we got that magical take, and I brought it back to my studio and programmed an MPC along with it. Then I cut some more guitars and grabbed some keyboard parts out of Kurt's original version and stretched and pitch-corrected them to the new version's key and tempo. We re-cut vocals and used another rock element—the bullhorn—for some background parts."

Hume recorded Kapone's lead vocals with a Neumann M149 through an Avalon VT-737SP, a Distressor compressor and into Pro Tools, using Shure SM7 and SM57 for backing vocals and stacks. He is very selective with instruments, amps and microphones; he meticulously changes guitar strings and drumheads, and tunes everything obsessively. "I want to get the best performance and the best sound going in, a process that's balanced out by the endless possibilities and total control we have once we're all in-the-box and mixing."

Hume notes that, as opposed to rock projects, the mix process with a hip-hop artist tends to be highly interactive and kept open to revision for months, making in-the-box mixing the preferred method. "The main challenge I have in combining hip-hop and rock is where to put the low end," Hume explains. "In rock music, so much of the low end is carried by the bass guitar, whereas in hip-hop it's carried by the big booming [Roland TR-] 808. And with the rise of the Dirty South sound, that 808 got 10 dBs louder."

Hume blended the live and sampled drums on every track in a somewhat uniform manner, choosing the MPC kick as the primary kick drum. "I found myself filtering the live kick drum down a good bit into the mix and letting the drum-machine kick carry that aspect of it," he says. "So mostly what you hear of the live drums is the tom fills, snare drum and hi-hats. In sections where there's a break, where Carter did a lot of amazing fills, I actually automate the live kick drum, bring the low end back for that split-second and then go back to the MPC."

Hume's recording and mixing techniques have evolved with the surge of live instrument recording he's experienced in the past year. "A lot of the artists I'm working with are more interested now in using real drums, real guitars and basses," he says. "I have adopted some new techniques for live hip-hop band recordings—I'll mike a kick drum with a speaker, for example, to get that extra fat low-end sound. I can make a kick drum sound almost like an 808 doing that."

Indeed, Kapone's vision for *The Hip-Hop Band Movement* is coming to fruition as live band hip-hop feels more and more like a welcomed trend to Hume, who just finished another rock/hip-hop hybrid project with Atlanta band Heavy Mojo, as well as work with live instrumentation for Kaine, from the Ying Yang Twins and crunk master Bonecrusher. ■

*Janice Brown is a freelance writer in New York City.*


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BY ELIANNE HALBERSBERG

# Midi Mafia

## DJ Dirty Swift and Bruce Waynne Break It Down and Build It Up

For the average producer, landing a career-making hit can take years of trial and error, mid-level chart positions and what feels like a lifetime of sessions. But the production/engineering/songwriting team of DJ Dirty Swift and Bruce Waynne, better known as Midi Mafia, is anything but average, and the wait for that hit lasted all of six months. Swift and Waynne were recruited to produce and mix 50 Cent's "21 Questions," a chart-topping sensation that immediately placed the duo in a whirlwind of attention and activity.

*Bruce Waynne (left) and DJ Dirty Swift—aka, Midi Mafia—keep it real in the studio.*

By the time they met, working in the same studio and cutting tracks for Bad Seed, Swift and Waynne had years of experience on their resumes. A professional relationship soon became a friendship, and they spent two years working for Sony Studios in what they describe as a "basement writers' room." With nonstop A-list artists coming in to track in the main rooms, it was an opportunity to network and bring beats to some of rap and hip hop's biggest names. But the multifaceted duo never limited themselves to one genre, and as their name recognition increased so did demands for their talents, with artists such as Jennifer Lopez and Fantasia seeking them out; that's their work on Fantasia's Number One single, "When I See You."

Together as Midi Mafia since 2003, Swift and Waynne have worked on singles, remixes, compilations and videogames. They have launched an imprint label, Family Ties, that enables them to sign and develop their own roster of talent, including urban pop singer Shire. This year, they're again working with Fantasia, as well as UK artist Bryn Christopher, Earl Hayes, G-Malone, Lamar and many others. The Midi Mafia phones, it seems, never stop ringing.

Despite being on the cutting edge of technology, Swift and Waynne insist that theirs is an "old-school" approach: as hands-on as possible, involved in every step of the record-making process, and focused solely on the artist's vision.

*Looking back on your earliest projects, how have you grown and perfected your craft?*

**Waynne**: When we got together, we were a couple of guys who needed each other to get to the next level of our careers. Our sound was all over the place; now it's all over the place strategically. We keep everything melodic and soulful in feel, but young, fresh and urgent at the same time. Our music has matured from rap and hip hop. The hooks have changed into songs. We're better producers, better at how we write and put things together. We're more conscious of what we're doing.

**Swift**: The method has always been the same. With pop artists, we bring in different types of instruments that we don't need in rap. But we've always liked to be there from beginning to end. I mix, Bruce writes, we do arrangements. With rappers, we may need choruses. They write their own stuff and sometimes we send them beats, and when they send back the song it's done. Some people you have to walk through the whole process.

*How does the team work? How do your similarities and differences balance each other out?*

**Waynne**: One of us starts the song. We make separate tracks. I'll pick a beat he made and turn it into an R&B or pop song, and he takes something I made and turns it into something else. Our similarity is that we aim for hit records. We're building a serious brand. A lot of artists today have an in-house producer and team, so if they come to us it's because they want us to take them to

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another level. Our differences: He grew up in Canada listening to West Coast stuff; I'm from Brooklyn and I lived the music. My family is Jamaican, so in my house we listened to reggae. Everyone on the block was of a different ethnicity, so whatever Brooklyn was doing I was into it hard. Swift and I broke into the two sides of hip hop and we're constantly learning from each other. Our different perspectives of hip hop come together. Hip hop is pop now; it's edgy and street. What happened between Swift and me happened organically and naturally; we weren't looking for it.

**Swift**: I help keep him focused. If it were up to him, we'd never finish a project. If it were up to me, we'd never start. We both make tracks, we both write. I do a lot of mixing. We focus on our strengths: I'm good at picking things out and arranging; he's good at songwriting; and we both pick up the trash at the end of the day. Our personalities mesh. I never wanted to partner up with somebody, but when we met it worked. Together, we doubled our productivity. Over the years, we've become best friends and have mutual respect for each other. Plus, we can take the stress off of each other. If one of us is having a bad day, the other can handle things.

***Producer Fred Wreck and Dirty Swift***

***Did you have any idea that "21 Questions" would take off the way it did?***

**Swift**: The nice thing is that we'd both been in the business a few years, had contacts and knew people in the game. It connected a lot of dots for us, but no one ever asked for another "21 Questions." That song got so big, I'd hear it in cars all day driving down the road and not realize it was our song. It was *the* song. I was riding the subway on the D train and I'd hear it on people's headphones. We knew we had to run with it. We did the

Tony Maserati (Black Eyed Peas)
Steve McMillan (Rod Stewart)
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label deal, began producing and we were prepared so that we wouldn't be one-hit wonders—otherwise, we'd lose it. We had to make it work. There was no choice.

***Technology allows you to collaborate with artists in different cities and countries. Isn't making records that way somewhat impersonal?***

**Waynne**: It allows us to do 10 things at once and maximize our time. Sometimes not having the artist in the room eliminates the B.S. We send out the track, they hear it, like it and that's it. We're very professional. We have a team of writers and musicians, and with technology we can narrow down what we like and be very honest and genuine. Sometimes when you're in someone's face, you're afraid to hurt their feelings if you don't like something or maybe the energy isn't good at your first meeting. If you're not together, there's a mystique. You have a song, a better sense of the artist and a stronger working relationship as you direct the flow of the music. We take elements of each other, the artists and ourselves. Electronically, you can do things across the world at lightning speed, and that's what Midi Mafia is about.

**Swift**: It can be impersonal, but if it's an A-list rapper and he's on tour, he can cut the record and all you have to do is mix. Others have to fly out and their schedules are crazy. If Bruce is in the UK, he can send files, I work on them and send them back without ever meeting the artist. It can be more efficient. It's give and take. It's better to be in the studio, but that can't happen all the time. As much as possible, we try to get them to come to us. We just built a facility, Ravenite Studio, in Hollywood. I like to mix in my room, but we do what we have to. It depends on the artist. It's nice to travel sometimes for a different vibe, but in L.A. I've got all my guys if I need a guitar player or choir.

***How does the process work?***

**Swift**: Basically, we set up an FTP server where we can upload, somebody else logs on, downloads and we work on tracks that way. It's the most cost-effective way. We set up different servers for different artists and projects, and with Pro Tools it's just computer files. Bruce can cut vocals in the UK and upload them, and I can mix. It's not complicated. It's like e-mail, but the files are too big, so on a server you can grab it.

***Let's talk about your studio and your gear.***

**Waynne**: We've got the new Structure [sampler workstation] by Digidesign because Swift mixes in Pro Tools and we use so many tracks, vocals and musicians that it's stable and not breaking down, so why go to a whole new system? Structure has a sample tank. We have an [Akai] MPC4000 that we're not hanging up. We're very, very heavy with virtual instruments: Spectrasonics' Trilogy, Atmosphere, a lot of soft synths. We embellish samples with strong instrumentation. We can't make music without soft synths. We have a custom system a friend helped us put together. Our on-hand musicians are all aspiring producers and understand each other's thought processes. We also need guys who can write music. We're really mixing a lot of variables.

The studio has four rooms. The main room is Swift's, and I run between the other three rooms working with writers, beats and trying to keep Swift stable! He's stronger when he's making music and mixing. He can be objective in his opinions. When he mixes, I let him do what he's doing and I don't listen until it's done. We give each other 100-percent freedom.

**Swift**: We change what we use all the time. I do beat programs directly into Pro Tools, and with Elastic Audio we can do everything in the box. I can do all my mixing directly into Pro Tools. We use Sony Oxford plug-ins, a Duende SSL and Waves

SSL. They give me the feel of the analog SSL I started out on. I can work on five things at the same time, and at the pace we work it's hard because we may get something from the UK [in] one night and they need it right away. We used to have to reset the boards; now, we just recall it in five minutes.

We have the MPC4000 and a rack of modules, but I use a lot of software plug-ins because they've gotten really good and flexible, and it's easy to have everything in one place. Pro Tools and the SSL stuff are important for me because I mix as I go, and hearing it already mixed is important. The MPCs are still important to us. The most important thing to me is having optimal sounds, drums and effects on my hard drive so I can grab what I need. How I get to it doesn't matter, whether it's Pro Tools or the MPCs. The computer stuff is always evolving and I look every six months to see what's new and think about it.

As far as mics, we're open. I use a Sony C800 and a [Neumann] U87 a lot, which a lot of people think is overrated, but it's my go-to mic—I know I won't get a bad sound. I have a couple of [AKG] 414s for acoustic guitars, an Avalon M5 preamp—which is really neutral and clean—and I run everything through an LA-2A compressor for the tube circuitry to warm up the vocals, like Shire, who has a lot of power and midrange in her voice. I don't use much outboard gear. I just keep it clean, put it into Pro Tools with no distortion and mix from there.

***What is your definition of a producer?***

**Waynne**: My job is to give the artists what they need to go to the next level. With a lot of producers, people come to them for their sound and it's like a cookie-cutter and a tug-of-war for control. Our job is to be there, and say, "This is what you do and what you want to do; now, how do we get you there?" We try to keep it as simple as possible. The blueprint that works is to be very melodic, have words that connect to the artist and make them part of the process. The goal is to have more records, create a sound and guide the album.

**Swift**: The term "producer" is used loosely lately with people dropping off files. I take the old-school approach. It's someone responsible for making sure the song happens from beginning to end, choosing where to record, who should be involved, do we need this or that, who is best to mix. I like to mix our stuff because I hear it a certain way in my head. It's someone who keeps an eye on the budget, makes sure the artist is comfortable. In hip hop, the artist makes the tracks. They come in with a vision and we want to see it through, collaborate and, if needed, create the best material for that artist. You adjust accordingly, and [in the] best case you're there to make sure the project starts and comes out right. There's nothing worse than starting out with a song and someone screws it up in the mix because he doesn't know your vision.

***What is the Midi Mafia sound?***

**Waynne**: I think our sound is melodic, and we make it in so many genres. I don't believe in regurgitating things. If you hear J-Lo and Midi Mafia, Fantasia and Midi Mafia, and 50 Cent and Midi Mafia and put them all next to each other, they're all different but all very melodic.

**Swift**: I always talk to Bruce about it because we don't use the same musicians, instruments or sound. Our sound is not having a sound, in a way. Maybe there's something to it because people say they know it's a Midi Mafia beat. Everything we do is musical. I don't know how people pick it out, but there is a common thread in what we're building—the writing, the beats, some of the drum sounds. It's production from the old-school approach: Mixing, writing, tracking and all that gives it a sound that will continue to grow. We work with so many

people, and the next hit could be pop, then rap and all over the place. People hire us to do what we do and expect the Midi Mafia stamp, but we respect what the artists do. It's their vision. We approach it from their perspective and what they need.

***When is it time to walk away, or say, "It's done"?***

**Waynne**: You're never done until it comes out. You'd be there forever. You always find different things and when it comes out, you say, "We should have done that." We're both perfectionists. When the label says, "We need that tomorrow, guys," then it's done!

**Swift**: Sometimes that's the hardest thing for me because I'm such a perfectionist. If I had all the time in the world, I would go through the process and listen over and over and fix what bothers me until nothing bothers me. With Pro Tools I can walk away, recall it and hear something different. It's a matter of interpretation. Sometimes people get married to the demos they record on a 2-track and—oh, man—the demo sounds like crap, but they like the feel and you have to figure out what they mean and duplicate it. Fantasia's demo mixes were so good that we didn't do anything but clean them up.

*Midi Mafia and Sonyae*

When you mix in the box, you mix as you go. The artist sings and the rough is 90 percent of the final mix. But if you record on 2-track, you've got to figure out how to get the raw feel and not overpolish. I pull up the demo when I'm mixing so that I can flip back and forth and preserve the elements they're attached to. With Fantasia, she cut it, Clive Davis loved it, so that's the final word. You don't change it. She's definitely a one-take vocalist. You get more for more options, but there's never a bad take with her.

***Do some artists and producers rely too much on technology?***

**Waynne**: Yeah, some people sit there and take a vocal and it's bulls*** because at the end of the day if the artist can't sing, the artist can't sing. Some are about the vibe and swagger, and technology can take all of that out.

**Swift**: Technology puts it in the hands of so many people that a lot of originality gets lost, but it exposes more people who might not be able to get into a studio and be creative. At the same time, it floods the marketplace with mediocrity. The cream rises to the top, but there's more to wade through. We avoid it by always finding something new and never relying on one piece; we're truly never stuck on one machine. I just find ways to make my life easier and work faster. I'm not married to anything, so going from ADAT to Pro Tools was an easy shift and going to soft synths from a rackmount was easy. You embrace what works for you and that's it. ■

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*Elianne Halbersberg is a freelance writer based in Georgia.*

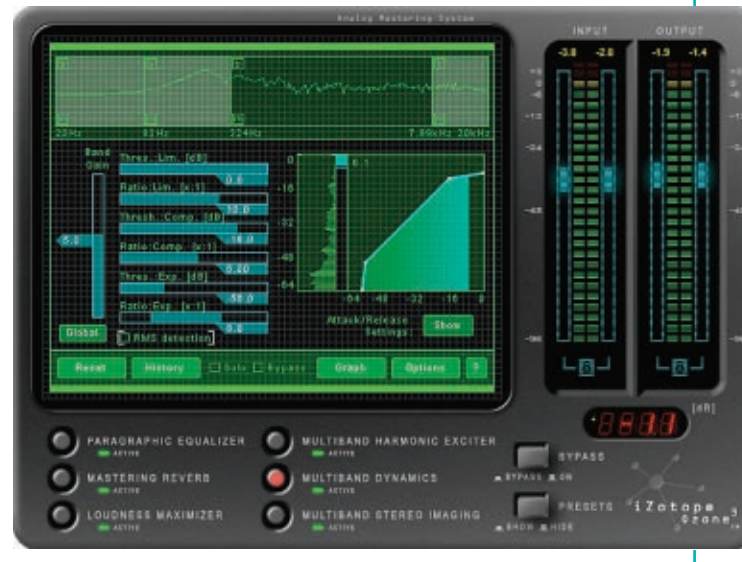
# Dynamics Processing Plug-Ins

## SOFTWARE TOOLS FOR CONTROLLING GAIN

By David Weiss

While most audio pros will state up front that there's nothing like hardware compressor/limiters, they can generally talk a lot longer about why there's nothing like a plug-in. "In the scenario where you have the choice of both, I'll always grab the hardware compressor/limiter because it's tactile: It has knobs, tonal qualities, transformers and good stuff," says Roey Shamir, a busy New York City–based producer/mixer whose credits include Al B. Sure!, Duran Duran, Ronnie Spector, Sting and more. "That said, if I'm mixing and trying to capture a sound that I can bring back tomorrow, along with 48 other tracks, with some form of compression, the plug-in is the answer."

Composer Wendell Hanes (www.volitionsound.com) writes regularly for national advertising campaigns, scores films, and is the author of the new book, *The 30-30 Career: Making 30 Grand In 30 Seconds—Producing Music for Commercials* (AuthorHouse, 2007). Hanes notes a number of factors that make plug-in compressor/limiters valuable to his everyday workflow. "As a composer, the sound of an instrument is just as important to me as the melody or line I am playing," he says. "The sound of an instrument influences what I play. Therefore, I try to nail the sound as I am creating melodies. I think plug-ins allow for greater experimentation, especially when time is of the essence. The ability to




*iZotope Multiband Dynamics, part of the Ozone 3 64-bit mstering system*

*Universal Audio Precision Bus Compressor for the company's UAD platform*

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**- Rob Cavallo**
***(Green Day, Kid Rock, My Chemical Romance)***

## *What else do they say?*

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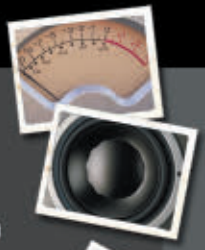

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A/B different settings quickly is very helpful when I am creating a score.

Prolific producer/musician/engineer Chris Parks (www.albrightmusic.com) cites several examples of go-to compressors in his own personal plug-in directory. "I like the [Universal Audio] LA-2A and LA-3A," he says. "It almost seems like a thickening agent: You get more low-mids or lows, it's a subtle effect if you don't really squash it, and it's more based on an amplifier than a compressor to me. It's this massive transformer you're emulating, and it gives you this weight."

Shamir makes frequent use of the compressors from Unique Recording Software when hitting a mix. "Most notably, the Console Strip Pro," he says, "the reason being that you can match it up so well with the proper EQ, put it before or after, emulate the mic pre front end and then have a way to saturate the front end. The key to compression is knowing your gain structures, when to overdrive or not, depending on how much second- or third-order harmonic distortion or fuzz you're going for. And especially with the URS Console Strip, you're able to do Distressor- and Variable MU–like stuff."

Before we venture into our list of compressor/limiter plug-ins, we should state that it includes only plug-ins that feature gain reduction as their main job set—not effects and other processors with embedded compressor/limiters.

Compression/limiting comes to the fore at **4Front Technologies** (www.opensound.com), starting with the freeware W1 Limiter, a brickwall limiter with threshold and release options. The XLimiter is a brickwall limiter with soft response and is powered by a special multistage algorithm that provides a very soft transition envelope; thus, rapid level changes at an extreme threshold level will not pump or distort as much as with other limiters.

**Anwida Soft** (www.anwida.com) offers the CX1V, a compressor/expander plug-in with an easy-to-use interface that drives a flexible, dynamic control algorithm. Features include look-ahead compression and hard/soft-knee control, making the plug useful in a wide range of applications.

At **BIAS** (www.bias-inc.com), one of the latest additions is Sqweez, a component of the company's Master Perfection Suite. Sqweez 3 and Sqweez 5 are multiband compression/limiter/upward-expander plug-ins with new linear-phase equalization algorithms. These offer graphic-per-band viewing/editing of the threshold and EQ, as well as linear-phase filters providing precise control over compression settings of three (Squeez-3) or five (Sqweez-5) frequency bands.

**Blue Cat Audio**'s (www.bluecataudio.com) Dynamics has been designed to serve as a complete dynamics effect processor: It can be used as a compressor, limiter, gate, expander or even a distortion unit. Users can manage the plug-in's dynamics response with a unique two-thresholds system. It includes an input filter and a sidechain filter to control the frequencies affected by the compression.

*Digidesign Smack! offers three compression modes.*

**Camel Audio** (www.camelaudio.com) holds water with CamelPhat, a "phattening" processor with a "coloring" multi-effect that is optimized for use on guitar, bass and drums, adding warmth, punch and presence wherever required. Other features include four distortion modules, three filters, two LFOs, an envelope follower and 128 categorized presets.

Check out **Chandler Limited** (www.chandlerlimited.com) to experience the EMI TG12413 limiter plug-in, which continues the tradition of EMI limiters started in 1954 with the RS114 tube limiter and continued with the RS168 Zener limiter in 1968. Two versions are included in the TG Limiter Pack: The 1969 version is the historically accurate take from the TG12410 Transfer or mastering desks, which has the original Hold control. The 2005 is closer to the Chandler TG1 hardware reissue, which exchanged the Hold control for a standard input control, and also features a 12dB higher input to the compressor.

**Digidesign**'s (www.digidesign.com) Smack! has three compression modes, ratios ranging from subtle compression to hard limiting, the ability to add analog-sounding distortion, external/internal sidechain processing with a sidechain EQ, multichannel support for all Pro Tools track types and full sample rate support, including 192 kHz. Impact is a console-style mix bus compressor with a flexible control set, support for Pro Tools multichannel formats and sampling rates up to 192 kHz, external sidechain input with key listen and a photo-realistic gain-reduction meter. Maxim is a professional brickwall limiter with full-color histogram, high-quality optimization of audio levels and advanced predicting peak limiting. From the Digidesign/Bomb Factory line emerges Classic Compressors BF-3A, offering peak-reduction controls, output gain, bypass and comp/limit switching. Then there's the Slightly Rude Compressor, a unique and aggressive plug-in that lets users tailor the sonic footprint via traditional and "rude" controls, introducing more punch to the signal. The Fairchild 660 and 670 Bundle is modeled after the rare and coveted Fairchild compressor/limiter, the 660 (mono) and 670 (stereo). The Focusrite d3 is modeled on the Red 3 dual-compressor/limiter and provides two separate plug-in configurations, allowing for maximum DSP efficiency in the TDM environment. The d3 can be used as an AudioSuite or RTAS plug-in for file-based or real-time host processing. The Trillium Lane Labs TL Aggro is an analog-modeled FET compressor with optional low-frequency compensation, linked stereo operation and a tube drive module.

**Drawmer**'s (www.drawmer.com) Dynamics TDM plug-in for Pro Tools is based on the Drawmer DL241 auto-compressor and DL251 limiter. Auto-gain adjusts the compressor's gain when the threshold or ratio controls are changed. The compressor/limiter section of TourBuss for Digidesign VENUE combines aspects of both ratio-style and soft-knee compressors, promising analog-style response. SDX100 for Soundscape digital audio workstations features many Drawmer innovations, such as frequency-conscious noise gating, program-adaptive expansion, "bootstrap" compression and zero-overshoot limiting.

At **Eventide** (www.eventide.com), the Omnipressor dynamics processor is available in the Anthology II bundle. The plug-in can compress and expand audio, and is capable of extreme compression, limiting, expanding and dynamic reversal.

**Focusrite** (www.focusrite.com) offers 40 different compressors via its Liquid Mix platform, offering DSP powerful enough to drive 32 tracks of vintage EQ and compressors simultaneously without taxing the host CPU.

**IK Multimedia** (www.ikmultimedia.com) is building its own fan base for T-RackS, a complete mastering suite that is

*IK Multimedia T-RackS mastering suite*

available as a plug-in and as the T-RackS 24 stand-alone package. According to the company, T-RackS' algorithms are based on true analog circuitry, with a familiar interface for controlling all five processors.

**iZotope** (www.izotope.com) has been making its own plug-ins for years, including the Ozone mastering system and the Trash distortion processor. The highly useful Multiband Dynamics plug-in, part of the Ozone 3 64-bit mastering system, features up to four bands of compression, expansion and limiting; analog-modeled and linear phase crossover filters; gain-reduction meters; and level histogram and spectrum analyzer. It supports resolution up to 64-bit, 192 kHz.

**Kjaerhus Audio** (www.kjaerhusaudio.com) offers the Golden Audio Channel | GAC-1, which gangs its processors in a serial fashion, including two equalizers, two compressors, a noise gate and a de-esser,

with a double EQ and compressor architecture. Next, the GCO-1 is a versatile compressor and expander plug-in featuring high compression and expansion rations, five envelope types and program dependency to avoid pumping. The GPP-1 is a high-quality soft-limiter/peak compressor designed for peak taming/compression during real-time tracking, sub-tracking and mixing—live or in the studio. The Golden Uni-Pressor | GUP-1 is a general-purpose compressor made for tracking, mixing and mastering apps, offering VCA and opto models that can be run in a Warm or Smooth mode, and a Program-Dependent Envelope (PDE) to decrease pumping and increase loudness. The MPL-1 Pro SE is a mastering limiter offering oversampled peak detection with look-ahead, smooth-hold function and four stereo meters with peak hold.

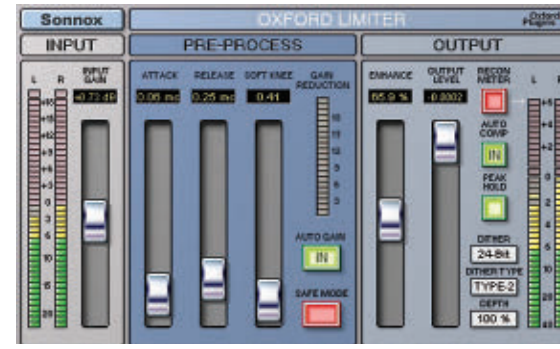
Visit **McDSP** online at www.mcdsp.com and check out Channel G, which is actually four plug-ins, including G Dynamics, a fully featured console-style dynamics section with an expander/gate, compressor/limiter and a versatile filter section; and G Surround Compressor, a compressor/limiter solution with compressor "sets" (L/R/C/Ls/Rs/LFE). All Channel G configurations feature calibration modes for music and post-production, as well as models of popular analog mixing desks. ML4000 is a high-resolution limiter and multiband dynamics processor designed for music, mastering, post and live sound, and features the ML1 mastering limiter and ML4 multiband gate, expander and compressor fed into the ML1 mastering limiter.

Compression/limiting reigns supreme at **PSPaudioware** (www.PSPaudioware.com), where three different plug-ins provide audio pros with some very useful tools. The latest is Xenon, a full-band, dual-stage limiter plug-in that was designed for controlling peaks and crest factors of the recording while preserving its spectral balance and clarity of the transients. VintageWarmer features digital simulation of an analog-style compressor, and offers single or multiband gain reduction. Unveiled as a high-fidelity stereo dynamics processor, MasterComp's double-precision (64-bit floating point) and double-sampled (Frequency Authentication Technique) processing offers transparency even at extreme compression settings and high sample rates.

**Massey Plug-Ins** (www.masseyplugins.com) has the CT4, which provides clean and smooth gain reduction with a little punch. Designed to have both electro-optical and vari-MU characteristics, users have noted that the CT4 is very good at preserving the "air" of the source material.

**Nomad Factory** (www.nomadfactory.com) is the source of Analog Mastering Tools, a high-resolution limiter and multiband dynamics processor that includes three plug-ins. The A.M.T Amp Leveler is a highly optimized, look-ahead brickwall limiter and level maximizer using a new proprietary algorithm, ensuring maximum loudness without digital-overclipping and low CPU consumption. The A.M.T Max Warm is a highly optimized, look-ahead brickwall limiter, EQ and level maximizer, with a unique approach to its dynamic signal analysis that maximizes the incoming signal level while limiting the ceiling peak levels. The A.M.T Multi-Max multiband peak limiter features a 3-band look-ahead brickwall limiter and level maximizer with separate gain controls for each band and five settings each for limiting and recovery. Also from Nomad Factory is the Blue Tubes Dynamics Pack, a collection of six plug-in processors for PC and Mac OS X that re-create the warm sound qualities of classic dynamic analog hardware with a simple and functional vintage-style interface, while offering low CPU consumption. It includes the BT BrickWall BW2S-XP brickwall compressor/limiter; BT Compressor CP2S analog tube compressor emulation; BT De-Esser DS-2S, a stereo de-esser with vintage controls and sound; BT Compressor FA770; BT ExpanderGate GX622; and the BT Limiter LM2S tube-emulation limiter.

**RNDigital** (www.rogernicholsdigital.com) offers a trio of products starting with Detailer, a stereo mastering process developed by Roger Nichols that offers a new way of increasing the perception of "detail" in the mid-level of a final mix while still allowing increased loudness. With Dynam-izer, multiband compression gains flexibility because users can break up audio levels into "zones" for precise control. For brickwall limiting and loudness maximization, Finis employs psychoacoustic limiting algorithms that analyze several aspects of the audio and—considering the way humans perceive volume levels—intelligently adjusts the audio levels to keep them under the maximum specified.




*Sonnox Oxford Limiter features an Enhance function.*

Time marches forward at **Sonic Timeworks** (www.sonictimeworks.com). The CompressorX is based on the company's award-winning compressor algorithm, with brickwall or soft limiting, hard- or soft-knee, and peak or RMS limiting. It has the ability to emulate the UREI 1176, dbx 165A, Manley Variable Mu or other digital compressors. The Mastering Compressor features soft-clip compression/limiting, 64-bit internal precision and loudness maximization for perceived gain increases of more than 10 dB. Two separate compression algorithms and improved dithering to 16-bit give you the tools necessary to fix poor, lifeless mixes.

**Sonalksis**' (www.sonalksis.com) SV-315 compressor is an analog-modeled dynamics processor featuring the State-Space System that models analog signal path characteristics into the plug-in's digital design. CQ1 is a multiband, frequency-selective dynamics processor, allowing independent compression or expansion of four freely adjustable filter bands.

*TC Electronic MasterX3—an incarnation of the Finalizer*

The resident smart guys making Oxford plug-ins at **Sonnox** (www.sonnoxplugins.com) present the Oxford Limiter, which employs oft-used parameters and an Enhance function, providing the sample-value limiting needed to avoid overloads in digital workstation environments.

**SSL** (www.solid-state-logic.com) offers a range of plug-ins for its Duende platform. These include the SSL Dynamics, offering a variable compression ratio from 1:1 to infinity:1; variable threshold and release; auto-sensing attack time; and peak and RMS detection. Also available for the Duende is the Stereo Bus compressor modeled from the SL 4000 G Series. The venerable VST Listen Mic Compressor plug-in is also available from the company's Website as a free download.

There are multiple compression/limiting possibilities within the PowerCore platform from **TC Electronic** (www.tcelectronic.com). Five-Band Dynamics for PowerCore offers five bands, different filter slopes and double-precision processing for even more detailed access during the mastering process for CD and broadcast. The Fabrik C is a full-blown EQ, de-esser and 3-band/full-band compressor in a single

***Unique Recording Software URS 1970 Classic Console Compressor***

plug-in for all of the qualities of a channel strip. The MD3 stereo mastering package for Pro Tools and PowerCore includes two pristine algorithms, MD3 multiband dynamics and a brickwall limiter. MD3 offers dual-mono and stereo dynamics processing in three frequency bands with a true sidechain split-structure. Brickwall Limiter gets rid of the signals known to generate distortion in consumer CD players, radio processors and data-reduction codecs. The Tube-Tech CL 1B emulation plug-in brings the analog sound of the CL 1B compressor/limiter to the PowerCore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**Unique Recording Software** (www.urs plugins.com) offers a wide range of compressor/limiters, including the URS 1970 Classic Console Compressor, which digitally re-creates transformer input and diode bridge gain-reduction amplifier characteristics. The URS 1980 Classic Console compressor takes the mimicking up a decade by emulating the IC input and voltage-controlled gain-reduction amplifier (VCA) characteristics of popular '80s desks. Lastly, the URS 1975 Classic compressor takes the feed-forward 1975 VCA compressor into consideration with fully adjustable knee, emulating the transformer input and voltage-controlled gain-reduction amplifier characteristics.

**Universal Audio** (www.uaudio.com) offers a range of products for its UAD platform, including the Precision Bus Compressor, a dual-VCA-type dynamic processor that yields transparent gain-reduction characteristics specifically designed to "glue" mix elements together for a cohesive and polished sound typical of master-section console compressors. The Precision Bus Compressor's control set includes threshold, ratio, attack and release, with all parameters specifically tailored to bus compressor usage. The famed 1176LN is available as a classic analog emulation. Originally designed and built during the 1960s, the 1176LN was the first to use a Field Effect Transistor (FET) as a voltage-controlled variable resistor, and that innovation was key to the product's unique character. An in-depth analysis of the 1176LN's "personality" allowed Universal Audio to methodically reproduce those results within a plug-in architecture. The 1176SE is derived from the 1176LN, providing sonic characteristics similar to the 1176LN but with significantly less DSP usage. The 2-channel Fairchild 670 is modeled after Allen Sides' favorite unit from Ocean Way Studios. The Teletronix LA-2A leveling amplifier is a digital copy of the LA-2A, purportedly upholding all of the original's classic, analog characteristics.

Also from Universal Audio, the LA-3A emulation provides that unit's unique compression characteristics and sonic signature within a DAW. The Neve 33609 is derived from the original Neve 2254 compressor, circa 1969, which uses a bridged-diode gain-reduction circuit and a range of custom

transformers. The UA Precision Multiband is a specialized mastering tool that provides five spectral bands of dynamic range control; compression, expansion or gate can be chosen separately for each of the five bands. Next up, the Precision Limiter is a single-band, look-ahead brickwall limiter made primarily for use with program material. The plug-in achieves 100-percent attack within a 1.5ms look-ahead window, which prevents clipping and guarantees zero-overshoot performance.

**Wave Arts**' (www.wavearts.com) TrackPlug is an all-in-one channel strip processor featuring a 10-band EQ, brickwall filters, dual compressors, gate, sidechain EQs, clean/vintage compression modes, a peak limiter and impressive CPU efficiency. MultiDynamics is a multiband dynamics processor useful for mastering, noise reduction, volume maximization, sound design and more, with up to six independent bands available with a full-featured compressor or expander/gate per band. FinalPlug 5 is the company's professional peak limiter/volume maximizer, featuring extensive bit-depth truncation and dither options, along with noise-shaping options and a limiting algorithm with auto-release.

*Wave Arts TrackPlug channel strip processor*

**Waves** (www.waves.com) continues to up the ante with its expansive, popular line of plug-in compressor/limiters. The list of its compressor offerings is long, beginning with the stereo API 2500, the three-in-one AudioTrack, C1 Parametric Compander, C4 Multiband, vintage-inspired De-Esser, Linear Phase Multiband, MaxxVolume, guitar-oriented Renaissance Axx, Renaissance Channel, Renaissance Compressor, Renaissance De-Esser, Renaissance Vox, Solid State Logic 4000 Series (emulating the SSL E-Channel), SSL G Master Bus Compressor, 2254-inspired V-Comp, DeBreath, TransX and C360° Surround Compressor. Waves' limiter plug-ins include the L1/L2/L3/L3-LL Ultramaximizers, L3/L3-16/L3-LL Multimaximizers and L360° surround limiter. ■

*David Weiss is* Mix*'s New York editor.*

*Rising above the New York City skyline is HighLine Ballroom; its Yamaha PM5D-RH board has mixed McCartney, Santana and more.*

PHOTO: CM PHOTOS

# UPWARD MOBILITY in the CLUB WORLD

BY STEVE LA CERRA

Maybe it's because high-end audio technology is finally reaching lower price points or simply because generations of outdated, ratty P.A. systems are falling apart, but the result is the same: The overall quality of installed club and theater systems is improving. As line arrays replace conventional boxes and digital consoles become the norm, more acts are content to leave their systems in the truck and run the house rig. We took a sampling of rooms across the country and found some pretty serious audio systems that have become a permanent part of the club tour circuit.

## HARD ROCK LIVE BILOXI

First stop is Biloxi, Miss., where after surviving the ravages of Hurricane Katrina, the Hard Rock Live Biloxi built a new room and hired Orlando, Fla.–based Technomedia to install the new L-Acoustics P.A. According to production manager Maxie Williams, who has toured with Marilyn Manson, Stone Temple Pilots and Alice in Chains, "When they hired me, they came to me with the equipment list and asked if I thought it would work for this room. It was awesome, huge overkill for the room! I told them not only will it work, but it will be phenomenal because I won't have engineers coming in here starved for headroom."

The new system comprises 13 V-DOSC line array cabinets per side, but the room's size and capacity (1,500) requires only eight boxes per side. "We have seven V-DOSC front-fills on the downstage edge, plus fills that underhang the balcony, time-aligned to the main P.A.," he says. "Everything is powered with the L-Acoustics 48A amps made by Lab.Gruppen, so there's plenty of power. Stage wedges are Clair 12AM with the proprietary QSC/Clair power amps. Sidefills are Clair R4s and the subs are Clair, and we have a complete set of Shure Beta Series mics.

"I have a rack built into the amp room for the 16 monitor mixes," Williams continues, "and it's set up so that you can do soft patches at the monitor desk. Most of the system is on fiber. The only place we use copper is from the stage to the mic preamps. We have two 48x16 snakes made by Optocore, which include the mic preamps and A/D converters. Once the signal has been converted to digital, it goes directly to the cards in the back of two Yamaha PM5Ds—one for house and one for monitors. Optocore makes its own expansion card for the 5D, so we load the software, pop the cards in and the 5Ds

Maxie Williams (left) and production assistant Nathan Slade of Hard Rock Live Biloxi stand in front of the Yamaha PM5D.

The Memorial Auditorium features a Neo GEO array, courtesy MSM Systems' president, Kent Clasen, who designed/installed the upgrade.

PHOTO: JOHN SUKMANN

# A New Generation of Mid-Size P.A. Systems

remotely control the Optocore pre's."

Williams admits that the system did need a few adjustments. "Originally, the floor was painted concrete. It was flooded by Katrina, so I thought if we ever come back after Katrina, we ought to put a light carpet in here. They ordered a shallow grade of indoor/outdoor carpet for the room. A lot of the room was treated with 4x8-foot sections of 2.5-inch insulated acoustic panels, but the front of the balcony was Sheetrock: hard and reflective, and you'd get slap from the balcony back to the deck. I suggested we cover the entire front of the balcony—the surface that faces the stage—to get rid of the reflections. It's those little things that really help the engineer. When the room is empty during soundcheck, it sounds pretty good, and with 1,500 people in here it sounds even better.

"The coolest thing is in the morning at load-in to watch the house and monitor engineers walk in the door. Every engineer says the same thing. They look left and then look right on the deck and invariably say, 'Dude, you think you got enough P.A. in here?!'"

## HIGHLINE BALLROOM

Meanwhile, in a green space 30 feet *above* the streets of New York City in an area known as High Line Park, a new venue called the HighLine Ballroom has hosted acts such as Paul McCartney, Carlos Santana, Amy Winehouse, Mos Def and James Blunt since opening in April 2007. Outfitted with a Yamaha PM5D-RH at FOH and a Yamaha M7CL desk at monitors, the venue's P.A. was intended to accommodate a wide range of artists. Amit Peleg is the president of Peltrix (Purdys, N.Y.), and was responsible for the new system's design and install.

"We chose JBL VerTec speakers, dbx DriveRack processing, Crown i-Tech amps and Yamaha PM5D-RH [FOH] and M7CL [monitor] consoles because, based on artist riders from all genres of music, those are the most frequently requested brands and models," Peleg says. "You can never please everybody. But with these models, we hit the majority. And if those brands are not their first choice, most can live with it. It is virtually impossible to hang or stack 'guest' P.A. here because of either weight-load limitation or stage sightline, so we had to install a system everybody could work with."

"We installed a very flexible wiring system that allows guest engineers to insert their own consoles, both for FOH and monitors, without affecting the house configuration," he adds. "In addition, a recording truck can be parked outside and be up and running with a single snake run in a few minutes."

The house array is all JBL VerTec, including six VT4888DPs, four ASB6128Vs and two ASB6128 subs, as well as VP7212/95DPAN fills; delayed balcony arrays comprise two VT4888DPs and two VT4882DP subs. Outboard gear at the house position includes a Tascam DV-RA1000 and two dbx DriveRack 4800s; an additional DriveRack 4800 located in monitorland provides processing for the sidefills and drum mix. Processing for the monitor wedges is via DSPs built into the Crown iTech amps.

## MEMORIAL AUDITORIUM

Halfway across the United States, the Memorial Auditorium (Pittsburgh, Kans.) recently received a system overhaul, which had not been updated since 1984. The new system was designed and installed by MSM Systems Inc. in nearby Lawrence, Kans. According to

PHOTO: ANTHONY GORDON

*Steve Bauer spec'd new gear for the Fox Theatre (Redwood City, Calif.).*

MSM president Kent Clasen, "The community is very active in theater, and now they can increase the level of their music productions. We're very pleased with the Nexo loudspeakers, and the Yamaha M7CL-48 [board] with the digital CobraNet transport works extremely well and has the lowest noise floor of any system I have heard."

The 16 Nexo GEO S8 line array speakers are powered by three QSC PL380 amps. "The small size of the GEO S8 is conducive to the sensitive nature of the aesthetics in many performance spaces," he explains. "They are only 16 inches wide, so usually the first time people see them, they say, 'Are those little things the new speaker system?' Then when they hear them, they are amazed. We still specify a long enough array to get reasonable vertical control of the lower frequencies."

The main stereo L/R array comprises seven 5-degree vertical cabs with a horizontal pattern of 80 or 120 degrees. One 30x120 cabinet provides downfill, and two high-power QSC PL380s provide amplification for the main arrays. Signal processing for the mains is via the Nexo NX242; a QSC PL380 provides amplification for the existing EAW SB1000 subs. CobraNet was chosen to reduce ground noise between the console and amp room on the second floor, as well as to lower costs of cable runs.

## THE FOX THEATRE

Boasting a digital audio system that can be used with equal success for sound reinforcement, digital recording and digital radio simulcast is the Fox Theatre in Redwood City, Calif. This system was spec'd by Steve Bauer, owner of Audio Video Innovations (also in Redwood City) and is built around a 48-channel Digidesign VENUE augmented by a Pro Tools HD3 Accel recording rig with an extensive set of plug-ins.

Bauer explains that he met with a bit of resistance to installing a digital system in the theater. "I design and install audio distribution systems on a daily basis, so the benefits of digital technology are clear to me," he says. "But many sound engineers had the attitude of, 'This will never fly. I learned on analog and that's what I'll continue to use.' In two years, what a change. Now, 92 percent of the acts coming in here embrace the technology once they see what it can offer them.

"The Pro Tools HD system gives engineers the ability to record a soundcheck and play it back while the musicians are off having dinner," he continues. "It allows the opportunity to experiment with different plug-ins and compare them for sonic attributes. When Randy Newman came in here, we used two vocal microphones and four piano mics. Once we got his wedges to where he was happy, soundcheck was over. Recording the soundcheck gave us the ability to sit there and try different plugs, like tape saturation or various compressors for his lead vocal mic. It sounded fantastic, and at the end of the night Randy said he felt like he was performing in his living room—a great compliment to us. We had the ability to really fine-tune the sound, but he didn't have to sit around for hours waiting for us. It's a tremendous advantage."

PHOTO: CM PHOTOS

*Amit Peleg, president of Peltrix, designed/installed HighLine's new system.*

That's not the only muscle that digital audio is flexing at the Fox Theatre. "The theater has a complete digital infrasructure," continues Bauer. "By interfacing the VENUE with a wireless Ethernet router, engineers can mix their show via laptop from any seat in the house. Location of the front-of-house mix position is somewhat of a compromise. Do you give up those prime seats for a visiting engineer? Or do you compromise the position of FOH so that the best seats can be sold to patrons. Now, there is no compromise. You can take the laptop to the sweet spot and do anything you need to correct the mix."

Bauer has also observed that when it comes to providing content, "Digital is king. The Fox has the capability—while doing a show and mixing—to send a 2-track feed through the VPN [Virtual Private Network] so that a truck from a content-delivery company like XM or Sirius Satellite can park nearby the venue and pick up the VPN. They can send a simulcast for a national act performing at the theater without laying down a cable to access the audio stream. In addition, recorded audio can be transferred via DigiDelivery for acts who want to have their tracks instantly delivered digitally to the studio of their choice for remix and mastering.

"Many of the acts from the late '70s and earlier do not have much material in digital format," he continues. "A house system like ours can create content for them while performing a show. House mix CDs or USB sticks could even be sold after the show to the audience. In the near future, we see this expanding to cell phone delivery, as well as e-mail delivery. Digital technology is here to stay, and to be an early adapter to 'digital content delivery' is really great. I feel it gives us an edge as the front-runners as more and more acts embrace the future.

"We also rent the Fox to acts that are rehearsing for upcoming tours. By using the VENUE board, Pro Tools and a USB stick, the engineer can tweak via virtual soundcheck and create snapshots of all the mix settings on a per-song basis, including effect and MIDI triggers, as well as all EQ and gain structure. Once satisfied with the overall mix, the engineer can create a snapshot and save it to a memory stick. With the VENUE applied to the act's rider, they simply take the memory stick to each show and load it in. The amount of pre-show work required is basically reduced to stage setup and room EQ."

Of course, the Fox also incorporates a first-rate P.A. built around 16 JBL VerTec VT4888 line array boxes and four JBL 4880 subs for the house. The monitor system features a Soundcraft MH4820 console, and EAW SM200s and SM500 monitors. All power is supplied by various vintage Crest amps.

## THE NEXT PERFORMANCE?

It's clear that the future of live audio lies in the digital realm. It's taken a long time for that technology to trickle into the club and theater market, but now that we're seeing digital consoles in the $10,000 to $15,000 range, we can expect that those old analog workhorses will be replaced with their PCM counterparts, enhancing audio quality and making the lives of traveling engineers easier. We'll also see a "retrofit" of smaller venues with digital infrastructure, facilitating digital networks akin to the one at the Fox Theatre. Technology will not only raise the quality level, but will make the audio datastream more accessible for storage, transfer and delivery to content providers. ■

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*In addition to being* Mix*'s sound reinforcement editor, Steve La Cerra mixes front of house for Blue Öyster Cult.*

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BY THE MIX STAFF

# THE Pro/M.I. Connection

## Product Hits of Winter NAMM

Looking for the place where pro meets M.I.? NAMM is it. With an exhibitor list featuring names like API, Universal Audio, Focusrite, Crest, QSC, Studer, Manley, Crane Song, Rupert Neve Designs and Neumann, you might think you were at AES, but all were at NAMM.

Perhaps this year's theme was product downsizing, as top-end companies showed lower-priced gear such as Solid State Logic's Duende Mini, Waves' $99 iGTR guitar processor and Euphonix's Artist Series mix controllers. At the same time, affordable, high-res pocket recorders were everywhere, from Edirol, Kaysound, Korg, M-Audio, Marantz, Olympus, Samson, Sony, Tascam, Yamaha and Zoom—offering a complete 24-bit/96kHz remote rig for as little as $299.

### IPOD-IFICATION

Apple's iPod continues to show its versatility via interesting, new third-party add-ons. The **Alesis** (www.alesis.com) MultiPort is a pro-grade USB interface with XLR mic and ¼-inch I/Os, transport control keys and the ability to record directly to a computer—or iPod. **Samson**'s (www.samsontech.com) StudioDock powered monitors have something extra—a built-in iPod dock and USB interfacing. And **Numark** (www.numark.com) is now shipping its Fit for Sound, a rackmount iPod dock with RCA/XLR outs and large transport keys.

### MIC MANIA

NAMM was also the launchpad for high-end products. **JZ Microphones** (www.jzmic.com), a new company formed by mic designer Juris Zarins, debuted its $1,850 Black Hole multipattern studio mic. The mic's center hole accommodates a spring-loaded shock-mount; inside you'll find Class-A discrete electronics and back-to-back condenser capsules with unique variable sputtering.

**SE Electronics** (www.seelectronics.com) announced a range of Rupert Neve Signature Series mics under the SE name. Due to ship in late summer, the first entry is an active ribbon design using discrete circuits and custom transformers designed by Mr. Rupert Neve. Following the new ribbon will be large-diaphragm tube and solid-state condensers, with all three sharing a look that combine retro with modern industrial chic.

**Groove Tubes** (www.groovetubes.com) lived up to its moniker with the new Velo 8T ($1,199) tube ribbon mic. It comes with a spare engine that you can easily swap out should the ribbon get damaged. The Genesis ($799) mic from **MXL** (www.mxlmics.com) is a large-diaphragm, cardioid condenser featuring a 1.2-inch capsule with a 6-micron, gold-sputtered diaphragm; Mullard 12AT7 tube; and phantom powering. **Violet Design** (www.violetusa.com) launched The Wedge, a condenser model with a long, sleek dark-red body housing a large, dual-diaphragm cardioid capsule.

Everybody seemed to have new USB mics, but we found a couple faves. **Audio-Technica**'s (www.audio-technica.com) AT2020 USB is a version of its popular AT2020 studio condenser, but with USB output and a mini-tripod stand. The **Audix** (www.audixusa.com) USB 12 features a mini-condenser capsule set into a gooseneck desk stand with a USB output.

**AKG** (www.akg-acoustics.com) announced its new D4, a short-body dynamic designed for high-SPL instrumental miking. Its name should not be confused with the Audix D4, a different short-body dynamic designed for high-SPL instrumental miking.

*MXL Genesis*

Goin' stereo? **Sony**'s (www.sony.com/proaudio) $449 ECM-957PRO is a battery-powered stereo/M-S mic. Its slick design has two elements—one is rotatable to make the mic front- or side-address and change the directivity from 90 to 120 degrees.

*Akai MPC5000*

**Avantone** (www.avantelectronics.com) showed two stereo mics: the $599 multipattern CK40 and the $349 single-pattern CK33. The capsules rotate to change the stereo pattern.

**RØDE** (www.rodemic.com) previewed a high-performance shotgun mic (shipping around NAB) that slides into an indestructible, aluminum transport case that resembles a Maglite flashlight and is ideal for location work.

## STUDIO ESSENTIALS

**Euphonix** (www.euphonix.com) created a lot of buzz with its MC Control ($1,499) and MC Mix ($999) DAW controllers. (See the "Technology Spotlight" in last month's issue.) MC Control has eight rotary encoders, a touchscreen, jog wheel, four faders and more. MC Mix offers eight faders, dual-level scribble strip and eight rotary encoders. Each unit can stand alone or combine to create a large controller.

**MOTU** (www.motu.com) ran packed demos of its Digital Performer 6 DAW/sequencer software. The $795 program boasted, among other things, track comping, multi-mono plug-ins, bounce-and-burn to CD and a streamlined GUI.

**Akai**'s (www.akaipro.com) new MPC5000 ($3,499) features 8-track disk recording, a 20-voice analog synth with arpeggiator, 64-voice drum/phrase sampler, 12 Q-Link controllers, onboard effects, internal 80GB hard drive, large 240x128 backlit LCD and optional CD-R/DVD drive.

Several companies showed signature versions of earlier products. **Universal Audio**'s (www.uaudio.com) LA-610 Signature Edition ($2,399) is a limited-run version of its best-selling LA-610 channel strip, signed by Bill Putnam Jr. and featuring hand-selected parts. **API**'s (www.apiaudio.com) $2,300 550A Saul Walker Edition EQ boasts a slick buffed aluminum front plate, point-to-point wiring and hand-picked components.

**Millennia**'s (www.mil-media.com) HV-3R remote-controlled, 8-channel preamp is shipping soon. In addition to its included AE-Logic Windows/Mac OS X software offering Ethernet control of up to 99 units, the HV-3R has awesome specs, with a bandwidth beyond 300 kHz and near-nonexistent noise (-133 dB EIN).

Named after company founder Dave Derr, **Empirical Labs**' DerrEsser (dist. by Wave Distribution, www.wavedistribution.com) is a 500-rack-compatible de-esser with HP and LP filters, HF limiter and bypass controls.

**Avantone** (www.avantelectronics.com) introduced powered versions of its MixCubes ($359/pair), sporting 35-watt Class A/B amps. These stylish "Auratones for the new millennium" have single 5.25-inch drivers.

NAMM also had new studio acoustics products. **KRK**'s (www.krksys.com) $599 Ergo is a room-correction unit that can be used with any speakers; with onboard DSP, it's independent of a host computer. Ergo offers switching and separate correction for two sets of speakers and a large analog speaker-level controller. **Auralex** (www.auralex.com) debuted its Eco StudioFoam, made with 60-percent–renewable soy-based material. Keeping with the green theme, **MSR** (www.msr-inc.com) unveiled its wood Dimension4 diffuser panels, providing hemispherical or planar 3-D/2-D-field sound-reflection scattering for recording/performance spaces.

**Primacoustic** (www.primacoustic.com) now offers its Recoil Stabilizers in six sizes. The units sit under your monitors, providing a rock-solid base that translates into better audio. Even on the show floor, stereo image and low-frequency information were more centered and full.

## PLUG-INS, AND OUTS

**Steinberg** (www.steinberg.net) announced software developer kits for its next-generation VST3 protocol. Now implemented in Cubase and Nuendo, VST3 offers enhanced CPU efficiency, sample-accurate automation, the ability to assign audio inputs to VST instruments and much more.

**Peavey**'s (www.peavey.com) $299 ReValver Mk III guitar amp–modeling software is amazing, with unprecedented control over amp tonality, gain structure and coloration. Windows or Mac VST host/Audio Units users can click through presets or get tweakoid, selecting different tube combinations or adjusting parameters such as plate voltage, cathode/grid resistors, bias voltages and more.

**SSL**'s (www.solid-state-logic.com) Duende Mini offers up 32 channels of console-grade SSL dynamics and EQ processing. The $799 system is PC/Mac compatible, works with all popular DAWs and is upgradeable.

**TC Electronic**'s (www.tcelectronic.com) PowerCore X8 ($1,745) has twice the power as the company's original PowerCore. Compatible with VST, Audio Units and RTAS formats, its 14 included plug-ins can run multiple instances with a near-zero hit to your CPU.

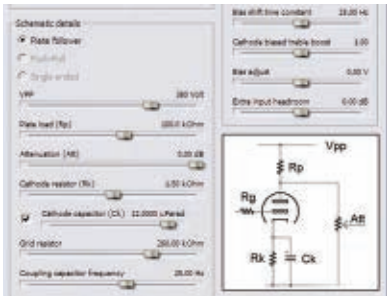
The Sonic Maximizer plug-in from **BBE Sound** (www.bbesound.com) is compatible with all Audio Units, RTAS and VST-host apps, and features programmable

## Certified Hits

MIX CERTIFIED hit

Here are our picks for NAMM's Top 10 hits, listed alphabetically:

Akai MPC5000
EastWest Fab Four Virtual Instruments
Euphonix Artist Series
KRK Ergo
MOTU Digital Performer 6
Peavey ReValver Mk III
Primacoustic Recoil Stabilizers
Sonnox Suppressor
Spectrasonics Omnisphere
SSL Duende Mini



*Peavey ReValver Mk III amp-modeling software*

patch memory. The $129 plug works across Mac OS X and Windows XP/Vista.

**Eventide**'s (www.eventide.com) $199 E-Control RTAS plug-in offers Pro Tools control of its H8000FW, H7600 and Eclipse hardware processors, letting you easily bring your hardware processors into the digital realm and save settings to the session.

The Oxford SuprEsser from **Sonnox** (www.sonnoxplugins.com) is a $315 de-esser and dynamic EQ plug-in providing a way to detect sibilance and other nasty track artifacts quickly and then render them nonexistent.

**Waves** (www.waves.com) introduced the Studio Classics bundle with modules and strips from legendary studio consoles—the SSL 4000, API and the V Series—allowing users to create the console of their dreams.

### INSTRUMENTS—REAL AND OTHERWISE

After more than a year of work and planning, the Fab Four Virtual Instrument collection from **EastWest** (www.soundsonline.com) puts the kinds of instruments and studio gear used by The Beatles into the hands of composers. The $395 collection has newly recorded multisamples of a million dollars' worth of rare period guitars, basses, drums, amps and keys recorded through vintage mics and EMI console/preamps to a Studer J-37 tube 4-track. It also includes a software version of ADT (Artificial Double Tracking) with built-in tape simulator.

**Spectrasonics** (www.spectrasonics.net) previewed its Omnisphere virtual instrument, combining a variety of hybrid, real-time synthesis techniques; a huge "psychoacoustic" sound library; and innovative features never seen on any hardware or software synth. This $499 cross-platform (Windows XP/Vista and Mac OS 10.4 and higher) synth is slated for September release.

The real thing: The $2,595 Minimoog Voyager OS (Old School) from **Moog Music** (www.moogmusic.com) is an analog synth with no digital functions—no program memory, no fancy arpeggiator—just the classic sound and hands-on controllability of Moog's Model D. It does everything the vintage Minimoog did in an all-new package.

Original Prophet-5 designer **Dave Smith** (www.davesmithinstruments.com) showed the Prophet '08 ($2,199), an updated version of the Sequential classic with an all-analog signal path, eight-note polyphony and five-octave keyboard with velocity and after-touch.

**P5 Audio** (www.p5audio.com) was rockin' with its Loop sets. The numerous collections include guitar and bass loops, RnB construction loop sets, individual loops, hip-hop construction loop sets and rock hybrid construction loop sets.

*Spectrasonics Omnisphere virtual instrument*

### LIVE SOUND AT NAMM

NAMM continues to be a major springboard for sound reinforcement products. **Digidesign** (www.digidesign.com) showed Mix Rack, an affordable hardware option for VENUE systems combining all stage, local audio I/O and DSP processing into a single 11-space rack. Just add a D-Show and D-Show Profile console, and you're ready to roll. **Peavey** (www.peavey.com) debuted its new large-format Versarray 212 line array rig. **Mackie** (www.mackie.com) updated its best-selling speakers, now known as the SRM450 V2 and SRM350 V2, with lightweight neodymium drivers and onboard Class-D bi-amplification, resulting in a 20-percent weight reduction.

**Da-Cappo** (www.da-cappo.com), an Australian company distributed by Hosa, showed waterproof and EMI-resistant ear-mount, headset and lavalier mics with adapters for hardwired use or wireless beltpacks. **Violet Design**'s (www.violetdesigns.co.uk) The Pearl line of handheld mics have discrete Class-A electronics and an optional reflection ring that can change the tonal and directional characteristics. **X2 Digital Wireless** (www.x2digitalwireless.com) expanded its offerings with the XDR955 handheld wireless with an Audix OM3 capsule.

**Lectrosonics** (www.lectrosonics.com) and **Heil Sound** (www.heilsound.com) teamed up to create pro wireless products. Lectrosonics' UTPR20 combines Heil's PR20 dynamic capsule with Lectrosonics' UT Series digital hybrid wireless transmitter. And after months of beta tests with top acts, Bob Heil is shipping the wired PR35 ($250), which puts the element from his PR30 studio dynamic into a handheld body.

### MORE TO COME

We'll present more highlights from NAMM in our monthly new products sections and online at www.mixonline.com. Meanwhile, Summer NAMM returns to Nashville, June 20 to 22. See you there! ■

## Hot Picks You Might Have Missed

**Audix**'s (www.audixusa.com) CabGrabber ($59) is an adjustable arm offering secure, no-stand mic placement on your guitar amp/cabinet.

**Novation**'s (www.novationmusic.com) Nocturn ($99) puts fast, intelligent control of automatable plug-ins in all DAWs from a USB remote with nine touch-sensitive rotary encoders with LED positional rings.

**SM Pro Audio**'s (www.smproaudio.com) iNano $69 passive volume controller is an easy, clean way to control master volume—ideal for DAW users.

**Tech 21**'s (www.tech21nyc.com) Sans Amp Character Series stomp boxes each emulate a different amp type—Fender, Vox, Marshall and Mesa-Boogie—and are designed for live or studio use.

**Waves** (www.waves.com) iGTR ($99, right) keeps with NAMM's "mini" theme, offering the sounds of its acclaimed guitar amp/effects modeling in this cigarette pack–sized processor.

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BY BARBARA SCHULTZ

# Rudy's Studio

## Mark Obermeyer's One-Stop, Hard-Rocking Shop

Let's get this out of the way: Rudy is a little dachshund, not an engineer. Mark Obermeyer, the owner of Rudy's Studio (and of the dachshund), is a musician/engineer/producer and a champion of Denver's hard-rock scene. During the past 10 years, he has recorded more than 100 local bands in his studio (www.rudysstudio.com). He says he and his associate, Justin Preston, make it their job to help those bands grow. "We're into producing bands and challenging them to be more when they leave here than they were when they came in," says Obermeyer.

Like many project studio owners, Obermeyer's background includes playing in bands. He was also enrolled in University of Colorado at Denver's Recording Arts program. "I was lucky to take classes with Roy Pritts and Rich Sanders," Obermeyer says. "Those guys taught me so much about recording—digital and analog. Roy worked at Caribou [Ranch Studio], and he brought a lot of gear down to UCD when Caribou closed. So we were lucky enough to use that Neve board from Caribou."

Obermeyer opened his own studio in 1997. The connections he developed as a musician and as a student gave him a built-in client base from the start. Within a couple of years, he had developed a working relationship with Preston, a fellow rock musician/engineer who had been doing mastering projects in his own facility, Dragon Studios. In 1999, Preston began working primarily with Rudy's. "When I started the studio, it was just a little demo studio," Obermeyer recalls, "but when Justin came along, it grew. He had a Pro Tools rig when I was still fussing with [Tascam] DA-38 machines."

Preston is also skilled at designing CD art and Websites. "We're a good team," Preston says. "We fill in each other's gaps in terms of our talents."

Obermeyer says he and Preston have completely gutted Rudy's Studio three times since he started. The latest redesign happened two years ago, when they upgraded to Pro Tools HD3. Obermeyer hired Alan Baca of Pro Audio Services to help refurbish the rooms. In addition to the new Pro Tools rig, Obermeyer and Preston use API, Grace Design and Great River mic pre's, and API analog summing.

"Things remain really clear and punchy with the analog summing," Obermeyer says. "The API is about as punchy as you can get, which is great for the hard-rock that we do."

Obermeyer also swears by his ADAM Audio S3A monitors: "Anything you mix with those translates well to other systems, and they're not fatiguing at all. That's important with the kind of work we do."

Rudy's studio itself is divided into four spaces, the largest of which is the 14x15-foot control room. Three small, adjacent recording spaces range from most to least live acoustically. Two of the recording rooms have a window between so that bandmembers can cue each other visually. There are no windows from Obermeyer's control room into the tracking rooms, but he works around that with closed-circuit TV cameras. "But lots of times, we'll track in the control room," Obermeyer says. "Sometimes we'll do guitar layers and bass in the control room. Or we'll track vocals in the control room if a singer is struggling with headphones."

***Engineers Justin G. Preston (left) and Mark Obermeyer can take projects from demo through mastering at Rudy's Studio.***

Recent projects at Rudy's include recordings for No Fair Fights, who have had a couple of songs placed in the FX channel's TV program *The Riches*. Music from No Fair Rights and another client, Saving Verona, has also been featured on MTV's *The Road Rules Real World Challenge*. Producer Mark Berry visited Rudy's recently to work with the band Majestic X, featuring world-class violinist Eugene Fodor.

"These are some of Denver's greatest rock bands," Obermeyer says. "We're just waiting for the rest of the world to discover them."

At face value, Rudy's Studio is a typical project room with good gear and enough space for creative work. What makes the facility shine is the engineers' approach.

"Everything we record, we do something new," Obermeyer explains. "We brainstorm about that constantly. We're known for being hard on people because we don't just tell bands that we produce what to do—we try to educate them so that every album they make will be that much better. We do pitch training, ear training, help them blow up their harmonies—really working with singers and creating something none of us imagined when we started. If we put our hearts into what we do, they will, too." ■

*Barbara Schultz is an assistant editor at* Mix.

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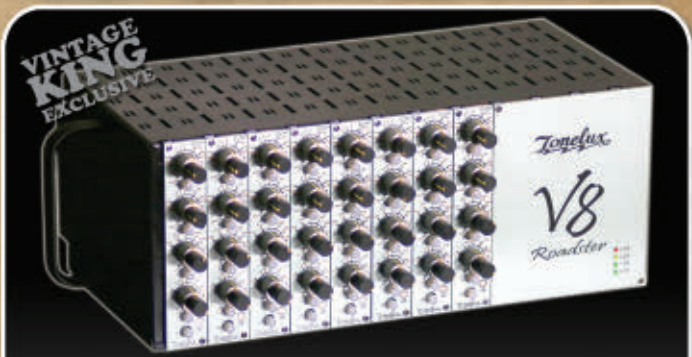


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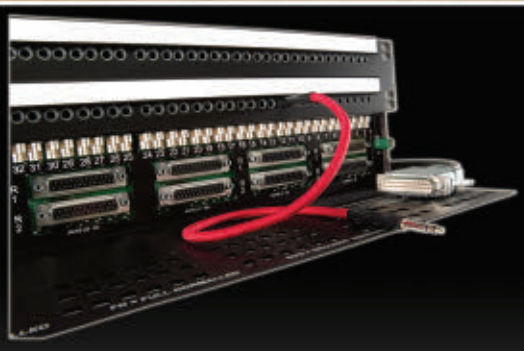

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BY ALEXANDER BRANDON

# Let's Play Peek-a-Boo

## An Interview With George "The Fat Man" Sanger

It wasn't too long ago that videogames represented an interest of less than 10 percent of the nation's population. That meant if you sold 1 million copies of a game, you were wildly successful. A handful of developers created games that were this financially successful, one of which was *Wing Commander*, released in 1990. Not only did the game sell well more than 1 million copies, but it also represented the first time a game programmer (Chris Roberts, who was also the game's designer) went on to direct a feature film. One of *Wing Commander*'s most notable aspects was its soundtrack: A groundbreaking leap was taken in cinematic presentation, and the soundtrack followed suit with a John Williams/Alan Silvestri–inspired score that made players' jaws drop, especially on high-end sound modules such as the Roland MT-32.

Team Fat—headquartered in Austin, and run by George Sanger, aka "The Fat Man"—composed the game's music. Team Fat went on to compose scores for more than 200 games and became the best-known music team in the gaming industry. I caught up with Sanger to find out what he's up to, and discovered a remarkable approach toward music and recording that is refreshing in today's ideal of "more is better."

***You've been making music and sounds for games for 25 years, and you're one of the most unique personalities in game audio. Tell us a little about yourself.***

We're all unique—that's what makes us the same. [Laughs] But I think what makes me different is that I look at the large, pristine, groomed studios loaded with neatly stacked gear and it speaks to me of fear. I picture—especially in game companies—the foreign shareholders being paraded through the studio, and if it has the wrong kind of wood paneling or doesn't have one of those acoustic baffles that look like a city made out of blocks—if it doesn't look "real"—then they might not invest in it.

For me, I have this mental picture on the cover of *Cosmo's Factory* by Creedence Clearwater that shows kind of a garage studio. I said, "That's the way to make music." A combination of that and the big rooms in the *Let It Be* movie, right? Somewhere between those two things, where you make noises and there's a tympani on the wall and a closet full of percussion instruments. I assumed with the explosion in home recording that there would be thousands of places like that creating music like that. For some reason, it short-circuited somehow, where people with the home studios tend to make fairly dance-oriented stuff and it tends not to get into games or films, and it didn't turn out the way I thought.

To me, the equipment and the room are to make something of the expressions that come from within. And even if it's not deep within, it's something that is at least fun. Or in the case of a game, something that is warm or good or appropriate. The playfulness of it is where the art and beauty are.

It comes down to peek-a-boo. The only reason we play, or come to this planet for that matter, is experiencing fun moments that we tend to call art, but it's essentially sophisticated peek-a-boo. An expectation is set up, and it is either filled or it's not. Marty [O'Donnell] in *Halo 3* gets extra points for using synths in *Halo* that some folks might consider "outdated" or "not orchestral," or whatever the current "safe" fads are in soundtracks instrumentally. Because people expect unexpected things from me, I need to tear some new buttholes these days. So I tend to like something more like Beck or The Beatles, in the context of what went before them—something scary to listen to.

***Switching gears, what do you think the minimum level of interaction a composer or sound designer should have with a game?***

I start with my creatively encouraging rig, and it's clear to me that I can sit in that rig and make great noises that will sound great in the game. If you get things too complex, you drift away from that, from the peek-a-boo. When you sit down at a piano, you start banging away and eventually perhaps create a melody. If you sit down at a synth, you may begin to play with patches and envelopes. If you

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sit at a computer, you may just start surfing the Web. The last two things don't yield a melody or something you consider cool.

Just the same, mapping sounds to an environment in a game is many layers away from a great moment in the game that could either derive itself from music or sound, an audio "joke" or something that creatively explores new ground. I'm a little bit closer to being in touch with the idea that I'm going to make a noise, listen back again, and say, "Wow, hah! That's cool!" The best tool that I work with right now is for the slot machines that Dr. Cat put together for me awhile back, and it is basically a text file I edit in Notepad. Parameters are controlled such as panning and looping when a sound plays. This allows me a fast way to map sounds into the game, and I've done a couple hundred games that do that and it is very efficient. The most important aspect is that there's no programming involved. I'm trying to get Full Sail to teach this as an absolute minimum for when someone designs a game, not necessarily a standard.

If you don't have something like that script or better, you're in the position where your programmer has basically forgotten about anything that might be complex, subtle or interesting about audio, and has mapped one action to one WAV file and named the WAV file after his favorite science-fiction character. So you load the game and it plays "Borg.wav." What you've done is you've shot to hell your ability to adjust volume, to use more than one sound for a given event, to track your file version because everything will have to have the same name and you can't hear it until you ship it off to him and bother him. He's dug himself a hole in which he's going to be bothered by you, the "sound guy."

***What was your first game?***

It was *Thin Ice* by Intellivision. We just played the theme at a Classic Gaming Expo in Las Vegas. It just got posted to YouTube [at www.youtube.com/watch?v=2O5YB5RFC0c].

***I saw that—you rigged a keyboard case as your kick drum when it didn't show up and used a cell phone delay for the guitar delay!***

You can have your readers watch that. That'll confuse 'em. "Surf music? What the hell!"

***I have to admit, interpreting game music as a surf band was a little confusing when I first saw it years ago at the Game Developers Conference.***

People would say, "What does surf music have to do with black T-shirts and pixels? This isn't game music!" [Laughs] So, good. I always took my eclectic tastes for granted and assumed there were a lot of other people who wanted to make exciting and extreme stylistic combinations. Maybe I was gifted, maybe I was cursed. When I do it, it confuses the hell out of people. I just make any noise, any style, and try to make it impactful to the heart rather than in a specific style for its own sake.

These days, there isn't as much experimentation in games themselves. People are making great games, don't get me wrong, but the strokes aren't as broad except in the indie, casual game arena. I want people to laugh so hard that coffee will come out of their noses. Games are no good if the increment between one and another is too small and safe. But if the increment is too great, there's just as good a chance that the game will flop. People making games along those lines aren't doing "wrong"; they're being responsible. But I'm catering to people who can set their business up to be a little loopy. ■

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*Alexander Brandon is the audio director at Obsidian Entertainment.*

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# U2 3D

## Rocking Band Takes Concert Footage to New Heights

By Matt Hurwitz

For the past 30 years, only audiences at U2 concerts have known what it was like to experience one of the band's live shows. But with the recent release of their newest concert film, *U2 3D*, that's all changed. The first live-action multicamera 3-D feature shot in HD, *U2 3D* places movie audiences smack in the middle of the crowd and onstage with the band, giving fans an experience almost as rich as attending in person surrounded by 90,000 other fans. Released by National Geographic Entertainment and directed by Catherine Owens and Mark Pellington, the movie can only be seen in 3-D, either in digital cinema–equipped theaters using REAL D 3-D projection or in IMAX 3-D.

The film was shot over a three-week period in March 2006, during the group's Vertigo tour in South America. Seven live concerts were filmed: two in Mexico City; two in Sao Paolo, Brazil; one in Santiago, Chile; and two in Buenos Aires, Argentina. An additional "phantom shoot"—sans audience—was filmed early the first night in Buenos Aires, with cameras placed close up onstage to permit such "macro" shots to be captured without camera operators interfering with the view of audience members.

For audio recording, executive audio producer (and one of the film's producers) John Modell of 3ality Entertainment enlisted the help of two U2 alums: co-producer and recordist Robbie Adams and music producer and mixer/re-recording mixer Carl Glanville. Adams has worked with the band on and off since 1989, engineering and mixing their *Achtung Baby* and *Zooropa* albums, as well as mixing front of house with U2 veteran Joe O'Herlihy and recording on numerous tours and live DVDs. Glanville, with the band since 2002, had produced and mixed two live concert DVDs for U2, as well as numerous other remixes; this was his first re-recording project. "That was the hallmark of the whole production—to work with guys who've been working with the band forever—rather than sending in some outside company with a truck," notes Modell.

*From left: Warner Bros. re-recording mixer Tim LeBlanc, Carl Glanville, John Modell and Robbie Adams*

As a base, Adams used the band's live miking setup, comprising mainly Sennheiser 421s; Shure SM58 Betas, SM57s and RF58As (for Bono's vocals); AKG 414s; and Countryman DI boxes. Venue/audience ambience was picked up by Audio-Technica AT4073As and AKG 414s. Additional spot mics, mostly SM57s, were placed at various locations along the stage's tendril-like ramps—down which bandmembers would wander during certain songs—for pickup of individual audience clusters. "It really brings quite a lot and helps suck you into the movie," Adams explains, "so that when you see a person screaming onscreen, that's the person you're hearing."

Placement of audience/ambience mics was crucial to the 3-D experience. "The Latin American audiences are very vocal and exuberant," notes Modell. "We knew that was going to be a big part of the movie." The varying architecture of the different venues posed a challenge—both to Adams for recording and, later, for Glanville in mixing when trying to match ambiences from different recordings. "In one venue, we might point a mic at a wall near a large audience section, though that place doesn't exist in another stadium," Adams says. "And one stadium might have a roof, while another is smaller, is shaped like a dish and has no roof. So you're totally guessing—you do the best you can and then deal with it later."

The microphone signals were split through a Clair Bros. splitter to both stage and local racks containing the digital mic preamps for the DiGiCo D5 FOH desk, as well as the other D5 used for the monitor system. An additional set of audio splits fed the Digidesign VENUE console (operated

*—CONTINUED ON PAGE 61*

# Assassin's Creed

## 21st-Century Game Audio for the World of the Crusades

By Blair Jackson

PHOTO: COURTESY UBISOFT

With sales of more than 2 million copies worldwide, Ubisoft's remarkable *Assassin's Creed* for the Xbox 360 and PlayStation 3 formats (with a PC version released at the end of last month) is one of the most successful new videogames of the past year, a hit with both players and critics. The game's complex story involves a barkeep in the year 2012, who, through a machine called an Animus, is able to relive the memories of one of his ancestors who lived during the Crusades—an Arab assassin named Altair Ibn La-Ahad.

Much of the game action comprises La-Ahad wandering through different Middle Eastern cities in the year 1191, hunting down various people who are propagating the Crusades. La-Ahad is one stealthy dude, and there's much pleasure to be derived from skulking about the incredibly well-rendered bazaars, deserted alleyways and scenic rooftops of places like Jerusalem and Damascus as he searches for his prey and encounters all sorts of resistance from various foes along the way. It's a fantastic yet realistic world, and the intricate sound design is one of the game's many outstanding features.

Recently, I interviewed the lead audio designer for *Assasin's Creed*—Mathieu Jeanson of Ubisoft Montréal—about some of the challenges of working on this sophisticated and spectacular game.

**Assassin's Creed *lead audio designer Mathieu Jeanson***

***At what stage in the game's production was the sound team brought in?***

At Ubisoft, it's standard that triple-A games have their own audio designer from pre-conception until release. *Assassin's Creed* initially had a different audio designer during pre-conception, but then I came on as lead audio designer around the end of pre-conception. My role was to define how the audio would correlate to the game and to establish general audio artistic direction. This was based on brainstorming meetings with the creative director and game designers. I've found that establishing a good relationship and solid communication with the design and creative team is essential to the success of any project.

Once we officially started the game production, I brought on three other audio designers to form the sound team. The roles and responsibilities of each member were divided by specialty based on their audio vision and experience. One led sound effects and Foley, one managed the music and ambience, and one oversaw all voice content: onomatopoeias, AI dialog and script dialog. I was in charge of the artistic direction of all audio, team management and planning, tools, technical issues and studio booking.

***I presume because of how long it takes to get finished animation that the sound team probably had to work from a combination of story boards and/or crude animatics when developing sounds for the action?***

Yes and no. In general, it's best that audio production wait to have the final design and game system more or less in place before starting to build the overall soundscape. In a game like *Assassin's Creed*, there are thousands of blended animations that needed audio implemented, and our time frame didn't allow us to wait for all animations to be final before recording or editing the sound.

Foley recording was planned to follow the animation-validation process, so a lot of management and validation were required to ensure that audio assets would remain coherent with their animations. Some parts of the animation design continued to adapt up until the end of production. But as with all aspects of audio, we often integrated placeholders, and at the end we replaced them with the final versions, sometimes requiring some re-integration and tweaking in the engine.

***What sort of gear did you employ for original Foley and effects recording?***

PHOTO: COURTESY UBISOFT

For Foley recording, the signal path we prefer is a Neumann TLM 170R microphone fed to a GML 2020 module, one of the best recording channels ever built, from our experience. We then record everything to Pro Tools HD, which is controlled using a ProControl surface. Depending on the character we're after for a given sound, we might reach for outboard gear or sometimes plug-ins just to obtain the specific color or that extra bite factor. In the digital world, we really like the McDSP products, Filter Bank, Analog Channel—all great-sounding stuff that's easy and fun to use and feels like the real thing.

For several years now, the Ubisoft Montréal studio has had complete audio facilities to accommodate all in-house audio production—SFX, ambience, Foley, mixing and voice recording.

Basically, we start from a capture of the animation from the game editor. The final output given to us is a video file with a stable frame rate and frame size supported by our DV Canopus playback system: 720x480, 29.97 fps, QuickTime DV.

***What sorts of things went into the sword hits and horse gallops and such? Did you use libraries at all?***

For the sword impacts and combat elements, we experimented with hitting and scraping a great number of different metals together—steel and aluminium rods, various blades—just to re-create the different impact intensities and sword types used in the game. For example, for just one sword-body impact, we recorded approximately five to eight layers combined together.

For the horse footsteps design, there was no way we could lift samples from a commercial sound library that would suit our needs. So we actually organized a field recording session away from the city, and used a real horse hoof with horseshoe on fabricated surfaces just to get the movement, the weight and the level of realism that we're after.

In general, though, we will use a mix of in-house and commercial SFX libraries for ambience elements like wind, background noise and some specific elements that we don't have in-house.

But we spent many months recording original assets for pretty much everything that we could hear in the game. For example, the footstep system uses more than 1,500 original recorded samples. We managed 22 surface materials, with 14 different step intentions—sneak, walk, run, jump, land, pivot, et cetera—including three to eight variations for each intention per surface.

For the crowd walla, we started with ambience from commercial libraries as a base layer. We also organized custom walla sessions, including varied languages and accents, but, in fact, most of the material came from previous Ubisoft projects.

***At what bit rate were sounds recorded and delivered?***

Internally, all audio files are at 24-bit, 48kHz broadcast WAV from recording to editing. Files are mostly delivered at 16 bits, 48 kHz to the audio designer for implementation, but that doesn't mean that all files play back in the game at this quality. We keep audio as high-quality as possible, while also optimizing to respect the memory budget, which is established by the lead programmer.

***What sorts of sound considerations were there for parts of scenes where there is a lot of repeated action?***

Watching the same animation repeatedly is much less annoying than hearing the same sound being played in succession by the animation, so often it's the role of the audio to simulate visual variation by using different SFX variations. It's always a challenge to create a realistic world that doesn't sound the same everywhere. But one of the biggest challenges was to manage the AI dialog properly since it was all driven by the AI system, and the complex logic of our AI system didn't always automatically produce natural dialog behavior.

***At what point were the cool reverbs and other sonic manipulations done—before or during the mix?***

The basic game mix is done progressively throughout the game production. There are so many assets to manage that we don't want to wait until the final mix session to tweak all the little details. Two weeks before shipping, we play the whole game, step by step, and tweak all remaining levels that remain to be balanced. Most of our effects are pre-rendered to save CPU and memory, but we're always using software reverb at the console output to simulate the acoustic environment of each location. We used a lot of volume and panning manipulation done in real time, such as dynamic ambience mixing based on the character height to simulate different height perspectives.

***Was the sound for the game mixed using a conventional console or "in the box"?***

All sound in the game was edited, recorded and mixed on "in-the-box" systems. Years ago, we worked with an SSL Axiom-MT and Pro Tools 24 as a recorder, but have since upgraded the main studio with Pro Tools HD on Mac-based systems using the ICON as a worksurface.

***At this point, do sound designers for Xbox games have to vary bit rates for FX as they did on earlier, less sophisticated platforms? That is, do you have to make determinations about which FX "need" to be heard more clearly than others?***

Initially, *Assassin's Creed* was planned to be shipped only on the next-gen platforms Xbox 360 and PS3, so we didn't really have to worry that much about platform-specific assets and console-specific quality. We were more concerned about how much RAM would be available for sound on the PS3. But, fortunately, the PS3 has a hard drive, which we used to stream a lot of stuff that we could put in RAM on the Xbox 360.

The quality difference between platforms is mostly due to the consoles' proprietary compression formats—XMA in the case of Microsoft and a variation of ADPCM called VAG for Sony. Technically, the quality is variable from console to console, but unless you're able to compare both platforms back to back, you won't detect a significant sonic difference. ■

## U2 3D

*—FROM PAGE 58*

by longtime U2 monitor engineer Dave Skaff), from which the signal was drawn for recording.

Adams recorded the earlier shows on his Steinberg Nuendo system, inputting 96 channels until it was discovered that additional inputs would be required for the additional ambience mics, totaling 110 inputs. So they switched to Pro Tools HD. In fact, for multiple redundancy, two Pro Tools rigs were used, the second acting as a backup along with the Nuendo.

Interestingly, Modell found that there was no direct way to sync picture and sound recording together with a digital clock. "Front of house would have had to sync their whole show to our camera clock, and that was not going to happen," he says. To solve the problem, a stereo FOH mix was recorded to both systems. Editor Olivier Wicki then imported that mix into his Avid editing system, which was then output as an OMF (Open Media File), which Adams and Glanville then imported into their Pro Tools session, visually aligning transients of the FOH mix with their own recording of that mix in the Pro Tools session.

In addition, the click-track used by the musicians was also recorded to both systems; Adams and Glanville used it to make slight adjustments, as needed, to Wicki's OMF.

"He would put together what he thought was the closest version of the thing," Glanville explains. "But Olivier's not a music editor, so every once in a while he might skip a beat or come in halfway through a beat because he couldn't hear it clearly in that mix." The team would make whatever slight adjustments were required and send the OMF back to Wicki, who would then regenerate picture and return the corrected file back to the audio team.

### PUTTING IT ALL TOGETHER

As mentioned, the film comprises recordings made at a total of eight performances from four different venues that were seamlessly edited together, both in picture and sound, to appear to be from a single source. No overdubs were done by the band, which, Modell notes, "is a real testament to the band's talent and accomplishment."

Adams and Glanville edited and mixed the soundtrack over a period of more than a year—from July 2006 to October 2007—at Effanel Music in New York City, taking full advantage of the studio's Digidesign ICON console. "It's the only 'real' 5.1 room that's of a size [that] music engineers who are used to making records would appreciate," says Glanville. "We knew the scope of this project was going to require some serious hardware and a room that was specifically built for 5.1."

Glanville notes that for concert films, the picture is usually conformed to whatever performance of a song is deemed best, but in this case that wasn't possible due to picture limitations at certain venues. Production was limited to only one or two 3-D camera systems on all but the Buenos Aires shows (to avoid multiple cameras blocking audiences' views), which left director Owens and editor Wicki with only a single camera angle with which to work for songs from those nights' performances.

"We realized that because the picture department wanted to put together the best collection of shots they possibly could for any one song, we couldn't just pick the best version of the song and have them conform picture to it," says Glanville. "It was clear we were going to have to conform our audio to their picture."

Complicating matters, says Modell, is that the band—Bono, guitarist The Edge, bassist Adam Clayton and drummer Larry Mullen Jr.—varied the phrasing in their performances from show to show, and that the 3-D film featured 10 to 20-second shots (as opposed to the customary quick cuts in concert films). "So you don't have a choice but to use the real audio from whatever picture you're seeing, because you'll run into lip-sync and instrument-sync issues that will be obvious to the audience," Glanville explains.

The team then developed an "assembly line" of sorts at Effanel, with Adams constructing Pro Tools playlists of the recordings in one room and Glanville mixing in the other. It was decided to first assemble a playlist that matched the picture, shot for shot, of each song: a master wide shot, say,

from Mexico City, with its associated audio recording, and then a close-up of The Edge playing a guitar riff from Buenos Aires with its recording, etc.

Adams' playlist contained the full grouping of all tracks from each night's performance of each song, stacked one below the other on the list, allowing him to comp the track group of a night's show to match the image appearing onscreen.

"We just built an exact replica of what they had, and then started looking at what that meant to the performance, sonically," Glanville explains. "Then, once we'd done that, we said, 'Okay, now let's do another version of that edit, and pull out any unnecessary edits.'" Glanville found that, while it was literally accurate to switch to the recording from a different show, say, for a quick cut to a group of audience members singing along, doing so would unnecessarily interrupt a guitar or vocal performance.

"We spent a lot of time going through each song and removing those kinds of cuts," says Adams. "For the most part, the main body of a song was from the single night's recording." Sometimes, though, the picture might cut to, for example, The Edge playing his guitar lead or a drum bit from a different show. In many such cases, because the band was playing to a click track—providing a uniform rhythm for each song from show to show—Adams was able to simply reselect from within his comp the guitar track for the song appearing onscreen while bringing in the remainder of the backing track from the master performance.

Switching between performances wasn't always so simple, however, where ambience was concerned—particularly where Bono's lead vocals were involved. If a master shot of one night's performance, with its associated venue ambience, cut to a close-up of Bono singing a line taken from a different night's show, with its own associated ambience, Glanville was forced to use the recording from the close-up's shot during that close-up and then carefully switch back to the master when the close-up was over.

"What I ended up having to do was group his vocals, with all the audience mics, and then build a vocal performance, so that every time you saw him I could switch to a different playlist that included all of the audience mics. So when the vocal switches, his voice is always in the ambience," Glanville says. He then staggered the edits of the ambient mics—anywhere from a millisecond to five seconds—to crossfade smoothly between the two takes, helping to mask any differences in echo/delays caused by differences in venues.

### MIXING FOR 3-D

While mixing a concert film into 5.1 surround is not new, mixing one for 3-D is, requiring a different approach from that employed for a "flat" (2-D) film. "In 2-D," explains Adams, "generally most of the action is happening in the middle of the screen. In 3-D, you've got so much detail: There's something happening in the top of that corner or that corner. If there's something happening in one corner, people will be looking there, so you put a little voice in. People watch it completely differently—it taps into their brains in a completely different way." Adds Modell, "We had only one rule: What feels real?"

This is not to say that a 3-D 5.1 mix means things flying all about the auditorium. "It means if you cut to a close-up shot of The Edge, you pull the guitar forward slightly in the mix," Modell notes. "Not in a gimmicky way. The idea is that both the visual part and the audio part should become transparent as media. If you're feeling a bunch of gimmicky stuff going on, it will pull you out of the experience."

For Glanville, it was all a matter of finding the right moments, many of which were fairly organic. "When you see a presentation on a 50-foot-wide screen, and you suddenly hear Bono's voice come out of the left speaker, your eye is immediately drawn to the left side of the screen. You turn your head and out pops Bono from the edge of the screen, walking up the ramp, and then the audio tracks him to the middle of the stage. It's little moments like that that make it a very different experience from some-

thing that you would see in 2-D."

Glanville also played with dynamics and ambience, and took advantage of the SM57 spot audience mics to create a different experience for the viewer. At the end of "Miss Sarajevo," says Glanville, "Robbie had the idea of pulling out all the ambience, where you see Bono slowly walking up the ramp." Adams adds, "He's just sung his heart out, and as he walks back, he just strikes a lonely figure. There's all these people screaming out his name and he can't even hear them. It just lets you get inside his head for that moment."

Indeed, the audience mics played a crucial part in the 3-D experience, particularly with this band's following. "There's so much happening with a U2 crowd during the body of the song that as soon as you strip that out, the soul just disappears out of the whole performance," says Glanville. "There's too much interaction between the two to just let it go. If there was a night where a crowd really sung their hearts out, we made sure to fish that out and use it, to really give you a sense of what it's like to be in that crowd."

To counter the effects of unpredictable multiplex theater sound systems, the team spread bass material throughout the mix. "We were worried about relying too much on the subwoofer channel to give us the bottom end of this picture," explains Modell. "This is different from a normal picture, where it's 90 percent dialog with the odd crash or gunshot or boom. This is driving eighth notes the entire time and a constant kick drum with a lot of bottom and energy. If we relied on the subwoofer to give us a lot of that, we'd be hosed in a lot of theaters."

The case was different from IMAX 6 masters, where theaters have a bass-management system to take full advantage of low frequencies. "We actually brought a Pro Tools system into two IMAX theaters in Los Angeles and essentially remastered it for IMAX right in the theater," Modell says.

In October, over a three-week period, the team reconvened at Warner Bros. Dub Stage 6 to do the film's re-recording. "Dub 6 has the largest ICON console in the world," Modell says. "And having done all this work in New York on the ICON, it was great to just come and open stuff up and not have to wrestle with remapping anything."

Glanville's stem layout comprised drums, bass, guitar, Bono guitar, Bono vocal, Edge vocal, keyboards, audience and supplemental audience. "Sometimes we'd split the audience across two sets of tracks, just to feather in some extra sounds to make transitions work between the songs," he explains. Gaps between songs were also extended slightly. "It was felt that to have the songs just keep hitting you one after another like that in the movie theater could end up being a bit overwhelming. Adding an extra five seconds in between some of the songs gives you that little moment to come down from what you've just heard and then get ready for the next thing."

There were actually two sets of stems—one dry and one containing the effects—allowing Glanville to rebalance at Warner Bros. as needed. "And that amounted to about 230-odd tracks of audio," he adds.

*U2 3D* was a project of "firsts" on many fronts, Modell notes. "It's the first digitally captured 3-D live action film of its kind, the first time zoom lenses were ever used in 3-D, and it was Carl and Robbie's first re-record mix. And because it had never been done before, there were no rules to break. It was a wide-open canvas. And it was Carl and Robbie's creativity and meticulousness that made it happen." ■

## Blue Man Group

By Sarah Benzuly

You may have seen them at your local theater, but the men in blue are taking their production on the road with their How to Be a Megastar Tour 2.1. The main performers in the production, the "Blue Men," are silent characters that use a variety of unusual materials to create a wonderful musical soundscape; the production is supported by a full live band, with gear provided by audio rental company Audio Analysts.

Handling front-of-house duties is Ross Humphrey, with support from Audio Analysts' Chris Hoff (crew chief and system engineer), monitor engineer Matt Fitzgerald, and Rick Procopio and Brian Post, Audio Analysts' P.A. system techs. According to Hoff, "There are a lot of unusual instruments being used, including several made of PVC material, so there are some gain-before-feedback issues that you don't normally see with conventional instruments. With the [JBL] VerTec line arrays, we have good rear rejection and don't have a lot of SPL coming off the back of the boxes, so gain before feedback is not so much of a problem." The system is powered by Crown I-Tech amps.

"The arenas that we play range in size from 'A' market to 'B' market venues, so flexibility and scalability of the system is important," Hoff adds. "Sometimes we don't have the trim height that we have in other arenas, but with VerTec we can easily scale the system down with good results. We are using JBL's new VerTec Version 4 DSP presets, which give us even more flexibility depending on the size of the room and the array. Considering the style of the music and the way the mix is approached, this has proven to be a very effective tool."

## FixIt

*Front-of-house engineer Brent Rawlings is relying on a Britannia Row–supplied Turbosound Aspect system during Kings of Leon's European tour.*

This is a five-way system and some of the bass speakers are being flown as part of that five-wide, five-deep to get some bottom end in the air. We're doing this because if you are sitting off to the side of the stage and you have a cluster of speakers pointing at you, which are treble, high-mid and low-mid, it might just be a little harsh. Adding in some bass means you can feel a little pressure on your chest from the other instruments. We are experimenting as much as possible to get rid of what we call 'power alley'—to make the bass nice for everybody, not just a select few. A big part of it is trying to keep everything going forward, as opposed to wrapping around itself and coming up on the stage and messing with the band. I am trying to shake the body of the person that is in the back of the arena without affecting the band.

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## News

*According to FOH engineer Wayne Pauley, the Celtic Woman U.S. tour uses a Meyer Sound MILO system being hung in numerous venues; Masque Sound provided the system.*

Longtime audio provider for the **New Year's Eve Show** in New York City's Times Square, **Maryland Sound International**, handled both performance stages—each with a 96-input **Studer** Stagebox—and a broadcast stage with 10 inputs were all fed to an optical splitter, which fed both a **Soundcraft** Vi6 running monitors for each performance stage and a Studer Vista 5 SR in the main "mix container"…**Constantine Zachariou**, engineer and project manager for Washington-based audio/video design firm **Avidex**, handled the audio renovation of the downtown **Seattle Art Museum**, which included choosing **Symetrix**'s SymNet DSP systems…UK hire company **Concert Sound** finished providing a large-scale sound reinforcement system for **Joe Cocker**'s latest European concert tour. FOH engineer **Chris Madden** chose **EAW** line array and loudspeaker sets…**Village Baptist Church** (Destin, FL) upgraded its wireless systems with **Sennheiser** SKM 5200s with **Neumann** KK 105 capsules, HSP 2 headworn mics with SK 500 G2 and SK 5212 transmitters, and ew 300 IEM G2 personal monitoring systems coordinated through Sennheiser's NET 1 system.

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# ON THE MAP

From coast to coast, Remote Recording has made a name for itself with involvement in big names and even bigger shows. Sporting dual DM2000's with 24-bit 96kHz performance and 96 inputs, this truck is really going places. Key features include a complete surround sound panning and monitoring package, a full mixdown automation system and advanced DAW integration. Newly added VCM effects such as recreations of compression and EQ units from the 70's, and a variety of vintage stomp boxes provide endless options in the world of recording.

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## Installation Profile

The Minnesota Orchestra (Minneapolis) has taken in a Cadac 24-channel S-Type compact live production console as part of a major sound system upgrade for its Orchestral Hall. The venue hosts a 98-member ensemble, which performs for annual programs that include live concerts, broadcasts and recordings. In addition to the board, head of sound Terry Tilley (above left), who has been with the orchestra for 30 years, spec'd 64 additional mic lines, Lab.Gruppen fp2600/3400 amps and a Yamaha PM5D submixer for road show projects.

The hall's acoustics were designed by Cyril Harris. More than 100 large cubes form a "falling rock" pattern on the auditorium ceiling to deflect sound throughout. The wood floor and stage allow for better sound vibration, and the angle of the balconies offers optimal sound reflection. The venue comprises two buildings: a rectangular-shaped auditorium and a glass-and-steel supporting structure (lobby and admin offices) that is separated from the auditorium by a 1-inch gap to free the hall from any outside sound.

"I wanted a really good-sounding desk, capable of handling the eclectic mix of recording and broadcast projects we get involved with—anything from classical reinforcement to light jazz," Tilley says. "Earlier this year, our director and the musicians put in a pretty loud request for some new equipment. Management said yes, and I was allowed to go shopping.

"We need a very fine and controllable sound, along with a very precise EQ for the wonderful acoustic we have in the hall," he continues. "With the S-Type, everyone is very happy with what we can now achieve, including the broadcast guys! Given that I have a pretty good collection here, that is saying something!"

Tilley and his assistant handled the install, despite the lack of any cable pulls in the 1970s building, while continuing to work through a daily schedule that involves some four shows in rotation at any time.

## Now Playing

### The Mars Volta

**Sound Company:** Rat Sound
**FOH Engineer/Board:** Toby Francis/Digidesign Profile
**Monitor Engineer/Board:** Daniel Bonneau/DiGiCo D5
**P.A./Amps:** MicroWedge, dV-Sub, L-Acoustics 108p/Chevin Q6, L-Acoustics LA48
**Monitors:** Sennheiser ew 300 IEM G2
**Outboard Gear:** XTA DP448
**Mics:** Shure SM91, Beta 52, SM57, Beta 98, SM81; AKG 414; Audio-Technica AT4050
**Additional Crew:** monitor tech Manny Barajas, tour manager Narci Martinez, production manager Amery Smith

### Cobra Starship

**FOH Engineer/Board:** Chris "V" Villanueva/house-provided
**Monitor Engineer/Board:** Tony Marino/Crest XRM
**P.A./Amps:** house-provided
**Monitors:** Sennheiser ew 300 IEM G2
**Mics:** Audix D6, i5; Sennheiser 421 IIs, e 609, e 604; Shure SM57, SM58, SM81, Beta 58
**Additional Crew:** guitar tech Dave "Hansel" Hansen

## Daly Survives With CONEQ

For the final live telecast of *Survivor: China*, sound designer and lead mixing engineer Bill Daly relied on the Real Sound Lab CONEQ tuning process to equalize the PRG-supplied system. A CONEQ measurement, and the resulting 4,096-point amplitude correction, is based on acoustic power instead of SPL measurements.

According to Daly, "The usual time I allocate for system tuning with an FFT was cut in half, while the results were better than I could have imagined. On a major live telecast like *Survivor*, I normally allocate two nights for system tuning. With CONEQ, I was ready for rehearsals in just one. My rack of 'emergency graphics' was literally left untouched, as were the EQ filters on my 10 channels of XTA loudspeaker processors. The 10 channels of CONEQ correction were all that I needed. The sound for the telecast was smooth as silk, and in particular I've never heard the main arrays sound better."

The *Survivor* system also included left and right dV-DOSC main arrays, two arrays of Meyer M1Ds for downfill, a row of d&b C-6s for delay fill, and 72 Apogee SSMs and 64 SAT-3s for front-fill and under-seat fill. Two Yamaha M7-CLs were used for house, while a PM1D and a PM4000 handled monitor duties.

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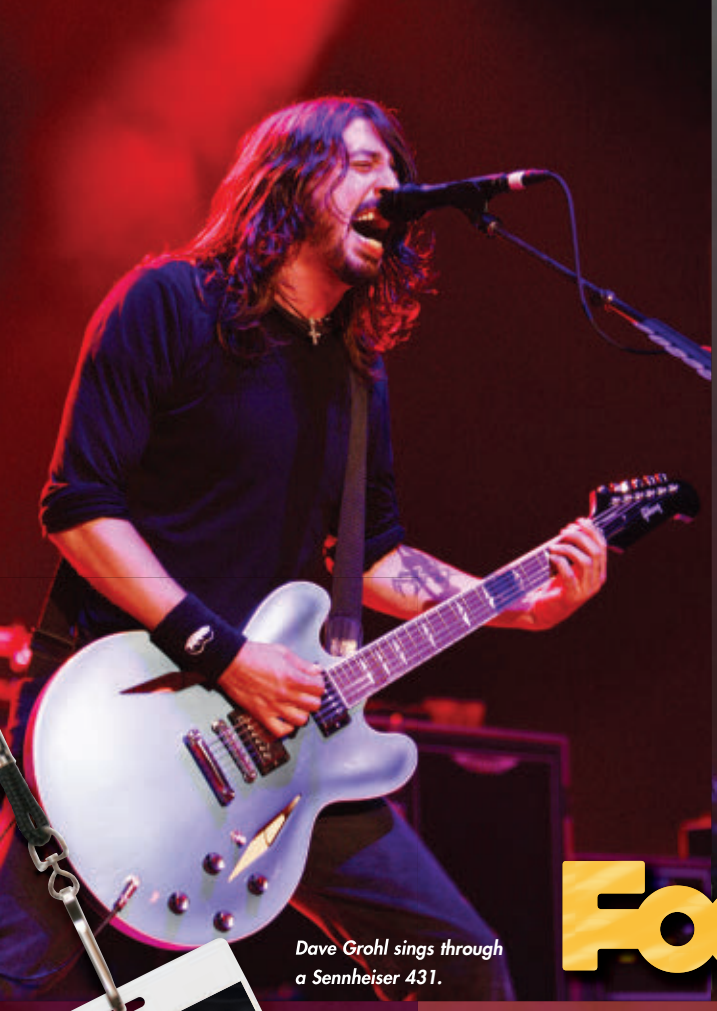
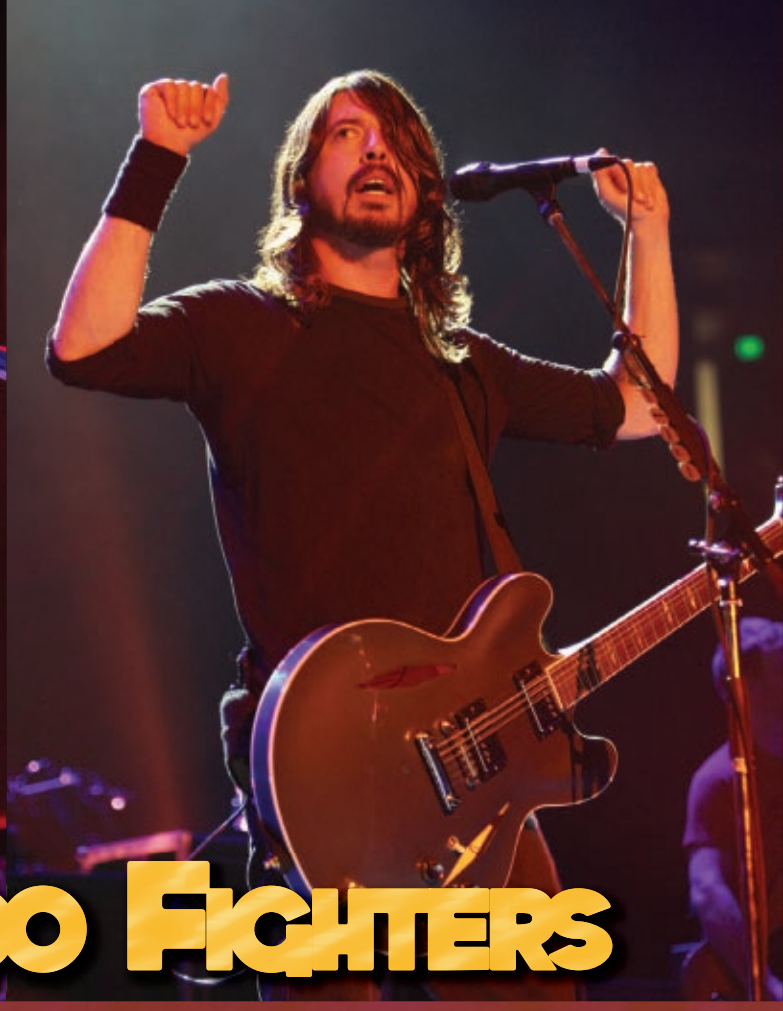




# Foo Fighters

Dave Grohl sings through a Sennheiser 431.

Photos & Text by Steve Jennings

Touring nonstop to promote their latest album, *Echoes, Silence, Patience and Grace*, knock-out rock band Foo Fighters are taking the concept of stage setup to new levels: There's an A stage for the main electric show and a smaller B stage (located in the middle of the floor) for the acoustic segment; the latter is hidden above the audience in the center of the venue, and is lowered when required. The trick for audio pros Bryan Worthen (front of house) and Ian Beveridge (monitors) is making sure that the sound from either stage is cutting clearly through the P.A. *Mix* checked in on the team at Oakland, Calif.'s Oracle Arena show in early February—just days before the group's performance at the Grammy Awards.

*Front-of-house engineer Bryan Worthen is manning two DiGiCo D5s: one for the main "A" stage (42 inputs) and one for the "B" stage (30 inputs).*

*As for rack gear, "I have one rack per stage of six Avalon 737s," Worthen says. "These are being inserted on Dave [Grohl's] vocals, Dave's spare vocals, Taylor [Hawkins'] vocals and the three acoustic guitar channels. The other rack is just a CD player, CD burner and DAT recorder."*

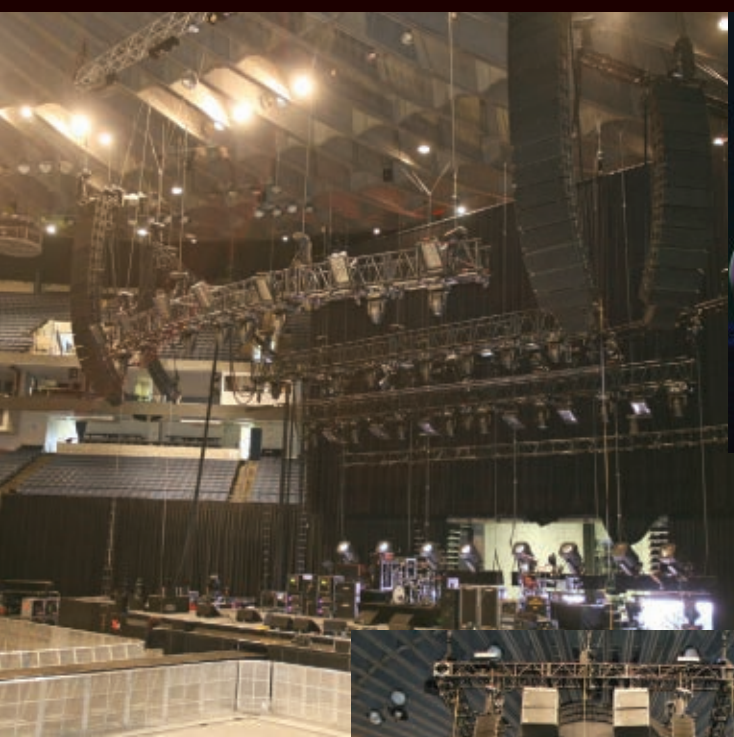
*Front-of-house engineer Bryan Worthen with system tech Mark Brnich, who is holding a Dolby Lake Contour table PC; additional audio crew includes guitar techs Joe Beebe and Sean Cox, bass tech Geoff Templeton and drum tech Chad Ward.*

*Monitor engineer Ian Beveridge (below, right, with Worthen) is mixing on a mostly maxed-out Yamaha PM1D, using 80 or 90 inputs and close to 48 mixes.*

*"For monitoring stage A (main stage) and stage B (audience stage), there is a brain and input/output racks at either stage, but only one worksurface at the A-stage position," Beveridge explains. "This was done to get rid of the 600 feet of copper that B-stage monitor audio would have ended up running in. Also, the band wanted a seamless transition from stage to stage, so ear mixes had to be sent from the one rack, which also lives at the A-stage position."*

*Drummer Taylor Hawkins' kit is miked with all Sennheiser: 901s, 908s, 609s, 604s and 614s.*

*Bassist Nate Mendel*



*Guitarist Chris Shiflett (below, left) and touring guitarist Pat Smear*

*The main stage (above) uses four hangs of L-Acoustics V-DOSC and dV-DOSC, and d&b B2 subs on the floor; stage B (right) has two hangs of V-DOSC and dV-DOSC, four hangs of dV-DOSC and three hangs of d&b subs. Six B2 subs are located on the floor around the stage.*

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# ONE MAN BAND

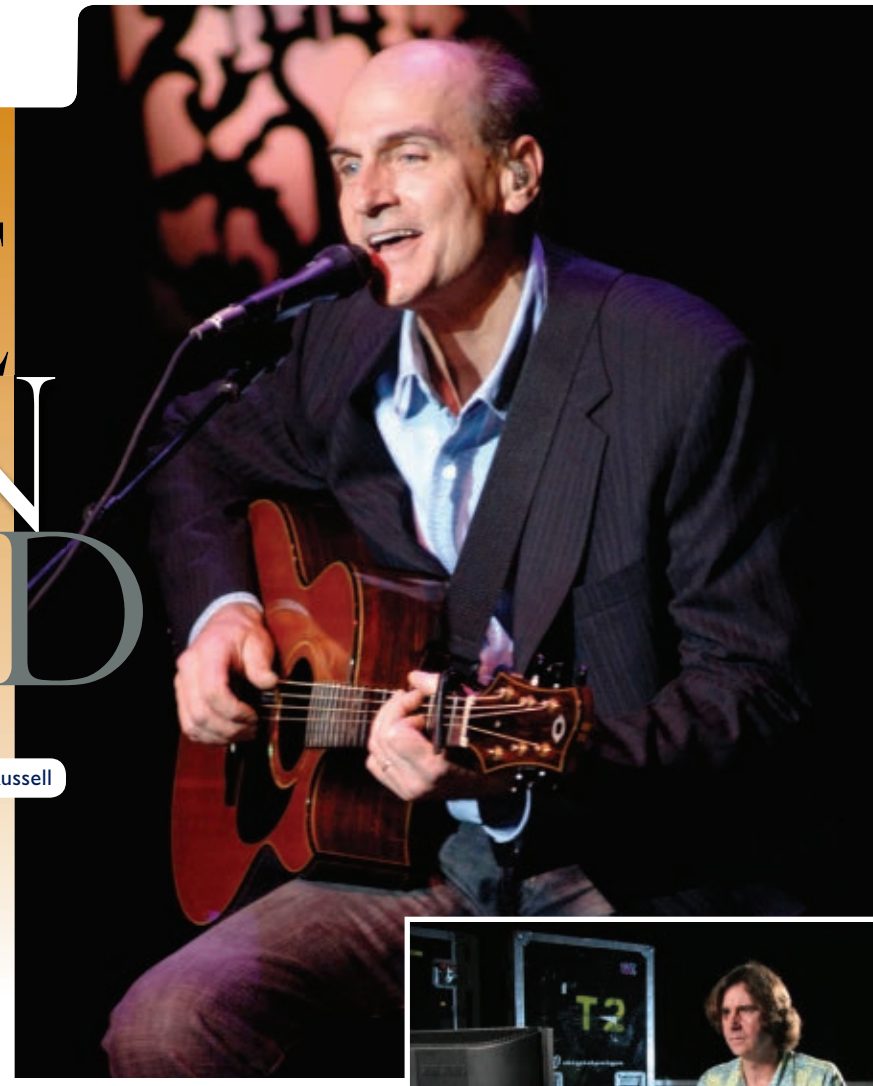

PHOTO: TIM MOSENFELDER

By Nick Russell

## A SINGULAR SOUND FOR JAMES TAYLOR

*Front-of-house engineer Dave Morgan at the Digidesign VENUE D-Show Profile board, which he has found perfect for Taylor's theater tour.*

James Taylor's One Man Band tour isn't quite as solitary as the name implies. There are, after all, other players onstage: The talented Larry Goldings accompanies him on piano, keyboards and harmonium; and an imposing drum machine that looks like it was handmade from a closet full of Rube Goldberg's spare parts makes a pair of appearances. The Tanglewood Festival Chorus (including Taylor's wife, Kim) also joins the show, collaborating with him via video screens during "My Traveling Star" and "Shower the People."

Playing rooms as large as 3,600 seats but making most stops in venues built for 2,500 to 2,700, Taylor's current pared-down approach to touring is, as he says, "An intimate retrospective of 40 years' worth of songs and the people, places and events that inspired them." The One Man Band performances weave a full 20-song concert set with a rich narrative that draws from six decades in the artist's life. Illustrated with photos, drawings and more from Taylor's private archives, the monologue provides a time line and reveals the back-stories and inspirations behind the songs.

"The audience gets to hear all the songs," notes David Morgan, the show's front-of-house audio engineer; Andy Sottile handles monitor engineering duties. "They share in everything from a look at James' old black-and-white photos and home movies to stories of past girlfriends and adventures. There are plenty of opportunities for fun, too."

Morgan began working with Taylor during the artist's 2005 Summer's Here tour. Since March of 2006, Taylor has alternately traveled either with his full band or as a one-man act. The one-man show was captured for release on DVD this past summer by Sydney Pollack and Don Mischer when Taylor performed at the Colonial Theatre in Pittsfield, Mass.

### THE VOCAL APPROACH

"The first thing I wanted to examine when I came into this was his vocal sound," Morgan recalls. "He had been using a wide-pattern cardioid mic, an AKG 535, for quite a while, and had made a switch to in-ear monitors some time ago. I always try to put myself in the performer's place. We used the 535 for the four background vocalists on Whitney Houston in 1986 and 1987, so I know it pretty well. It's a great-sounding mic, but it lets in a lot of the outside world. I reasoned that if I were James, I'd want a vocal mic a bit more suited for use with my in-ears, a mic exhibiting greater off-axis rejection while still producing a rich and accurate sound."

In 2004, Morgan latched onto a pair of new unmarked prototype mics from Shure: One was a cardioid, the other a supercardioid. Morgan first used the

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supercardioid model on backing vocalist Margaret Dorn while touring with Bette Midler.

"It had a realistic vocal quality to it I had never experienced with a microphone designed for live sound applications," Morgan recalls. "It was clear, transparent, sweet sounding, quite honest and it worked well in Margaret's in-ears. Quite often with a tight-patterned mic, off-axis info comes back hard and distorted, but that wasn't true with this one. I went and listened with ear buds to what she was hearing, and the background info sounded amazingly true."

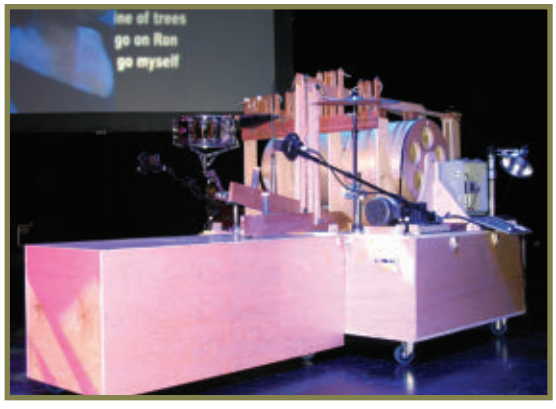
While he was working on Taylor's Summer's Here tour, Morgan's no-name microphones began being called KSM9s. By the time he showed up at One-Man Band rehearsals in 2006, he was using production model KSM9s.

## THE GUITAR SOUND

Taylor engages his audience with a pair of Olson acoustic guitars: a full-bodied concert model and a cutaway. A Telecaster makes an appearance for "Chili Dog" and "Steamroller," but the Olsons get the most use onstage.

The Telecaster is routed through a Line 6 PODxt Proa, which, according to Morgan, "works fine for this purpose, giving us a nice, distorted, bluesy sound without destroying the acoustic vibe of what's going on. We didn't want a single amp onstage."

Conversely, each of Taylor's acoustic guitars is outfitted with L.R. Baggs LB6 Series pickups. A unitary pickup and saddle commonly used by large-venue performers over the years, the LB6 is used with a Radial Engineering Tonebone PZ-Pre preamp leading into a Fishman Aura Acoustic Imaging Blender. "This combination gives a dimensionality to the instrument that enhances the illusion of space," Morgan explains. "Taking this route was all part of our never-ending search for reality; the strings sound as if they are resonating in wood, not across a crystal. Making an acoustic guitar sound real is a major sound reinforcement challenge."




*The handmade drum machine goes by various monikers, including "Gaddmatic," a name that pays homage to drummer Steve Gadd.*

## NEXT UP, PIANO

Morgan faces a similar dilemma every time he mikes the tour's 7.5-foot Yamaha C7 grand piano, which is played with the lid closed. To deal with this issue, Morgan devised a system based around a pair of Shure KSM44s, an Applied Microphone Technology M40 piano mic and a Barcus-Berry piano pickup.

"One KSM44 is placed on the low-end side just above the area where the strings cross," Morgan explains. "The other is on the high end, miking the smallest hole on the soundboard slightly off-center so that you hear a little ambience, too. The Barcus-Berry goes in the second largest hole in the soundboard, and the M40 goes all the way down to the nose of the piano, facing back at the hammers."

At the bottom end, the KSM44 favors a good, strong left hand, and in turn the Barcus-Berry adds high-frequency sparkle. Morgan predominantly bandpasses the M40 for low-mid warmth, while the second KSM44 over the small soundboard hole brings out high-mids. Atlas clamps hold the latter in place, along with gaffer's tape; a piece of Ozite carpet protects the piano from the clamps' setscrews.

"Each of the transducers adds its own unique component to the sound," Morgan adds. "It's like having a four-way crossover inside the piano. If you think about it, a closed-lid piano is somewhat of a contradiction, but is often a fact of life in a sound reinforcement situation. The instrument was meant to be played open. Add up the characteristics of these components, though, and it sounds real again."

## IN THE HOUSE

With input from the stage taken care of, Morgan's choice for bringing sound to the audience fell upon Clair Bros.' i3 line arrays. The enclosures are three-way in configuration and pack a pair of 12-inch LF transducers topped-off by twin 6-inch compression drivers. Morgan calls the enclosures "sweet-sounding boxes—the vocal sound that comes out of them, as well as that of the acoustic guitar, is absolutely perfect for the format we are representing and the venues in which we are performing."

*The One Man Band stage setup for Taylor and the other musicians*

Morgan mixes on a Digidesign VENUE D-Show Profile console, a compact board he's found well suited to the smaller theater aisles he's constantly negotiating. Describing the VENUE plug-ins as sounding like "equipment that could only exist in a dream a few years ago," he feels as if he's in a toy land, where he can pick from a full range of vintage compressors, reverbs and more. "All the wonderful stuff we used to see in studios in days gone by, equipment that would cost you a mint in rentals, are not pieces of gear you want to take on the road and break anyway. The whole VENUE console concept is geared around running a live show. You don't have to divert your attention or think too much to use it as a mixing platform."

Morgan's mix takes aim at trying to give the audience the impression that they're sitting in their own living room listening to a personalized concert. While quite a few effects are used in the show to obtain the realism for which Morgan is constantly striving, he stresses their judicious use.

"I was fortunate early on to have a mentor who gave me the greatest advice I ever got," Morgan confides. "Whenever you use an effect, bring it up to where you can hear it, then back it down a little. Along with that bit of shared insight, also remember that equalization usually isn't about adding what you want, but rather taking away what you don't need. All the artistry and subtlety of audio engineering really revolves around those two tips, and they serve me well as guideposts on this show, too." ■

*Nick Russell is a freelance writer in Chicago.*

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# AT THE END OF THE DAY I NEED TOOLS I CAN RELY ON... FOR ME, THAT MEANS KRK.

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BY SARAH BENZULY

# Horne Audio

## At the End of the Day, It's All About the Gear

In the highly competitive local sound reinforcement field—where the market is relatively small and saturated—at the end of the day, what helps you stand out from the competition lives in a warehouse: the gear. You can point to the quality of service or the largest festival or the most complex install as key elements to your success, but if your equipment list is not top-notch, then you're not going to get the gig.

This fact is exemplified by Horne Audio Inc. (Portland, Ore.; www.horne-audio.com), where the latest roadworthy gear is king. Granted, rider requests can weigh heavily on equipment choices, but president J. Peter Horne finds that he has to take rider specs with a "grain of salt." "A portion of rider requests are from experienced engineers who are asking for 'legitimate' items," Horne explains. "On the other hand, many requests come from guys who just request the flavor of the month. I love the guy who threw a fit because I wouldn't bring AKG 414s for overheads. Our 414s generally only leave the warehouse for special situations (piano, jazz or symphony miking). We, as a rule of thumb, provide Shure KSM 32s for drum overheads. Funny thing is, I charged for the 414s, brought them and the guy never used them.

*Peter J. Horne preps one of the company's systems for an upcoming gig.*

"Rider requests are just a starting point in the [equipment-buying] decision-making process," he continues. "While we do try to provide what people are requesting, other factors such as versatility, compatibility, longevity and cost, among other considerations, are also factored."

Taking a quick peek inside Horne Audio's warehouse shows that the company is focused on providing state-of-the-art gear, whether or not those pieces are commonly found in riders. For example, consoles available to such recent clients as Tenacious D's '07 West Coast tour, USTA Davis Cup, Oregon Jamboree, Oregon Zoo Summer Concert Series, Tony Hawk's Boom Boom Huck Jam Tour, and numerous radio station festivals and special events include choice models from Digidesign, Midas, Yamaha, Crest, Allen & Heath and Mackie. Speaker systems can include components from Electro-Voice's XLC/XLD/XLC215, EAW's KF850/SB1000, Stage Accompany's P16/26/C27 and Community's R2/R5. In addition to these touring necessities, the company carries a large stock in smaller-format speakers, monitors, amps, system processing, FX/dynamics, mics and wireless gear—the whole nine yards.

"We are constantly updating our inventory," Horne says. "Some of our recent acquisitions this year [2007] include digital consoles, L-Acoustics wedges and expansion to our wireless inventory. The upgrades that are planned for this year include the continued updating of our monitor inventory and exploring options to replace our aging 'trap box' inventory."

But this mass of gear did take time to accumulate. Horne Audio was formed in 1999 (Horne has been in the audio biz since 1976) by Horne, Bill Gardner (who now handles operations at the city's theater system) and Dave Caldwell (who is now in charge of maintenance and repairs, as well as lead engineer). The threesome found that Portland was sorely lacking in quality service and equipment from SR providers and that they could fill this niche easily. The company has since added Don Lindsey, head of operations, and currently has five full-time employees and another half-dozen who are used on a regular basis. During the height of the season, as many as 20 Horne employees can be found working at local gigs.

While there is stiff competition in town, Horne says that Portland is a busy metropolis, attracting enough events to keep the company very busy most of the year. He cites the city's, and Oregon's, quality of life as a perk. "Many quality engineers choose the Portland area as a place to live," he explains. "When these engineers are not on the road, I'm able to draw upon their experience and expertise to fulfill my needs.

"Sticking to a sound business plan—no pun intended—is critical for achieving success," Horne says. "We will continue to explore new opportunities while maintaining our current clientele and inventory. We have a reputation for providing the best equipment and service in the area. Because of that success, we're able to maintain our share of the market and keep our competition at bay." ■

*Sarah Benzuly is the group managing editor for* Mix, EM *and* Remix *magazines.*

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# New Sound Reinforcement Products

### DBX DRIVERACK PX

The first processor in the industry tailored for powered speakers, the DriveRack PX from dbx (www.dbxpro.com) offers an all-in-one solution to optimize powered speaker setups. The 2-in/2-out device (plus stereo subwoofer outputs) connects between a mixer and speakers, and features dbx's Advanced Feedback Suppression, Subharmonic Synthesis to extend bass response and PeakStopPlus™ speaker-overload protection. Additionally, an included dbx M2 measurement mic uses auto-EQ to correct for audible deficiencies in the room environment. It ships this month at a street price of $399.95.

### AUDIO-TECHNICA M2, M3 IN-EAR SYSTEMS

The M3 and M2 wireless in-ear systems from Audio-Technica (www.audio-technica.com) feature the company's Personal Mix Control, offering independent mix and volume control at the receiver. Both feature a lightweight bodypack stereo receiver and a stereo transmitter with two combo XLR/¼-inch line inputs, as well as A-T EP3 dynamic earphones with three sizes of flexible rubber eartips and a universal foam tip for a customized fit. The top-end M3 ($1,099) has 1,250 selectable UHF channels with up to 16 simultaneous systems per frequency band; the $799 M2 offers 100 UHF channels with up to 10 systems per frequency band.

### AUDIX CABGRABBER

CabGrabber™ from Audix (www.audixusa.com) is a simple, removable means of placing a mic on a guitar amp or cabinet without using a mic stand. It accommodates cabinets ranging from eight to 14 inches deep, and will securely support mics weighing up to 16 ounces. An adjustable arm rotates 180 degrees and locks into place for exact mic positioning. It folds compactly and retails at $59.

### PEAVEY VERSARRAY 212 LINE ARRAY

Designed for use in large venues with optional Versarray 218 and 118 subs, the three-way Versarray 212 ($4,399.99) line array from Peavey (www.peavey.com) has two 12-inch Black Widow woofers, 10 2.5-inch neo mid-drivers and four waveguide-mounted planar ribbon drivers. It's rated at 4,000 watts peak handling for the lows and 800W peak each for the mids and HFs. Each 13-ply Baltic Birch 2x12 enclosure has Peavey's bracket-and-pin flying hardware, allowing adjustments from 0 to 10 degrees for a multitude of array possibilities. The tri-ampable system has Neutrik Speakon 8-pin inputs in parallel with four Neutrik Speakon 4-pin connectors for the lows and mid/highs.

### DIGIDESIGN VENUE MIX RACK

Compatible with D-Show and D-Show Profile consoles, Mix Rack is a new, affordable hardware option for Digidesign (www.digidesign.com) VENUE systems, combining all stage, local audio I/O and DSP processing into a single 11-space rack. The base configuration has two Mix Engine cards (expandable for more TDM plug-in processing), D-Show Version 2.7 software, VENUEPack 3 plug-ins and an ECx Ethernet port for remote control. Audio I/O includes 48 analog XLR mic/line inputs, 16 XLR analog line outs (expandable to 32), eight analog TRS line-level I/O (assignable as discrete I/Os or insert pairs), 2-track analog/digital (AES or S/PDIF) I/O, word clock and MIDI I/O, and an analog aux/com input. Mix Rack supports up to 64 tracks of record/play integration with Pro Tools—or 18 tracks with Pro Tools LE—and modular card slots allow various analog or digital outputs and Aviom A-Net personal monitoring options.

### CERWIN-VEGA CVA-28 FULL-RANGE SYSTEM

Designed for stand-alone use or with the CVA-115, CVA-118 and CVA-121 active subs, the CVA-28 ($849) from Cerwin-Vega (www.cerwin-vega.com) is a three-way system featuring 8-inch drivers, a concentric compression driver and 400W of onboard amplification. Integrated flypoints and pole mounts allow the unit to be used in horizontal or vertical arrays. The compact (20-inch-high) cabinets weigh 48 pounds, have a 70 to 20k Hz response (±3 dB) and are capable of 128dB SPLs. ■

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BY EDDIE CILETTI

# Hard Drive Tales for a Rainy Day

## Your Data Is Key, So Make Sure You'll Have It in the Future

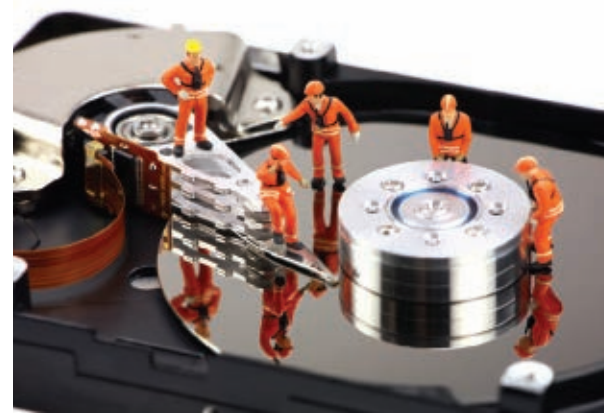

PHOTO: AMY WALTERS/SHUTTERSTOCK

Between my wife, my kids and myself, there are 10 computers in our house—three Macs, six desktop PCs and a lapdog. My wife, Polly, and I both work from home, so that explains why we need so many—one for her, the rest for me and the boys. Despite having dedicated audio and video workstations, my desktop PC sees the most use—and abuse. It's where the daily business gets done. While far from optimum for audio and graphic editing, it conveniently does more than its share of both. With two internal and at least one external drive, it's also where my Website, articles, schematics, data sheets, fave music and class materials are stored. So when that computer isn't happy, I'm not happy.

### ON THE ROAD TO GREEN

One of my good or bad traits—depending on your perspective—is that I hate to throw things away. A perfectly functional computer can be "recycled" to perform a lesser task—the kids' G3 iMacs and my dedicated Pentium 2 scanner being prime examples—because it is still quite usable (though this is a bad idea if you interpret Feng Shui strictly as uncluttered interior design).

The good news is that everyone is becoming more "green" conscious. This past fall, a locally sponsored electronic recycling event at the Mall of America parking lot yielded so many "contributors" that it overwhelmed and shut down the system. That so many people were saving their old junk and waiting for a free and convenient recycling opportunity sent a message that was heard from the big box stores and waste-management services all the way to government agencies.

### WIDE SCREEN

For all the different jobs I do, dual monitors are essential. And while a dual monitor card should minimize potential conflicts, it was actually at the root of a problem that plagued my office PC several years ago. Nothing makes us feel more helpless than the blue screen of death, which happened every few months for about a year. Through this experience, I figured out a recovery trick that's as simple as connecting the boot drive to another computer. Windows immediately recognized and fixed the "security descriptor" problems, after which the drive was as good as new. I did nothing but introduce one piece of hardware to the other. Next time a blue screen makes your day, try it; there's nothing to lose.

It wasn't until migrating to another motherboard that I accidentally stumbled upon the true cause of the problem: The OS install was done with a single monitor card. Everything seemed fine until the dual monitor card was installed—a more obvious conflict than before—but at least it happened right away.

Last summer, the analog monitor died on my scanning PC after 13 years of service. My office PC gladly gave up one of its own "tubes" in trade for a solid-state LCD upgrade, a stunning LG L226 22-inch, wide-screen display that was quite a bump up in terms of resolution and brightness. With its 3,000:1 contrast ratio, 2ms response time and 1,680x1,050 resolution, I was amazed at how small things could be made and still retain clarity—not a strong suit for analog but a piece of cake for the L226. The transition to an LCD screen took some getting used to; I'll explore more about monitor technology next month.

### DOS BOOT

Trying to bring your computer back to life? A common PC fix is turning off all resident programs that invade the Notification Area of the taskbar. This also applies to Pro Tools, which is particularly intolerant of background programs, especially anti-virus software.

When my current PC became sluggish, I immediately went on a search-and-destroy mission for viruses and adware to no avail. For a while, I even considered whether the new monitor's significantly higher resolution was taxing the system. Whenever a computer is unhappy, my first inclination is to pull the boot drive and start fresh. I'm no fan of trying to fix a boot drive while it's online and I don't know many people who can. A fresh install on a new drive can solve a lot of problems. In this case, the computer was too new and I wasn't ready to rebuild the desktop from scratch as there were just too many programs to load.

### UNCONVENTIONAL

I've been using low-capacity boot drives for the operating system and related files. Rather than let new programs install themselves into the Program Files folder, I keep a similarly named folder on a separate drive. I also prefer to create storage folders that are logical to

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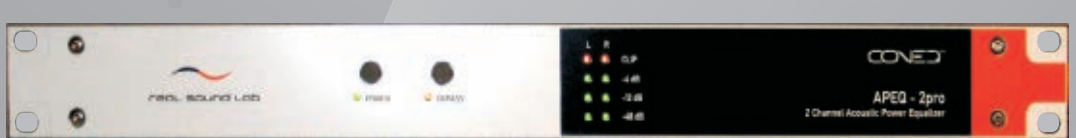


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me rather than use the "nested" approach of storing files within a program's folder. It's a no-brainer for people who work with audio and video to keep their files on a separate, portable drive; backing up is easier when you know where everything is.

If my program drive gets weird, then everything can be dragged and dropped to a new drive without angering the OS goddess. (Remember to identically name the new drive.) Despite my best efforts, iTunes managed to load itself and all of my music files on the boot drive until it eventually had so little reserve that defragging didn't help. This may have accelerated the problem.

## BOOT COPY

Cloning a boot drive is not drag-and-drop simple. After some frustration with a well-known boot drive–copying utility, I took advantage of a 30-day trial version of Future Systems' Casper (www.fssdev.com). It was so quick, easy and effective that I gladly gave them $50 for the license after the first day. The old drive was indeed the problem; my desktop and sanity (what's left of it) were preserved. Casper also reports on the drive's condition and suitability, as do other programs mentioned below.

## LISTEN TO THE DRIVE

One of the clues to my boot drive problem was a cyclical mechanical noise that occurred about every five seconds. My friend Dave Meyers suggested the problem might have been due to thermal recalibration issues. This is not a concern with modern drives, but it was back in the last century when this 8GB Seagate drive was made (in '99). If my experience serves one particular purpose, then it's that listening closely can assist in the troubleshooting process—a "country geek doctor" diagnostic tool, especially if your noisy computers are kept behind closed doors.

## REMOTE DIAGNOSIS

When my brother recently Skype'd me, I complained about a background noise that sounded like a bad fan-motor bearing. As he was wearing headphones and using the laptop's internal mic, the noise didn't bother him, but it made conversation impossible. Sure enough, he called me a few weeks later, saying his laptop died. It was a Dell Inspiron with an IBM Travelstar 2.5-inch drive. My geek buddies call these "Death Stars" due to their high failure rate.

When the laptop showed up, I pulled the old drive and immediately heard that telltale Death Star sound; something loose inside is even scarier when the platters are spinning at 5,400 rpm. So while loading a fresh OS on a new 80GB Seagate, I removed the old drive cover and the offending bit of techno-flotsam, popped the drive into an external USB drive case and powered up. Argh—it emitted a horrible clanking sound as I watched the head arm swing back and forth across the disk surface.

I had much better luck with a similar drive that seemed to spin properly but would not show up on my desktop. Again, I popped the cover to see what was going on, only this time there was no head movement. On a whim, I pulled the USB cable, which, on a drive like this, is also the power cable. Upon reinserting the cable, the head arm suddenly came to life and started doing its happy dance, bouncing back and forth as it read data and then popped up on my desktop. With a drive like that, I was dragging and dropping its data to one of my own drives within about two heartbeats.

## DATA'S NOT ALL, FOLKS!

Few things are worse than losing data, and let's face it, data-recovery services are beyond pricey. We can't have our ears on the drive 24/7, but, fortunately, there are programs that take advantage of a modern feature—Self-Monitoring, Analysis and Reporting Technology. S.M.A.R.T. keeps track of the vitals, including warning signs like how long a disc takes to spin up, or whether there's an unusual amount of errors. Products like ActiveSmart, DiskCheckup and Drive Health can be found on the Web.

My "take-the-long-way-home" approach might not seem to be an efficient use of time, but it serves multiple purposes, even in this world of iPhones, Blackberries and disposable everything. Anyone in the business of gaining access to and archiving older drives already face challenges like this (and worse). Right now, IDE is still a popular interface format and SCSI interface cards are still available. (You'll need one to connect drives that are a decade or so old.) But in 10 years, can you foresee the need to access drives you're using right now?

Aside from storing valuable data in multiple formats and places, experience also suggests the need to periodically exercise archived drives. But along with your meticulously documented backup files, don't forget that you may need spare interface cards—before they're available only on eBay. Like vacuum tubes and analog tape machines, vintage computer hardware might soon be the new retro. Or, as the Boy Scouts (and Tom Lehrer) always said, "Be prepared." ■

*Visit Eddie Ciletti online at www.tangible-technology.com.*


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# ADI-8 QS

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Reference quality . Fully remote controlled . Low latency converter design

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2 x ADAT I/O (8 channels, up to 96 kHz) . MIDI I/O . Word Clock I/O
optional: MADI I/O (I64 MADI Card)

**The ADI-8 QS** is an 8-channel high-end AD/DA converter with an unrivalled variety of features. The device combines excellent analog circuit design with the latest generation of extremely low latency AD/DA converter chips. Along with its integrated SteadyClock, the ADI-8 QS offers AD- and DA-conversion of the highest quality.

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**MADI.** With the optional MADI Card the ADI-8 QS offers even more options. The card features both an optical and a coaxial MADI input. The input is switched automatically, according to where a valid input signal is detected. Loss of signal results in an immediate change to the other input. The I64 MADI Card provides serial pass-through capability from one device to the next (up to 8 units), giving a total of 64 audio signals on a single line.

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# Tools of the Trade

### MOTU DIGITAL PERFORMER 6

Mark of the Unicorn's (MOTU, www.motu.com) flagship audio sequencer software is now up to Version 6 and features a complete user interface redesign, XML file interchange with Final Cut Pro, track comping, support for interleaved Broadcast WAV audio files, enhanced support for operation as a software front end for Pro Tools HD systems, pre-rendering of virtual instruments, better support for third-party Audio Units (AU) plug-ins and the ability to "bounce and burn" directly to an audio CD. Other features in DP6 ($795) include a vertically resizable track list, streamlined GUI with window tabs and a universal track selector that updates when switching to a different tab. Resident plug-in processors have also been upgraded to multimono use, and include the ProVerb convolution reverb and the MasterWorks Leveler.

### VIOLET AUDIO ADP61

Studios are having to come up with more surround A/V solutions for production than ever, and Violet Audio (www.violetaudio.com) has heard the call. The ADP61 ($1,199) preamp/decoder allows for monitoring and decoding all signals from stereo to 6.1 surround audio. It offers XLR outs and an infrared remote control to quickly switch between multiple sources, such as CD and video players, DVD player/recorders or TV systems. Decoding is provided for digitally connected devices that are compatible with Dolby Digital, Dolby Digital Surround EX, DTS, DTS ES, DTS ES Matrix, DTS 96/24, DTS Neo and more.

### JZ BLACK HOLE MICROPHONE

The Black Hole ($1,850) from JZ Mic (www.jzmic.com) is a compact and slim mic that comes with, as you might guess, a hole in the middle. The negative space incorporates a stand-holder system and shock-mount that give the mic the ability to swivel across its base. Rather than use a uniform coating of metal on the diaphragm, JZ uses a variably sputtered diaphragm comprising a specially mixed alloy. The mic offers three switchable polar patterns (omni, cardioid and figure-8), Class-A discrete amplifier circuit and two opposing electrostatic capsules.

### TASCAM DR-1

This handheld field recorder from Tascam (www.tascam.com) captures hours of program through integrated stereo mics to its 1GB SD card (included). A pair of mics, mounted on a variable mechanism, allows the DR-1 ($299) to record from any angle. Features include manual or auto-gain control and analog limiting, and a low-frequency cut-off to eliminate handling or wind noise. It records at up to 48k/24-bit to MP3 or WAV files, and runs on a rechargeable Lithium-Ion battery. The DR-1 speaks to the rest of the world and your computer via USB 2. Not only does it record on the go, it also features a built-in tuner, a vocal cancel function and an overdub feature for recording narration, singing or instruments over an existing track.

### MINNETONKA'S PLUG-INS FOR AWE

Minnetonka Audio Software (www.minnetonkaaudio.com) has released Master Bundle for AudioTools™ AWE V. 1.3 ($295). The group of processors and problem-solvers is specifically designed and integrated for use in AWE, the company's batch-processing app formerly known as Batch Pro. Plug-ins include Minnetonka Audio's TimeStretch and PitchShift (powered by iZotope Radius), and iZotope's Mastering EQ, Mastering Limiter, Mastering Reverb and Multiband Compressor. AWE is an automated audio workflow engine for editing, format conversion, encoding, plug-in processing and other processing through external I/O devices. It has the ability to process thousands of files in a single job. Processing chains can be auditioned and saved as templates. Advanced job-management features include hot folders, a job queue that manages any number of sequential jobs, robust failure recovery and job logs.

### SONY ECM-957PRO MICROPHONE

Field recordists will love Sony's (www.sony.com/proaudio) ECM-957PRO ($449.95) battery-powered stereo mic. It features M/S recording via two elements, one of which can be rotated to make the mic either front- or side-address and change the directivity from 90 to 120 degrees. The built-in M/S decoder and single AA battery operation ensures that this will be a popular item for recording on the go. Other features include a 50-18k Hz frequency response, max 115dB SPL handling, dynamic range exceeding 90 dB and an integrated 5-pin stereo XLR output connector.

### AUDIO-TECHNICA 40 SERIES

Audio-Technica (www.audio-technica.com) has released two new mic product bundles, the AT4040SP ($895) and AT4041SP ($795) Studio Microphone Packs. Both packages are optimized for live or studio use, and feature two mics from the company's 40 Series of condenser mics, along with mounting hardware, stand clamps, windscreens and protective wooden cases. The AT4040SP Studio Pack offers one AT4040 large-diaphragm, side-address cardioid condenser and one AT4041 cardioid condenser; the AT4041SP Studio Pack offers two AT4041 cardioid condensers.

### CENTRANCE AXEPORT USB DIRECT BOX

Portable instrument recording is made easier with the CEntrance AxePort™ Pro (www.AxePort.com) USB direct box. The tiny unit offers 24-bit/96kHz performance and a USB interface for tracking guitar or bass to most DAWs on Windows XP/Vista and Mac OS X platforms. The unit features

a rugged aluminum chassis and USB bus power drawn straight from the computer, negating the need for wall warts or batteries. AxePort Pro also features knobs for input and output level control, and is bundled with Guitar Combos amp-emulation software from Native Instruments, the CEntrance ASIO/GSIF universal driver cables and a carry pouch.

### SOLID STATE LOGIC DUENDE MINI

The Duende Mini ($995) is a new miniaturized version of SSL's (www.solid-state-logic.com) Duende DSP and plug-in platform. The unit is expandable, yet occupies just ⅓-rackspace. The Duende Mini is loaded with a base set of plug-ins that can be expanded when the user purchases a code to unlock the other plugs inside ($399 upgrade). Duende is based on the powerful DSP technology behind SSL's C Series digital consoles. Mini ships with the SSL EQ and Dynamics Channel, featuring a 4-band EQ, two shelving sections and two parametric, variable lowpass and highpass filters, switchable EQ characteristics between E Series and G Series EQ, Over-Easy soft-ratio compression, variable process order routing, and dynamics sidechain processing with independent sidechains for compressor and expander/gate. Mini also ships with fully functional trial versions of the growing portfolio of plug-ins available for the Duende platform.

### APPLIED ACOUSTICS SYSTEMS GS-1

You can play like your favorite acoustic guitar god with Applied Acoustics' (www.applied-acoustics.com) Strum Acoustic GS-1 ($229), an acoustic guitar software synthesizer based on the latest AAS physical-modeling technology. The collection features steel and nylon acoustic guitars, and includes elaborate voicing and strumming modules for the realistic reproduction of a guitarist's playing techniques. Chords played on the keyboard are automatically voiced for guitar, while strumming and picking actions are reproduced by an autostrum function, special strumming keys or MIDI loops. EQ, multi-effect and reverb modules complete the package. Strum Acoustic GS-1 runs on both Mac OS X and Windows as a stand-alone application, as well as in host sequencers supporting VST, Audio Units and RTAS plug-in formats.

## SAMPLEBASE.COM

Sound-seekers worldwide will want to check the Samplebase.com Website, which features a growing community of artists, many of whom are both contributors and users. Many top-notch artists provide instrument sets and construction kits for download, including Catalyst Audio, Kaskade, Def Jef, Peter DiStefano, Midihead, Heatseekers, Vienna Symphonic Library, Ilio, John "Skippy" Lehmkuhl and others. More than 150 SoundBlocks are available on Samplebase, and there is a free sample-synth player called Satellite that loads Samplebase SoundBlocks. The free version offers a basic set of features but can be upgraded to Satellite Pro ($149), which loads REX, WAV and ACID files, and includes a range of additional features.

## UNIVERSAL AUDIO LA-610 SIGNATURE EDITION

You can join an exclusive club of 500 Universal Audio (www.uaudio.com) LA-610 owners who purchase the LA-610 Signature Edition ($2,399), offered as a limited-run version of the best-selling LA-610 channel strip. The Signature Edition features U.S.-made NOS tubes, CineMag transformers and a blackface cosmetic look complete with its own certificate of authenticity from Bill Putnam Jr. Features that make this unit unique are hand-picked audiophile components and custom cosmetics, along with mic pre/DI with gain and level controls, E, and authentic Teletronix LA-2A–style, T4 opto-compressor.

## SOUNDSNAP.COM

Obtaining new sounds from notable film sound designers including Paul Virostek (*Million Dollar Baby*, *Ali*, *Batman Begins*) and Ric Viers (sound effects libraries for Apple, Adobe, Sonic Foundry, Hollywood Edge) is a snap at Soundsnap.com. The site features more than 35,000 original (and legal) sounds and loops that can be downloaded for free to be used in any kind of film, video, music production or Website. The Website has attracted a unique community of professional and amateur music producers, sound designers and musicians that constantly upload new material.

## PRESONUS DIGIMAX D8 MIC PRE

PreSonus' (www.presonus.com) new DigiMax D8 ($499) mic preamp features eight Class-A XMAX preamplifiers with trim control, eight direct analog outputs and ADAT optical I/O, offering 8-channel or dual-SMUX operation. The unit will convert at up to 24-bit resolution at 44.1/48/88.2/96kHz sampling rates, and features JetPLL jitter-reduction technology. Other features include direct outputs and inserts on every channel, and word clock I/O.

## AKG D 4 MICROPHONE

The new D 4 ($160) from AKG (www.akg.com) is optimized for use on drums, percussion, wind instruments and guitar amps. Built of rugged aluminum, the dynamic cardioid mic features AKG's Varimotion diaphragm technology, allowing the user to fine-tune the mic with no extra tuning resonators. Other features include custom-built capsule mounting, a spring-steel wire-mesh grille, an integrated stand adapter and a mounting bracket for attaching the mic to the rim of a drum. The mic will take a blistering 147 dB of SPL and offers a slight bump at 150 Hz and 3.5k Hz, rolling off at 100 Hz to be down -20 dB at 50 Hz.

## SONIC REALITY OCEAN WAY DRUMS

Ocean Way Studios and Sonic Reality have released the Ocean Way Drums (www.oceanwaydrums.com) virtual instrument/plug-in. Released in two versions, Ocean Way Drums Gold Edition (48k/24-bit, $995) is 40 GB in size while Ocean Way Drums Platinum HD ($1,995) has both the Gold Edition discs and a high-resolution, 24-bit/96k version that is 80 GB in size and pre-installed on a 10,000 rpm hard drive. Both editions feature 19 drum kits recorded in Ocean Way's Studio B, and come as both a 40GB sample library for Native Instruments' Kontakt 3 and as a Kontakt Player plug-in for Mac and PC with support for RTAS, VST, AU and standalone—all in one package. The collection offers up to 13 discrete mono or stereo microphone levels per drum, and comes with 12 mix presets per kit made at Ocean Way by studio owner and Grammy-winning engineer Allen Sides and producer/engineer Steven Miller. ■

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BY STEVE LA CERRA

# Yamaha LS9-32 Digital Mixing Console

## Front-of-House Desk Offers Bountiful DSP, Plenty of Extras

Since releasing the PM1D digital console eight years ago, Yamaha's design engineers have become quite skilled at migrating advanced digital mixing technology to lower price points. On the heels of the PM1D came the hugely successful PM5D. More recently, Yamaha introduced the M7CL and the subject of this review, the LS9. Available in 16- or 32-channel configurations, the LS9 packs serious DSP power into a compact desk that can be easily transported by a single person.

### QUICK AND INTUITIVE

My LS9-32 arrived literally hours before a series of local gigs with Wreckords Records artist Closenuf—just enough time to unpack it and give it a spin. Out of the box, the LS9 has I/O only on balanced XLRs: 32 inputs and 16 omni outputs. The input XLRs are self-explanatory. The output XLRs can be configured to serve as aux, group, matrix outs and main outs. At first sight, this was intimidating—I had visions of digging through menus just to learn how to assign the L/R master bus to two of these outs—but when I noticed that outs 15 and 16 were also labeled "L" and "R," I opted to leave the manual in the box and go for the snoop approach: Turn it on and see what happens.

*Yamaha LS-9 rear view features XLR I/O, word clock I/O, Ethernet and more.*

Within approximately 10 minutes of powering up, I was able to successfully do all of the following: connect the L/R master outs to a power amp, a Lab.Gruppen FP+10000; assign mix 1 to omni output 1 and mix 2 to omni output 2 for discrete monitor mixes; and assign rack 1 (a 31-band graphic EQ) to mix 1 and rack 2 (another 31-band graphic EQ) to mix 2 for monitor EQ. Within the same 10 minutes, I called up a great-sounding stereo reverb patch from the onboard effects library for use on send 13; recalled a mono delay from the library for use on send 14; edited that delay, named and stored it; tested all the inputs using a CD player; stored and named the console scene; and then left for the gig. The ability to do all this without cracking the manual is a tribute to Yamaha's operating system and the LS9's intuitive layout.

### LEAVE THE RACK AT HOME

Connecting a TRS line-level source to the LS9 requires either a direct box (in the case of the CD player, two Countryman Type 85s) or TRS-to-XLR adapters. For those in need of TRS I/O, the LS9's rear panel has two mini-YGDAI expansion slots (the LS9-16 has one), which accept cards for additional analog I/O, as well as ADAT, TDIF or AES/EBU digital I/O, and CobraNet. I was initially concerned that I'd have a cable problem at the gig, but then I remembered that I wouldn't need to bring my processing rack. The LS9's onboard DSP provides compression, gating, 4-band EQ and highpass filter on every channel, plus a total of eight patchable effect "racks" that are user-assignable.

Each channel also features a 100mm motorized fader, 7-segment LED meter, and buttons for channel on, SEL and cue. The LS9-32 provides control over a maximum of 64 inputs on two 32-channel layers (32 inputs via the XLR ins and 32 more via expansion cards). Four dedicated buttons let you choose between the two input layers—a "master" layer and a custom layer—where you can mix and match any combination of input, output and matrix channels or mix masters. For example, if you want the star channel, two aux masters and a matrix master on one layer, you can have that.

### NO TRS? NO PROBLEM!

Setup at the gig was a breeze. All I needed for patching was four XLR cables: two for the L/R bus and one each for the two monitor mixes. The band had a Shure wireless system, a bunch of wired mics and DIs for keys and bass, so the fact that I had no TRS I/O was no problem. Gain for the head amp is digitally controlled across a range that encompasses line- through mic level, negating the need for a mic/line switch. When you store a console scene, the gain is also stored. Occasionally, I could hear "stepping" while adjusting head-amp gain, which is not unheard of in digitally controlled analog preamps.

During the first show, I had no problem getting around the LS9. While mixing, I was able to quickly find the Preferences page where I could set the desk to auto-select, so that by touching a channel's fader or button I could automatically select it for editing using the dedicated channel controls. These controls are found next to the color LCD and include head-amp gain, pan, selected send, dynamics 1 (threshold)

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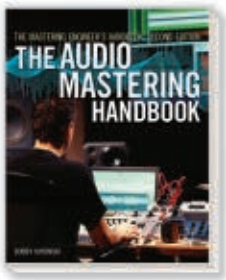


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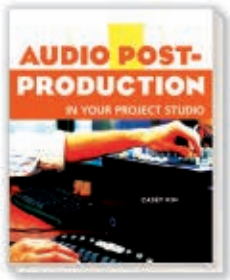


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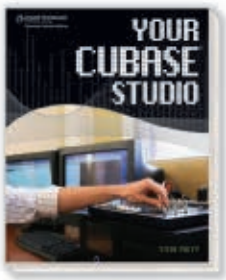


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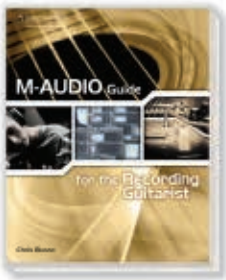


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*The USB slot accepts up to a 2GB stick and allows recording of the desk's output to MP3 files.*

and dynamics 2 (threshold), and a set of EQ controls. You can also view the desk's parameters using the increment/decrement buttons, cursor and data wheel, all of which were easy to read, even in a club's dim lighting.

To the left of the LCD are a series of lit push-buttons divided into two groups. One group provides access to mixes 1 through 16, while the other set is for global controls such as scene memory, monitor, setup, channel job, recorder, meter and racks 1 through 4 or 5 through 8. Thanks to these hot buttons, navigating the LS9 is very rapid. Once I had the mix up during the second show, I was able to name channels (kick, snare, etc.) and assign icons to each channel—the band really got a kick out of that. Ringing out the monitor wedges using the 31-band graphic EQs was facilitated by switching the EQ to Fader Assign mode, in which the faders function like the sliders on a graphic EQ—very slick and *way* more intuitive than using scrolling cursors and rotaries. Directly underneath the LCD are two extremely important controls labeled Cue Clear and Home. Home is invaluable: Any time I was into a deep menu, all I had to do was hit Home and the selected channel reappeared on the LCD. Cue Clear does exactly as it name implies, and is a control that every console needs.

Pressing any Mix button once tells the LS9 which send you want to address using the Selected Send rotary in the selected channel section. (This procedure isn't as convoluted as it sounds.) If you press the Mix button a second time, then the desk enters Sends on Faders mode, in which the faders control send level. While this is happening, the LCD blinks "Sends on Fader" to remind you that the faders are changing aux levels, *not* level to the L/R bus. Because I had two monitor mixes running, I could toggle between the two and clearly see what faders were routed to which mix and then hit Home to jump back to the house mix. Monitor engineers will love this feature.

## PLENTY OF DSP

As I expected, the LS9-32 is loaded with DSP, but unlike some of its competitors, the channels on the secondary layer (channels 33 to 64) are not crippled; you get exactly the same EQ, routing and dynamics capabilities on all 64 channels. Channel EQ is capable of subtle changes or serious "surgical" manipulation. When you are not on the Home screen, moving any of the selected channel knobs causes a pop-up window to appear that shows the value of that parameter. I found that when adjusting EQ, I could summon a shortcut to the EQ display that let me view the curve I was carving: Quickly press one of the EQ controls and then press Enter. (This works the same way for the threshold controls and the dynamics screen.) This works much faster during a show than using a cursor to navigate the screen to gain access to a particular processing section.

The dynamics capabilities should accommodate any application you might require. Dynamics 1 offers a choice of gate, ducking, compressor or expander, while

dynamics 2 offers compressor, compander (hard), compander (soft) or de-esser. Compression can be set to run the range from subtle to completely squashing the audio signal. In one situation, when I mixed a dance-music diva with serious pipes, I used the EQ to pull out a bit of 3.5 kHz, as well as heavy compression to tame her peaks, which resulted in a smooth, *musical* vocal sound.

## EXTRA, EXTRA

One of the LS9-32's bonuses is a built-in USB recording/playback device. The USB port accepts a standard memory stick (up to 2 GB) and allows you to record the desk's output to 96, 128 or 196kbps MP3 files. You can record audio from any bus on the console and route the player's output either to a physical output or internally to two channels. The USB recorder can also play MP3s that are stored on the stick. MP3s may be linked to scenes so that when a scene is recalled, a specific MP3 plays automatically. (I admit that I had to read the manual to learn how to do this.) This feature will be a boon in theater applications.

the traditional 31 graphic bands can be active, which is useful when mixing IEMs or stereo wedges.

## A CLEAR WINNER

One of the LS9's most important features is its sound—excellent. The audio paths are clean and have enough headroom to handle hot inputs, despite the absence of a dedicated mic/line switch, and the mix buses are as quiet as the day is long. In addition to the effects mentioned, you get chorus, flange, echo, tremolo and pitch shift of the Yamaha SPX nature that we all know and love. After using the LS9-32 for several weeks, it became apparent that this console is intuitive enough for less-experienced engineers and deep enough to perform some very serious routing assignments, including discrete L/C/R panning. Equally important, the operating system is rock-solid.

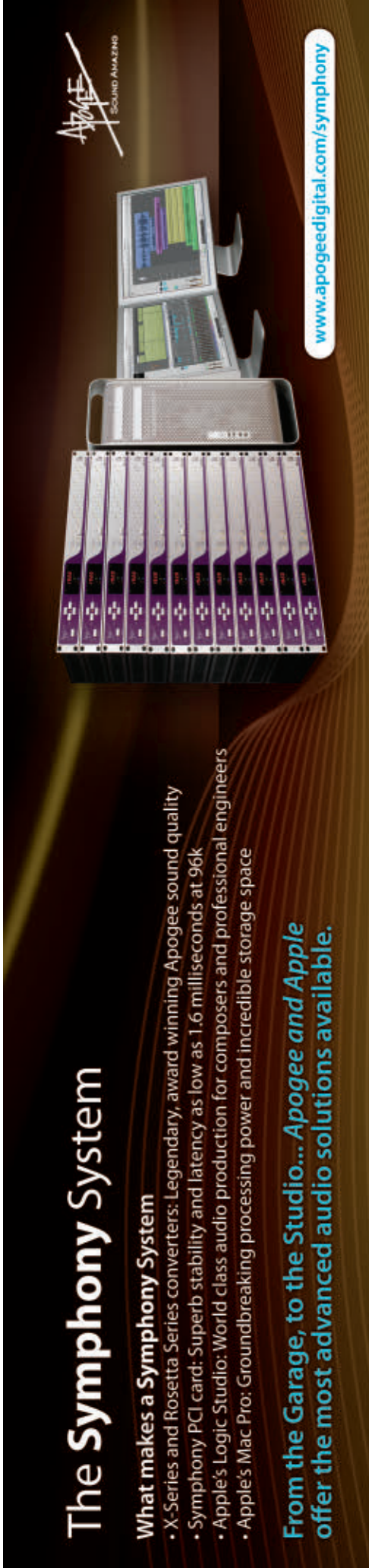
For many local gigs, I wrapped the LS9-32 in a blanket and transported it in the hatch of my Volkswagen Golf. It fit perfectly, and I was able to carry it solo. The power supply is built-in, as well as everything else you need for the "front end" of a *very* impressive P.A. system.

***The expansion slot offers TDIF, ADAT, AES/EBU, CobraNet and analog options.***

Other features include assignable talkback, 12 user-defined function keys (I used two to bypass my main stereo effects) and the ability to link channels in nonstandard pairing. At one show, drum overheads were patched to channels 8 and 9. The LS9 can pair those channels, whereas many digital desks can pair either 7/8 or 9/10. Along with the 31-band graphic EQ, the LS9's Flex15GEQ provides two linkable channels, where up to 15 of

The LS9 brings big-ticket digital console operations down to earth, perfectly bridging the gap between consoles that aspire to a professional level and consoles that cost the same as a hot sports car. There isn't much that the LS9 can't do, and it's likely to be a favorite among regional sound companies that want to take it up a notch. Prices: LS9-16, $5,999; and LS9-32, $10,999.

Yamaha, 714/522-9011, www.yamahaproaudio.com. ■

BY KEVIN BECKA

# Neumann KM D Digital Microphones

## Integrated Converters, DSP and Remote Control Via AES 42

Since the DAW became an audio standard, the idea of a purely digital signal path from mic capsule to storage medium has interested more than a few engineers. That was all but a pipe dream until 2001, when Neumann—the first company to offer a condenser microphone, switchable directional response, a stereo microphone and 48-volt phantom power—lived up to its pioneering legacy with the release of the D-01 digital mic. The Solution-D large-diaphragm digital mic was truly groundbreaking, offering converters in the mic and supporting the new AES 42 standard to both transmit signal and provide synchronization and remote control of pattern, onboard DSP and other parameters. The beauty of this system is that no mic preamp is needed; gain is strictly digitally controlled in the mic itself.

The next-gen Solution-D model from Neumann, and my review unit, is the KM D Series, a small, front-address pencil mic that offers DSP, switchable capsules and, like its predecessor, remote control. It can be purchased in a nickel or black Nextel finish and comes with Neumann's RCS (Remote-Control Software, Mac/Win). Although it is possible to run the system without the software, I found that it offers a welcome and easy-to-use interface.

### DIGITAL SOLUTIONS

The KM 184 D looks much like Neumann's existing KM 180 and KM 100 Series analog mics. It can be operated from 44.1 up to 192 kHz without external converters, and it offers five capsule choices: the KK 131 (free-field-equalized omnidirectional), KK 143 (wide cardioid), KK 145 (cardioid with low-frequency roll-off), KK 183 (diffuse-field-equalized omnidirectional), KK 184 (cardioid) and KK 185 (hypercardioid). To operate, the mic requires a base unit: either the DMI-2 digital microphone interface or one of the less-pricey S/PDIF or AES/EBU connection kits, which can also provide battery power for remote situations. Should you want to take this concept to the next step, this past November RME released the DMC-842, an 8-channel AES 42 interface with a MADI option. At press time, it was rumored that Neumann is working on its own similar interface slated for release later this year.

I had a pair of the KM D digital mics with a few different capsules and used them on several computers and sessions with excellent results. The RCS software loaded easily and communicated with the mics without a hitch. Although I had the full range of connection kits at my disposal, the DMI-2 was the only choice for me, as the smaller, portable connection kit doesn't allow you to change levels or have any other mic control or options. The mic itself will store the DMI-2's settings for use with the smaller connection kits, but I found this scenario unworkable in a session framework where levels may need adjustment at any time. The RCS software is absolutely essential when managing gain as there is no hardware control on the DMI-2. More about that process later.

The software offers basic gain control, level meters and gain-reduction meters,plus some interesting extras. For instance, each mic has onboard DSP in the guise of a compressor/limiter, de-esser and peak limiter, which can be controlled remotely from the RCS interface. There are also three test tones: white noise, pink noise and a 1k tone generated from the mic that can be switched on and off using the software, making troubleshooting an easy venture. A quirky extra is the ability to remotely turn on and off the mic's piercing-blue LED. Although not useful in my setup, I could see where this feature could be tied to other console or DAW functions, such as a Record button, provided that the console or DAW was AES 42 compliant.

### AES 42 PIPELINE

I wanted to explore the upper ranges of the mics' sample rates, which required 110-ohm cabling. Neumann states that regulation cabling up to 48 kHz can be used, but the manufacturer recommends an AES-standard 110-ohm cable (up to 300 feet) when you are operating the mics at any sample rate above that. This presented a problem because I was in a studio where the live room had traditional cabling in the walls with no other pass-through access readily available. My enthusiasm for hearing these mics at their best led me to Hosa, which generously provided two 120-foot (and pricey) 110-ohm AES cables so I could run them from my control room, out the door, down the hall and into the studio.

For this setup, the DMI-2 was in the control room next to the computer and was fed by the two cables from the mics. I patched a BNC word clock signal from a Pro Tools HD 192 I/O interface into the DMI-2 to provide a clock source. The DMI-2 has its own word clock that will automatically sync the mics if no external source is available. Next, I fed a Cat-5 cable out of the DMI-2 into the computer via a Cat-5/USB turnaround (provided). This connection was used to communicate to the mics through the RCS software. For the audio connection to the DAW, the DMI-2 sums the two separate AES 42 mic signals and sends them out as an AES stereo pair on a single cable, which I patched into

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the 192's AES/EBU enclosure input.

### LET'S HEAR THEM

I first used the mics to record three different drum kits on different sessions at 96 kHz. I employed them as cardioid overheads twice, and for the third application as a pair of room mics using omni capsules. The first thing I noticed—or actually *didn't* notice—is the noise floor: It's conspicuous by its absence. Even with the gain cranked, the signal is crystal-clear. The air at the top is open and natural, and everything else sounds even and just as it should sound: like you're in the room.

As overheads, the mics portrayed the cymbals crisply with no brashness or clang. Tom and kick hits were tight and precise with great transient response. When the other mics were brought into the mix, the kit sounded beautiful. As room mics, the omni capsules represented the room beautifully, with great off-axis response, plenty of low end from the front of the kit, and an even and clean "roominess" from the boundaries. I found that I was able to use these overhead and room tracks with just a kick and snare drum close-mic for a great and full kit sound.

It's worth noting that the software is simple and the GUI easily floats above your DAW's session window. I found that once I set up the mics, I forgot about the software just as I would a mic preamp if the levels looked good. I used the integral tone generator every time I set up the mics; it's a great added feature, allowing me to pay attention to the session setup and getting signal through the system, even if I were alone in the building.

When using the mic's integral compressor, latency was a major issue. The software compression sounded great and works fine if the player didn't have to hear the audio through a cue send, but in an overdub situation they'd be unusable.

I then used the pair with cardioid capsules to record an acoustic guitar, and the results were stellar. Because the mics are so clean, you hear every detail of picking and the physical sound of the human hand on an instrument. The guitar player commented that the tracks sounded just like his instrument, with little coloration throughout its range. The tone was even from top to bottom, and the air on top made it easy to stay away from any EQ.

### IS IT DIGITAL TIME YET?

The sound of the KM D Series digital mics is truly delicious. In every situation, they were crystal-clear, providing an incredible level of detail and transparency. However, when setting them up, be prepared to provide some extra special infrastructure and be somewhat inconvenienced. They'd be ideal for use in an open-area recording situation like a concert hall, where you could run cables up to 300 feet without any barriers, or left set up in a personal recording space where you could set and forget. But in a traditional studio setting where setups vary, walls separate you from your source and you don't have 110-ohm cabling throughout, you may have to jump through some hoops for optimal performance.

All that said, nothing great is ever achieved without a little extra effort, so get out your wallet and prepare to be dazzled. These mics set a new standard for recording and give purists a new path to audio nirvana. Prices: KM D Series mic with one capsule, $1,958; extra capsules, $798 each; DMI-2 2-channel interface, $1,418; AES or S/PDIF connection kit, $198.

Neumann, 860/434-9190, www.neumannusa.com. ■

*Kevin Becka is* Mix*'s technical editor.*


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BY JIM AIKIN

# Steinberg Groove Agent 3 Software

## An Easy Way to Get Smart Drum Tracks

For producers, songwriters and musicians who need to create bed tracks for a variety of uses, Groove Agent 3 (GA3) has a lot to offer: a wide variety of pop drum grooves and fills in familiar styles, stylistically appropriate kits with some basic sound parameters and the ability to edit the drum parts as MIDI tracks. Version 3, developed for Steinberg by Bornemark Software, has some important new features, including the ability to use your own samples within a Groove Agent kit. The style palette includes more than 100 choices, from bop and slow blues to hip-hop and trance, and each style has more than two-dozen patterns and two-dozen fills.

I've been producing a lot of backing tracks lately, so I immediately pressed GA3 into service in a Latin-flavored arrangement. It delivered the cooking samba feel that I needed, but as I got deeper into the software I ran into some design issues that left me feeling frustrated.

### OPENING UP THE KIT

Installation was painless. I already have a Syncrosoft USB dongle (required, but not included), so before long I was checking out the styles and patterns. Each style comes with a predefined kit of sampled drums, but you can unlink them if you want to play, for instance, a country train beat–style with an electronic kit. Most of the drums are multisampled with velocity cross-switching, and an ambience knob can be used to crossfade between separate dry and room samples.

The kit has an 8-channel mixer, with each channel handling several drums; all of the toms are on one channel, for example. As I like to put the sidestick and snare on separate channels to give each its own reverb, this design is not ideal for me. Each channel has velocity, tuning, decay, ambience and volume knobs, so it's not possible to adjust the tuning of one tom independently or change the ambience of the sidestick without affecting the ambience of the snare. There's no panning or filtering for the drums, but GA3 has 12 stereo outputs, each with its own compressor and graphic EQ. Any drum channel can be sent to any output, so you can pan and process them in the host sequencer.

I had no trouble loading a few of my own samples into GA3's user setup. This provides 27 slots, which are pre-assigned to the channels. There was no way to set up my own velocity cross-switching, but each slot can load dry and ambient samples, plus volume, pan and dry/ambient balance knobs.

My rapidly aging but still capable 3GHz Pentium 4 with 1GB RAM meets minimum system requirements, but I had to increase the latency on my Yamaha mLAN ASIO output to avoid buffer under-runs. The latency was still acceptable at the higher setting, but this is the first time I've run into the problem. GA3 also needs lots of memory; I encountered a few log-jams when it needed to pause and load more samples during playback. Steinberg recommends 2 GB for GA3 users, and so do I.

*In Dual mode, GA3 can don disguises as Special Agent (top) or Percussion Agent (bottom).*

### TAKE IT FOR A RIDE

In Classic mode, the panel houses a small but useful set of buttons and knobs. You can switch from snare to sidestick; tap the Accent button; add a one-measure fill; switch to a half-tempo feel; turn the Auto-Fill knob so that GA3 adds fills every two, four, eight, 12 or 16 measures; or add a bit of randomness to its choice of either patterns or fills. Each channel in the mixer has mute and solo buttons, and there are global ambience, humanize and shuffle knobs.

After setting up the panel controls, I tried to use one of the 10 memory buttons to store my setup. Trying to store the new setup actually destroyed it instead—a bug that wasn't fixed in the V. 3.01 release. The workaround turned out to be simple: When I clicked on a memory button before I started creating a setup, this setup became "live" and my changes were stored in it correctly.

The Shuffle knob can add only eighth-note–based shuffle. Many modern styles rely on 16th-note shuffle, and the Shuffle knob on GA1 delivered it. Because I normally export GA3's pattern data to MIDI tracks and quantize them there, this is not a big deal. Most sequencer-quantize utilities can add variable amounts of 16th-note shuffle.

### THE KICK

There are two ways of working with GA3 in a host sequencer. With Steinberg Cubase as a host, I used GA3's MIDI output Live to Host switch to capture some variations and fills in a MIDI track. I was then able to cut and paste the patterns I liked, adjust velocities, quantize, delete notes and so on. The MIDI output contained some extremely long notes, apparently due to GA3's failure to transmit note-offs, but a quick trip to the Cubase Logical Editor brought these into line.

I reported the same problem several years ago while using the original Groove Agent in a much earlier version of Cubase, and at the time Steinberg said it was unable to duplicate it. After I reported it again while testing GA3, I was assured it had been fixed in the 3.01 update, but it hadn't been.

If your DAW can't record MIDI data coming from a VST plug-in, then you can run GA3 in stand-alone mode and switch its MIDI output to Record to File. When I tried this, GA3 created a MIDI file on my desktop, which I then dragged and dropped into a sequencer track.

I also tried letting GA3 play its own patterns in sync with the Cubase transport

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while I automated its controls to switch among the patterns and fills. Automation worked as expected, but with a couple of caveats. First, changes from one pattern to another have to be automated a bit ahead of the beat. If this data is on the beat, then pattern switching will sometimes happen one bar late because GA3 only switches to a new pattern on the bar line. If it has already started a pattern before it checks the input for automation data, then the switch to a new pattern will be delayed. Second, automating parameters using the memory slots in Percussion Agent (see below) consistently produced a mess. Even something as basic as Percussion Agent's Start and Stop buttons couldn't be automated correctly.

### THE SNARE

New in GA3 is a double-dose of groove called Dual Mode, in which the upper and lower slots can each hold the standard Groove Agent configuration; a module called Percussion Agent that plays tambourine, conga, bongo, woodblock, cowbell, triangle and shaker patterns; or a loop-based live drum performance called Special Agent.

Percussion Agent has eight channels. Each can load any of the 39 patterns, and you can choose a complexity setting from 1 to 5. A very cool groove-offset parameter lets you stagger any channel for more still variety in the rhythm. I was disappointed to find that Percussion Agent doesn't transmit its patterns as MIDI, nor do these sounds respond to incoming MIDI notes. The main advantage of Groove Agent—the editability of the patterns—is not available in Percussion Agent nor in Special Agent.

Percussion Agent's panel buttons can respond to MIDI note messages. This provides a second automation method, but using it is needlessly difficult. At least in Cubase 4, if you start playback mid-song, MIDI tracks can't "chase" the values of notes earlier in the song if the notes have ended. Creating legato lines in the MIDI tracks being used for Percussion Agent automation will allow it to play the correct pattern at all times, but values other than pattern selection and pattern mute can't be automated in this manner.

Special Agent supplies fully professional, nicely recorded drum loops in 15 styles such as jazz, ballad, Motown and four-on-the-floor, each with a couple-dozen complexity levels and the same number of fills. There's very little you can do with these loops, rhythmically or sonically, other than change the ambience and pre-delay knobs or cue the fills.

Special Agent's auto-fills can be triggered every two, four or eight bars, and are always one bar long. In some of the styles, the Special Agent drummer was pushing the kick just a bit. As a result, with some combinations of pattern and fill, the kick flams at the beginning of every auto-fill. Again, I reported this defect to Bornemark while working with V. 3, and I was assured it had been fixed in the 3.01 update, but it wasn't, at least not consistently across all styles and patterns.

### THE CRASH

Between the problems in the automation area, the useless Shuffle knob and the inability of the Percussion Agent and Special Agent sub-modules to export their patterns as MIDI data for editing, I'm not nearly as excited about Groove Agent 3 as I had hoped to be. I'm sure I'll be using Groove Agent for songs in mainstream styles. It's a good-sounding and useful plug-in, but it could have been a whole lot better. Price: $299.99.

Steinberg, dist. by Yamaha, 714/522-9011, www.yamahaproaudio.com, www.steinberg.net. ■

*Jim Aikin is a contributor to* Mix *and* EM.

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BY BOBBY FRASIER

# KRK Exposé E8B Studio Monitors

## Redesign Offers Accuracy, Punchy Bottom and Smooth Top

KRK, the brainchild of engineer Keith Klawitter, has been building studio monitors since 1986. The company's flagship product, the Exposé, has undergone numerous changes, at times incorporating an inverted-dome Kevlar tweeter and a titanium tweeter. The current Exposé E8B model sports a completely new, exotic tweeter configuration. At $3,250 each, the E8Bs are pricey for the project studio market, but nonetheless are poised to attack their competitors in the exacting near- to mid-field reproduction range. Although some of the E8B's design is old-school, the results are worth hearing.

### DIVINE DRIVERS

All of KRK's speaker lines are notable for their characteristic yellow cone drivers. The E8B doesn't disappoint, and uses an 8-inch dual-layer Kevlar woofer, and a substance known as Rohacell®. Used with Kevlar, Rohacell provides an extremely stiff cone structure with a low-weight-to-high-stiffness ratio, which results in a faster response time with less mechanical distortion in the subwoofer. The woofer is indeed fast and punchy, sounding superb on heavy beat-driven dance material, while also providing subtle details in an upright bass and the low end of a jazz piano.

Reproducing the top end is an all-new, 1-inch, inverted-dome AlBeMET tweeter. AlBeMET is a composite material comprising aluminum and beryllium, which offer extremely flat HF characteristics all the way out to 30 kHz within ±1 dB. Like the woofer, this transducer is designed with a very high-stiffness-to-low-weight factor, essentially extending the bandwidth on the top end of the frequency spectrum. The resonance of AlBeMET is considered beyond the range of human hearing, thereby virtually eliminating second- and third-order harmonic distortion. I'm convinced: These tweeters have a beautiful silkiness that is smooth and accurate.

### POWER TO THE PEOPLE

The E8B's are bi-amplified, using dual 120-watt discrete Class-A and Class-A/B designs that cross over passively at 1.9 kHz. Signal below 8W operates in Class-A mode; crank up the volume and the amps go into Class-A/B mode. I really noticed the level of detail when monitoring at very low levels. The Class-A mode made it quite easy to calculate subtle mix changes—the mix elements' relational values are kept intact and, of course, monitoring at these lower levels greatly reduces ear fatigue. But if you need the pressure, these speakers will produce 115dB peak SPL, with a frequency response of 40 to 30k Hz, ±1 dB. They're extremely flat.

To adjust the speakers for optimal playback in my studio's listening space, I was able to experiment with the woofer and tweeter response using several controls that are provided on the back of the E8B. System Level Adjust has an infinitely variable range of -30 to +6 dB to control the sensitivity of the input signal. The HF Shelf Switch adjusts the high frequency above 10 kHz in 0.5dB steps from +1 to -2 dB. The HF Level Adjust alters the tweeter level throughout the entire frequency spectrum (above 1.9 kHz) in 0.5dB steps, from +1 to -2 dB. I found that leaving these controls flat worked well in my room. The LF Adjust switch is used to compensate for the low-frequency buildup that can occur when any speaker is placed against a boundary. The three selections offer a -3dB roll-off at 45, 50 or 65 Hz. A single, balanced XLR for input rounds out the back panel.

After using the E8B monitors for some period of time, I found that subtle mix changes were more noticeable. Small increments, such as 0.2 dB on cymbals and 0.5 dB on acoustic guitars and vocals are easily heard, which allows you to truly fine-tune your mix. The low end is exceptionally accurate, with bass guitars and kick drums holding their space, with no apparent smear or resonance. The front-port design leads to a punchy and in-your-face bottom end, allowing subtle changes to come to the front. The smooth midrange response gave me confidence when mixing vocals and editing, knowing that my decisions were accurate and would transfer well to other systems. Imaging is superb, with reverb tails becoming almost three-dimensional in depth.

### A FINE FINISH

KRK has taken basic design characteristics and polished them to a fine sheen. Its criteria was to focus on spectral balance, distortion management and resonance management. The E8Bs do not incorporate networking, auto-alignment or software operations—features that might be important to some engineers.

Instead of pushing that particular technological envelope, KRK chose to produce an optimal transducer that lacks bells and whistles, but excels in what the company calls "accuracy, transparency, flat response and the truth." I believe that KRK has met its goals, producing a monitor that can be used in many different applications. The E8B transfers well, has great low end and pushes the boundaries for accuracy on the top end. I found the monitors easy to listen to and accurate at all sound pressure levels, experiencing no ear fatigue after lengthy sessions.

KRK Systems, 954/316-1580, www.krksys.com. ■

*Bobby Frasier is an audio consultant, engineer and guitarist/vocalist in The Beatles sound-alike band Marmalade Skies.*

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BY BARRY RUDOLPH

# Creation Audio Labs MW1 Studio Tool

## Versatile Tone-Bender Splits, Marries Line-Level and MI Gear

The MW1 Studio Tool ($995), inspired by engineer/producer Michael Wagener, is an all-analog, bidirectional interface/distribution system for connecting +4dBm line-level studio units to and from instrument level gear, such as amps, stomp boxes, keyboards, guitars and basses. The MW1 was specifically developed to allow artistic control over level and tonality through gain-structure modification and impedance matching. Combine those abilities with flexible signal routing/interconnection, low noise and an excellent sound quality, and this single-rackspace unit quickly adds up to something greater than the sum of its parts.

The well-written manual divides the MW1 into two sections called "Going To" and "Coming From," whose controls are laid out on the left and right side of the front panel, respectively. The included functional block diagram—which shows all of the internal signal paths, amplifiers and I/O—helps with learning, connecting and using this unit.

### GETTING IN

Simply put, the Going To side converts the signal levels from guitar/basses or keyboards to pro +4dBm line-levels. In addition, Going To provides both buffered and boosted-buffered ¼-inch instrument output signals to drive external amps simultaneously.

Following the only ¼-inch instrument input jack on the unit is an input-Z attenuation control that adjusts the input impedance by varying the positive feedback network of the input op amp stage. This control is continuously adjustable from 10 kilohms to more than 10 megohms, and works like a tone control by loading (for warmer) or not loading (for fuller range) your instrument pickup's output. This is followed by a ¼-inch tuner/instrument output that's always active, and can be used to drive a guitar tuner, effect pedal or a secondary guitar amp. Following the tuner output is a mute button with an LED indicator that prevents the signal from traveling any further within the Going To side.

The signal then splits into two paths, with one path going to drive a balanced XLR line output with a 0 to 30dB level control and both a polarity-flip button and LED "traffic light" showing green (signal present), mixed (12 dB of headroom) or red (6 dB of headroom).

The other path goes to a clean boost section for up to +30 dB of boost before going out its own ¼-inch buffered output jack. Boost is used to overdrive a guitar amp's preamp section or to add gain for piezoelectric or very old single-coil pickups. You also get an LED tri-level indicator and an output-impedance control that acts as a subtler tone-shaper by deliberately matching or mismatching the impedance in relation to the guitar amp's input. Boost output impedance ranges from 50 to 100 kilohms.

### GETTING OUT

The Coming From side converts +4dBm levels coming into the rear panel's female XLR using a calibrated attenuator circuit over to lower instrument levels. Essentially a backward-working active direct box, the Coming From section has an attenuation range of -36 to 0 dB, a polarity-flip button and signal-present LED. This section also has an output impedance–adjustment circuit with a range of 50 to 100 kilohms for its ¼-inch instrument level output jack.

All ¼-inch I/O jacks are either Neutrik gold or mil-spec Switchcrafts, and are duplicated on the back panel with their function names backlit by LEDs. This slick-looking feature would be a nice addition to the front panel if space permitted. The rear panel gold-pin Neutrik XLRs have recessed push-buttons that connect pin 1 to ground or not; another push-button is used to lift the chassis from system ground.

The unit is RoHS-compliant and runs on AC voltages from 100 to 250. The latest Burr-Brown OPA/DRV x134 family of op amps is used throughout, along with Panasonic pots, gold-plated C&K switches and all surface-mounted components.

### FUN IN THE STUDIO

For my testing, I used a 1968 Fender Paisley Telecaster (single coils), a Divide By 13 FTR 37 amp or vintage Fender Twin, a Marshall 4x12 cabinet with vintage 30-watt Celestion speakers, and the highest-quality guitar and speaker cables.

Cranking up the boost channel's gain and reducing the volume on the attached guitar amp distorts its preamp section, resulting in a cranked-up Vox AC30 tone in the case of my amp and cab combo. I liked the fact that the boost output at 0 dB (fully counterclockwise) was immediately hotter and sounded unlike the tuner/buffered output.

I then played through two amps at once by connecting the second amp to the tuner/buffered output. By loading the front end of one of the amps with a much lower impedance, I was able to get a tone that was darker and thicker—clarity from one and "hair" from the other—offering a mixer an abundance of tonal choices. If you unite the Going To side to the Coming From side by using a short XLR jumper cable between the two XLR connectors, then you can drive three amps at once. I'd like to see a front panel switch for this purpose on the next version.

The next hookup involved connecting a pro gear processor in front of the amp. The

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MW1 makes this easy, and if I owned one, I would wire it to my patchbay for this use all the time. By connecting a Universal Audio 1176LN Peak Limiter's I/O to the two XLRs, I bridged both sections of the MW1 through the 1176LN. The guitar amp connects to Coming From's ¼-inch output. Being able to marry the guitar directly to a piece of pro gear is a beautiful thing and brings the guitar to another sonic level. The 1176LN as a compressor for guitar is much fatter and more present sounding than any stomp pedal, whose circuitry is lo-fi by comparison. So while you get all the squash and sustain, there is (relatively) no increase in distortion, even under huge gain reductions. The guitar's tone is kept intact and, in fact, the compressor pulls out more tone. Whatever distortion you add depends on how you set the amp that follows it. This is a tonal winner because the 1176 reacts directly to the player and the guitar's signal, and not to a mic/preamp/EQ/speaker cabinet/amp signal chain, which is typically the case.

Another hookup was for a mix where I wanted to process a clean guitar track through a Bixonic Expandora pedal, a boutique fuzz tone pedal that is fully configurable. I routed the guitar's track in Pro Tools out of a separate I/O output and into the rear XLR input of the MW1. I then used the Coming From's ¼-inch output to go to the pedal and return the pedal's output to the Going To's instrument input jack. Finally, I connected the XLR output of the MW1 back to an I/O input path into Pro Tools. This method works great for cleanly interfacing instrument level gear directly with Pro Tools' +4 environment. Being able to adjust the send level and impedance going to/from the pedal makes a big difference in the finished sound.

## RE-AMPING PLUS

Many re-amping hookups are possible with the MW1. Using the XLR input to take a track from Pro Tools and using the Coming From's ¼-inch instrument output to go to the amp is the simplest path, but you can also take that same instrument output and connect it to the instrument input, and use both the boost and tuner outputs to go to two amps.

My favorite use is for what I'll call "double-track re-amping." I had a direct signal of my main guitar track already recorded—intended for re-amping. I was going to re-amp it and have the guitar player double-track it using the same amp and recording signal chain. Instead, I had him double it while re-amping at the same time through the same amp. So I re-amped using the Coming From method but then used the Going To's boost path connected to the second channel of a Fender Twin for the double. Because both the original guitar track and now the double were coming out of the same amp and recorded to the same track using the same chain, I was able to push the amp harder, making the sound immense. Use two amps if you want the guitars on separate tracks, but the sound of the two mixing inside one amp is glorious.

## VERSATILE AND CREATIVE TOOL

The MW1 is a highly flexible studio tool that fosters creativity in any engineer/producer with its universal connectivity and level/impedance-matching abilities. I was able to configure the box in a variety of ways with no added noise or loss of tone.

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

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**~ Jerry Douglas**

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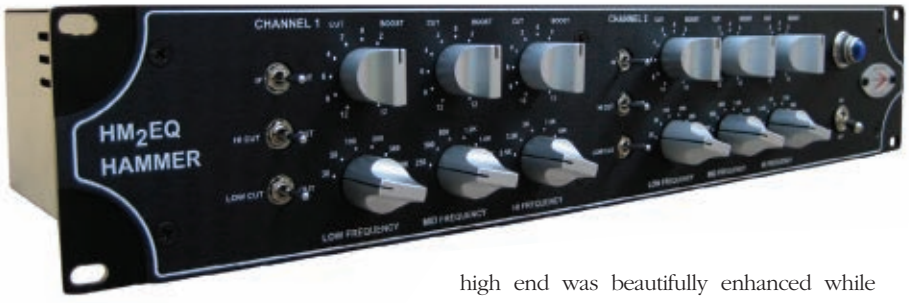
BY MICHAEL COOPER

# A Designs HM$_2$EQ Hammer Tube Equalizer

## A Dual-Mono Tool for Broad Tonal Shaping




The A Designs HM$_2$EQ Hammer 3-band equalizer ($2,695) takes a different approach to equalization as compared to most other EQs. One look at the supplied filter-response graphs in the owner's manual tells the story: The bandwidth of each channel's three bell-curve filters spans more than seven octaves at full boost/cut! But don't be fooled into thinking that such far-reaching effect can only deliver pile-driver action; while the Hammer is certainly capable of powerful tonal shaping, it also produces far more subtle effects.

### PAINT IT BLACK

The Hammer's jet-black, two-rackspace metal chassis and milled-aluminum faceplate are offset by the highly visible white titling for control functions and settings. Each of the two channels sports a separate frequency selector and boost/cut gain control for its low, mid- and high-frequency bands. Also included are a hard-wired channel bypass and separate high- and low-cut filter switches per channel.

Each band offers six switched center frequencies and bell-curve response. The low-band frequencies range between 30 and 400 Hz. Six mid-band choices range from 250 to 2k Hz, while the high-band selections are between 2.5 and 15 kHz. The boost/cut control for each band provides ±13dB continuously variable adjustment with no detents. All control knobs are large and made from milled-aluminum, and exhibit very smooth and deliberate action. There are no Q controls or individual bypass switches for each band.

The Hammer's high-cut (LPF) and low-cut (HPF) filters' cut-off frequencies are fixed at 8 kHz and 84 Hz, respectively. A large, blue-jewel lamp (indicating power status) and heavy-duty Carling toggle power switch finish off the unit's front panel. The spartan rear panel is home to balanced XLR I/O connectors for each channel and an IEC receptacle for the detachable AC cord provided with the unit.

The Hammer uses both tubes and solid-state components; inputs are passive. Each channel has one AT7 tube in its audio path. Special filters before the tube stage cull noise from the audio signal but pass desirable even-order harmonics. (The noise floor is specified to be -94 dBm across a 30kHz bandwidth.) The outputs are driven by ICs and are transformerless.

The Hammer provides no global input or output gain controls, but the lack of additional amplification stages is intentional, because it keeps the signal path sounding more pristine and free of noise. The 3dB down points for frequency response are at 5 Hz and 40 kHz.

### IT'S HAMMER TIME

My first test using the Hammer involved mastering a stereo mix that had a lot of midrange and severely lacked both bottom and top end. Boosting 30 Hz/12 dB and 15 kHz/9 dB lent more fullness, punch and detail to the mix, without adding any perceptible noise. Considering the broad range of the Hammer's filters, the extreme amount of boost I had to employ necessitated choosing center frequencies at far ends of the audio spectrum to lessen the degree to which the midrange would also be boosted. Even so, I needed to apply 1 dB of cut at 2 kHz to bring the midrange back into proper balance. The overall sound was very open, pristine and sweet.

Next up was an acoustic piano beautifully recorded with a spaced pair of AKG C-414 microphones. This track needed no EQ, but I ran it through the Hammer anyway with all gain controls nulled, and high- and low-cut filters bypassed. In bypassing both channels, I heard no change in timbre or stereo image, confirming that the Hammer's pristine audio path has no audible effect when in-circuit but "idle."

On a stereo acoustic guitar track recorded with a spaced pair of Neumann KM184 mics, I set the Hammer to cut 1 dB at 100 Hz and boost 4 dB at 10 kHz. The recording's silvery high end was beautifully enhanced while low-end mud was removed. When I activated the channels' low-cut filters, the sound cut through the mix even better and kick drum bleed on the track was reduced.

I next used the Hammer on an electric guitar track that had too much bass and brittle highs. I kicked in the Hammer's high- and low-cut filters, cut several dB both at 10 kHz and 200 Hz, and boosted mildly at 1.2 kHz to accentuate the midrange frequencies. That helped the track a lot, but I still ended up using a more surgical equalizer—one with Q controls and adjustable HPF and LPF corner frequencies—to sculpt the track to sound the way I wanted it to.

The Hammer EQ sounded awesome on dull, pre-recorded kick and snare tracks. Boosting 9 dB at 50 Hz and 6 dB at 3.5 kHz gave the kick way more slap and punch. A 9dB boost at 5 kHz gave the snare track a wonderful *crack*.

### BROAD STROKES, BOTH SWEET AND SMOOTH

My main quibble with the Hammer is that it omits independent band bypasses and output gain controls, making A/B comparisons to unprocessed material difficult at best. The unit is also fairly pricey.

If you're looking for an equalizer with a vintage-tube sound or the ability to tweak narrow frequency bands, the Hammer isn't for you. This box delivers a sweet, smooth, pristine sound in very broad strokes. Its effect is quite subtle until you use large amounts of boost. Then the magic begins.

A Designs Audio, www.adesignsaudio.com, 818/716-4153. ■

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

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# P.O.D.

## ORIGINAL GUITARIST BRINGS SPARK TO HARD-ROCKING BAND

*P.O.D. are (L-R) Marcos Curiel, Sonny Sandoval, Wuv Bernardo and Traa Daniels.*

**By David John Farinella**

While the masses were wandering around the floor of the 2007 NAMM show, looking for free T-shirts and drumsticks, producer/engineer Jay Baumgardner was meeting with the members of P.O.D. to talk about recording a collection of new material that would feature the return of original guitarist Marcos Curiel after more than four years away from the group.

P.O.D. (which stands for Payable on Death; it has some Christian subtext) burst out of their native San Diego, Calif., hometown onto the national scene when their combination of rap, metal and reggae-dub hit a vein with the 1999 release of *The Fundamental Elements of Southtown*. Fueled by the singles "Southtown" and "Rock the Party (Off the Hook)," the band's major-label debut went Platinum. Their second major-label offering, which was released on September 11, 2001, pushed the band over the top with songs like "Alive," "Youth of the Nation" and "Boom." Over the years, the quartet has polished its sound and found a combination of rock 'n' roll energy and hook-laden choruses that serves as an immediate sonic identifier.

For their latest album, *When Angels & Serpents Dance* (in stores April 8), Baumgardner and the band—singer Sonny Sandoval, drummer Wuv Bernardo, bassist Traa Daniels and Curiel—found common ground and mutual respect before deciding to head into NRG Studios in North Hollywood. According to Sandoval, Baumgardner was picked to produce and mix the record for a couple of very simple reasons: "He's got his own ideas and he doesn't just put [the music] through a system of hit records," the singer says. "He was a fan of the band and that's always a plus for us. He's not just working to make some cash; he's working because he digs the band."

The sessions started in April of 2007, and the final mix and mastering were completed in January 2008. According to Baumgardner, the original plan was to come out with an album much sooner to kick-start the band's new deal with Columbia Records. (They left Atlantic in 2006 after eight years and more than 7 million albums sold.) "When we started the record, it was going to be really accelerated, like [the label] needed it done in two months," he says. "But then they pushed back the release date, as they always do."

The extra time worked out for the best. It turns out that Curiel had more than an album's worth of material, but Sandoval hadn't come up with any lyrics. That's nothing new for the singer, though. "We're the kind of band that writes the music and then I let the music lead where the lyrics are going to go," Sandoval says. "Then I go into the studio and just kind of put it down. I think I frustrated Jay a little bit because he was the first producer who ever wanted all of it at once."

When they were still working on the two-month timeframe and there were no lyrics in sight, Baumgardner brought in vocal coach and singer Mark Renk to help Sandoval. "We had all this great music and that puts you in a weird, very hard situation when you have to write great lyrics and great melodies for 15 songs in two months," the producer reports. "I brought Mark in because of this accelerated schedule so I could continue working on the music and he could work on some vocal things. It was one of those things that worked out great because he did an amazing job."

*—CONTINUED ON PAGE 115*

# JONAS BROTHERS

## TEEN IDOLS ADAPT TO WORKING IN A ROLLING STUDIO

**By Elianne Halbersberg**

Forget all those screaming girls, crying and pulling their hair out over Kevin, Joe and Nick. With the exception of their parents, teen sensations the Jonas Brothers' biggest fan is probably their producer, John Fields. So when the Jonas Brothers asked him to produce their upcoming—and at press time still untitled—third album, he jumped at the chance to work with the group again—even though it meant doing the actual recording on a tour bus. A *rolling* tour bus. "There have always been mobile recording trucks, but usually not while they're moving!" he says with a laugh.

Because the Jonas Brothers spend almost all their time on the road, it's virtually impossible for them to stay in one place for more than 24 hours. Fields and Dorian Crozier, who also played drums on the Jonas Brothers' 2007 Platinum, self-titled second album, met up with the trio in Toronto, where they were making a movie. "We set up shop at Cherry Beach to cut what became the first five songs on this new album," says Fields. "We needed a bunch more and we'd have a record, but they were on the Hannah Montana tour. They asked if I'd go on tour with them, and I said, 'In what capacity? And when?' They said, 'To cut new songs; we're thinking about getting a tour bus from Gibson to use as a mobile studio.'"

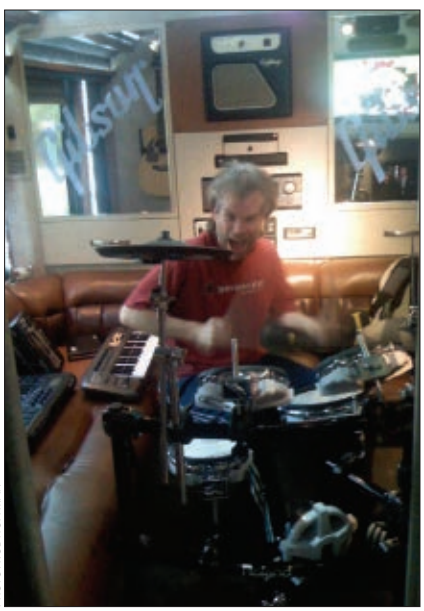

PHOTO: ROB HOFFMAN

***Drummer Dorian Crozier helped Fields set up the recording bus.***

PHOTO: ROB HOFFMAN

***On the bus (clockwise from left): Kevin, Nick and Joe Jonas, producer John Fields, cameraman Mark Sarner.***

Fields agreed but admits that his next thought was: What have I gotten myself into? "I knew I would not be able to do what I normally do," he says. "In my studio, if I think of something, I can go through any plug-in, or analog EQ and compressor. But I had none of that. I was limited to guitars and little dinky keyboard sounds, but it was refreshing to use new stuff and get fresh sounds.

"It started off with Dorian and me scheming about how to make it work: 'We're going to bring everything: eight compressors, 10 mics.' 'We'll bring your speakers, my Mac!' Weeks go by and you whittle down: 'Maybe I won't bring my full-blown Pro Tools HD system. There's got to be a better way.'"

The Gibson bus is fully equipped with a shower, appliances, wood floors, guitar hooks on the walls and built-in amps allowing for quarter-inch cables to be plugged in. "I built a mobile recording rig with my laptop—a 15-inch MacBook Pro—and [Digidesign] Mbox Pro 2," Fields explains. "I'm used to Pro Tools HD3, but because of space limitations the only way we could do this was to put together a vocal chain, a Line 6 Pod X3, an Edirol PCR M30 MIDI controller and the guitars on the wall to do the next group of songs on the record. I had an API 3124 mic pre, AKG 414 mic, a Shure 58 that we used a lot, a pair of Mackie speakers and Big Knob, a Distressor, a couple pair of headphones, a couple of big duffle bags of wires and stuff, and an alternative rig with Dorian's Roland VK MIDI drum set we built into the back lounge. Dorian also had an Mbox and his Mac, and sometimes he used Logic 8 for certain sounds.

"I would make a rough track to click, send it to him, he'd bounce me a file and we'd use it as temp drums until we went into a real studio to re-cut it," Fields continues. "We used iChat to send files between our rigs. I'm so glad we did it this way. It was great to cut these songs and hang with the boys in their tour environment."

The Jonas Brothers' schedule had them either driving in the night before a gig or staying in a hotel, and either way arriving at each venue around 8 or 9 a.m. Consummate professionals, they run a very tight ship of in-person and telephone interviews, appearances, soundchecks, performances and recording, with no time for distractions or anything not related to work.

Fields and Crozier watched first-hand and were impressed by the level of workmanship. "Dorian and I were in the bus, enjoying watching this spectacular tour up close," says Fields. "There were hundreds of people on that tour having a blast and playing music. They would go onstage every

*—CONTINUED ON PAGE 116*

# TOMMY JAMES & THE SHONDELLS'

## "I THINK WE'RE ALONE NOW"

**By Matt Hurwitz**

In early 1966, a dejected Tommy James arrived home in Niles, Mich., from what appeared to be the last road gig with his then-group The Koachmen, just in time to answer a phone call that would change his life.

Two years before, the group had recorded their first single, "Hanky Panky," which was recorded at a radio studio by a local DJ, Jack Douglas, and issued by a small local label. "The record just came and went," he says. "I graduated from high school in '65, and I took my band on the road. We played Rush Street in Chicago and up through the Midwest, and we came home very out of work and depressed."

But then James received that telephone call. "Hanky Panky" had sprouted new legs in Pittsburgh, thanks to numerous bootleg pressings from the original single. "They sold 80,000 pieces in 10 days, and it was the Number One record in Pittsburgh," he recalls. James had a hit on his hands. "If I had missed that call, there wouldn't have been a Tommy James."

Unable to reassemble his original high school friends, The Shondells (a name he came up with in study hall in 1963—"Anything with an '-ells' on the end of it was cool," he says), James says he went to Pittsburgh and "grabbed the first bar band I could find." The band, The Raconteurs—Eddie Gray on guitar, Mike Vale on bass, Ron Rosman on keyboards and Peter Lucia on drums—headed to New York with James as The Shondells to find a real label.

*Recording the vocals for "I Think We're Alone Now": Ritchie Cordell, Tommy James and Bo Gentry at Allegro Studios, 1967.*

Initially, all the labels they visited—Columbia, Epic, Atlantic, Laurie and Kama Sutra—said "yes" to James and his group. But within a day or so, they each called to say they'd changed their minds—all except Roulette. It appears, says James, that Roulette "was pretty mobbed up. At the time, Roulette really was a singles label, but they didn't have much going, from a creative standpoint. The last hit they'd had was in '63 with The Essex's 'Easier Said Than Done.'" Label boss Morris Levy was ready for some new blood. "Jerry Wexler at Atlantic told us that Morris Levy had called all the record companies, and said, 'Dis is my f***in' record!' So, apparently, we were going to be on Roulette."

Levy quickly made an official national release of "Hanky Panky" on his label in June 1966, and it was a Number One hit within six weeks. That disc was followed by another, a cover of The Fireballs' "Say I Am." But James quickly realized that in absence of such a presence at Roulette, he would need to put together a production team to keep the hits coming. "I realized that my life, at that point, was going to be a never-ending search for the next single," he says.

PHOTO: COURTESY OF TOMMY JAMES

*Tommy James in 1967*

"I grabbed a bunch of people over at Kama Sutra," whose offices at 1650 Broadway were located in the "Brill Building District," the legendary songwriters' haven. One of those people he "grabbed" was writer/producer Ritchie Cordell, who, with writing partner Sal Trimachi, provided James with his next single, "It's Only Love." "Almost immediately, after we put that record out, Ritchie changed songwriting partners to Bo Gentry, and, in November, they came to me with 'I Think We're Alone Now.' They banged it out for me on a piano. It was a very slow ballad, but you could hear that it was a hit record. It had all the elements."

The trio went to the studio located in the basement of the building, Allegro, and recorded a demo, with James introducing the song's distinctive thumping bass-plus-guitar eighth-note intro (a style known as "pegging"). "We sped it up. Bo sang the lead and I played guitar, and we took it back to Morris Levy and played it for him, and he flipped out. We all knew we had something really special there."

A month later, on Christmas Eve 1966, James, Cordell and Gentry returned to Allegro to record the song for release with engineer Bruce Staple. "It was originally Kama Sutra's demo studio, which Bruce had built," James recalls. "They kept upgrading and upgrading, and finally started taking outside clients."

Staple had assembled a conglomeration of gear from Pultec amplifiers—a row of which, says James, made up the recording console. "It was very primitive. This was real bear skins and stone axes. There was a low-frequency hum

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PHOTO: COURTESY OF TOMMY JAMES

***A couple of years later, here's Bruce Staple, James and Bob King at Allegro.***

on all of those old recordings—if you play them sped up, you can hear it. Plus, we were in the basement, and every time the subway would run through we had to stop recording!" There was a single Scully 4-track recording machine, which played back through Altec 604 monitor speakers. "The Scullys were great," James says. "At the time, you could punch in on a Scully faster than any other machine."

One of the first steps in the recording process for James was to hire an arranger. "I was asked by Morris Levy's secretary if I wanted an arranger, and the first name that popped into my head was Jimmy Wisner." James was a fan of Wisner's (whom he subsequently dubbed "The Wiz") after hearing his arrangement the previous year on Len Barry's hit single, "1-2-3," and spotting his name on the label, though Wisner's history extended back to the days of Chubby Checker and Bobby Rydell.

Cordell and Gentry showed Wisner the song, which the arranger recorded on cassette to study. "The first thing I like to do is make sure the key and tempo are correct; it's crucial," Wisner says. "Generally, people don't sing with the same energy in rehearsal as they do in the session because there's no studio pressure. The excitement triggers a lot more energy in people. You generally need to compensate by making it a half-tone or a tone higher."

The role of the arranger on pop/rock songs of the '60s often overlapped some with that of the producer, though Wisner says that line was clear to him. "I didn't write the song, I didn't pick the song, I didn't pick the artist," he explains. "The producer runs the session." But Wisner would work together with a producer like Cordell to craft the song into a surefire hit. "One important part of being an arranger is helping to format the song. People put their song together, but when it comes to putting a record together they may not have a good feel for, say, how long the intro should be or what kind of intro it should have. That's where an arranger really comes into play. Where do you go after you go through the song the first time? Do you go right to an instrumental? Do you go to a different part? How long is that instrumental, if you have it?"

Another important contribution Wisner would make was the selection of musicians—even for an established band like James'. While pop bands like The Shondells, the Beach Boys, The Monkees and countless others might perform well live onstage, studio recording required something different. "The session guys in New York and L.A. at that time were very record-oriented," Wisner says. "A lot of these bands, if they didn't have experience going into the studio, as soon as that red light goes on they're just not that good. But we had studio guys who'd come in and knew and could *be* the band immediately, and they were relaxed with the recording process."

Bands would go along with having substitute players, though they didn't always like it. "I did three Spanky & Our Gang hits and The Cowsills' 'The Rain the Park and the Other Things," and they weren't too happy that we didn't use them. Though the family did sing background on the Cowsills track."

In The Shondells' case, only James and guitarist Eddie Gray played some muted guitars on "I Think We're Alone Now," and The Shondells sang some background vocals on the song's fade. The main recording, however, was handled by legendary session guitarist Al Gorgoni (Four Seasons, Simon & Garfunkel and Neil Diamond, to name a few), veteran session bassist Joe Macko, drummer Bobby Gregg and pianist Paul Griffin (whose contribution was mixed out of the final recording).

The recording also featured another vet—Jeff Barry/Ellie Greenwich session pianist Artie Butler ("On Broadway," "Leader of the Pack," "Chapel of Love"). Butler performed on an Ondioline—a vacuum-powered keyboard forerunner to the synthesizer (the signature sound on Del Shannon's "Runaway"), which played a high run through parts of the song. "I wanted something to do a long line," Wisner explains. "It's good practice

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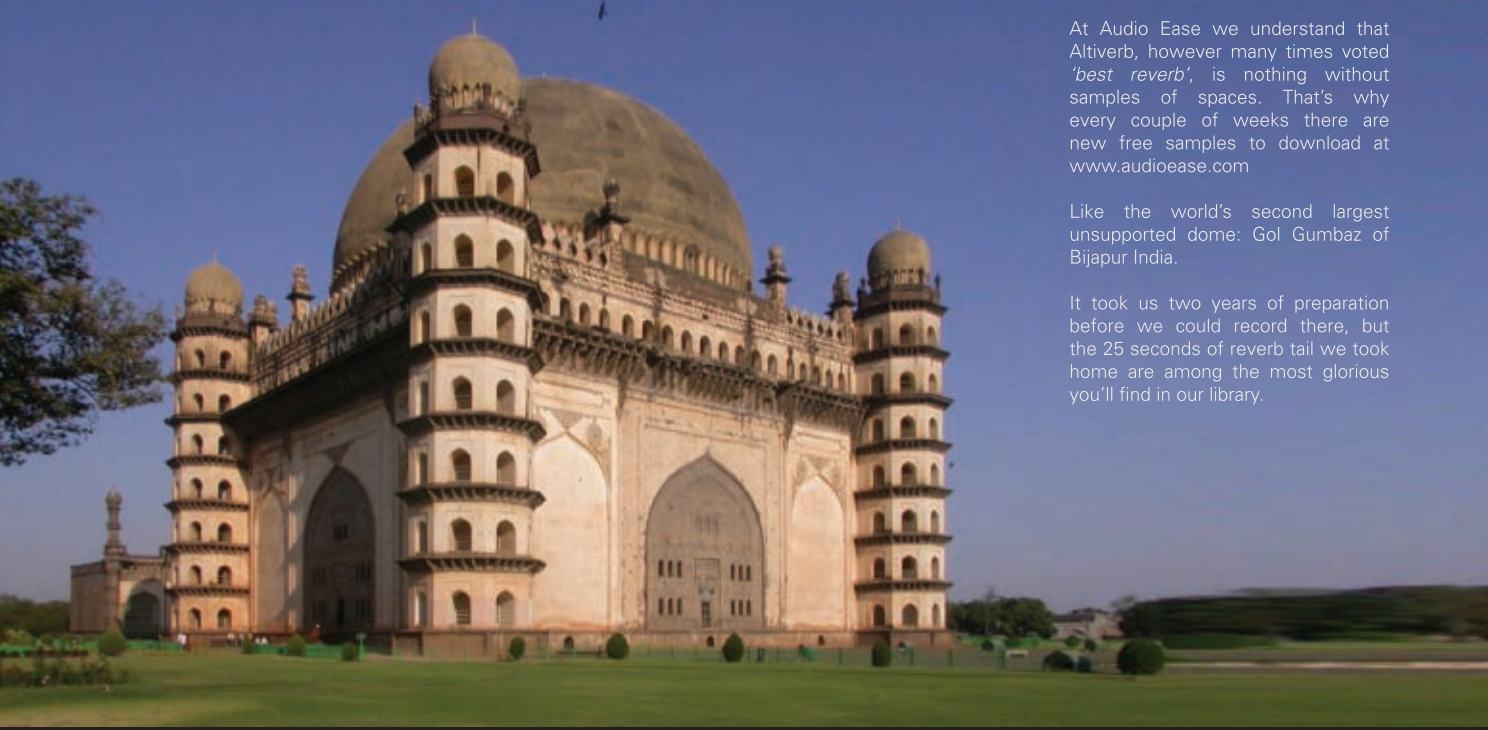

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when you have a rhythm going to have a long line over the top of it—either an organ or a sustain line. It goes against the rhythm, but it actually enhances the rhythm."

The band recorded the rhythm track that Christmas Eve, placing drums (Gregg on a ragtag kit of various studio drums) and Macko's Fender Precision (played through the studio's old Ampeg bass amp—"with the tubs up top," recalls James) and an electric guitar onto one track of the 4-track tape. The remaining chord instruments (including James' trademark Fender Jazzmaster guitar played through a Gemini II amp) were recorded to a second track, with miscellaneous overdubs added prior to James' lead vocal recording.

"I really discovered a lot about recording and producing from that record," James says. "Up until that time, people would use a 4-track by recording everything live and then mixing to mono. This was the first time we began layering a record."

> On "I Think We're Alone Now," the chorus was the quietest part of the record, but it was the biggest part of the record.
>
> —*Tommy James*

In absence of a second machine, Staple had to ping-pong submixes onto an empty track. "You really had to plan way ahead of how you were going to submix prior to recording," James notes. "Any one of your moves could ruin the record." Prior instrumentation would, of course, be subject to generational losses during ping-ponging—all except whatever was last recorded onto a vacant track. "You'd have your final mix... and a tambourine. So the tambourine would be in your face, and the rest of your mix sounded like sweat socks!"

James *triple*-tracked his vocal, bouncing between the two open tracks before he, Cordell and Gentry recorded the song's very-'60s background vocals. The song was then mixed for mono.

Interestingly, James notes, while the song opens solely with the "pegged" bass line, the song was actually recorded with the full band playing, though the mix doesn't reflect that. "Most pop records were written in stairsteps," James explains. "You'd start *here*, then the bridge would be *here*, building up to the full chorus. We went in the opposite direction—we stepped down to the chorus, which is almost bare," except for a chirping cricket added by Staple from a sound effects record. ("The crickets were in the studio, too," James says jokingly.)

"I learned a great lesson about recording for AM radio with that record," James notes. "On AM radio, you're going to fill up 100 percent of the speaker with something. If it's two instruments, like a bass and a drum, each part gets 50 percent. So, geometrically, you make the record smaller when you add instruments. You make it bigger by having *fewer* things. On 'I Think We're Alone Now,' the chorus was the quietest part of the record, but it was the biggest part of the record."

While beginning a song bound for play on tiny portable AM radio speakers with a solo bass line would normally be a risky venture, the problem was neatly addressed by doubling the bass line with an electric guitar. "You had to make it very percussive so that it would cut through a small speaker," the singer says. (James also noted this past December that when the song was redigitized for XM radio, those scouring the vault mistakenly grabbed a previously unheard early mix that featured the full band in the intro, which now plays on the network.)

Mixing for AM also required "a lot of top end and midrange," James adds. "You basically had to EQ things out of each other's way, particularly because you're mixing for mono and it's all coming out of one point of your speaker."

The song has never been mixed for stereo (though a "mock stereo" mix was created for the stereo LP release in 1967). Why? "Morris Levy didn't want to take any chances with radio," says James. "He just said [imitating Levy's gruff voice], 'No, that's the mix!' He didn't want to change a thing. He wanted the hit."

"I Think We're Alone Now" was indeed a hit upon its quick release in January 1967, playing alongside such other classic tracks as The Beatles' "Strawberry Fields Forever" and the Rolling Stones' "Let's Spend the Night Together." "It was actually *banned* in Detroit for being too dirty!" James recalls. "This is at the same time that the Number One record was 'Let's Spend the Night Together.'" The song did have a curious effect, though, recalls Wisner, currently working at a studio in New Jersey with James on a Christmas album for 2008. "We did a DJ convention 10 years ago, and a guy came up to Tommy, and told him, 'You know, the first time I made out was with that record.' It was a big moment for him!" ■

# P.O.D.

*FROM PAGE 108*

So while Sandoval and Renk headed off to the latter's studio, the rest of the band convened in Studio A at NRG. Engineer Sergio Chavez (Alien Ant Farm, Motörhead, The Bees) was responsible for the tracking dates. "It was really simple," Chavez remarks. "Those guys are pros and they can really play, so there was no crazy trickery or anything like that. Once the foundation was there with the drums, then we were pretty much cool to go."

*Jay Baumgardner at work at NRG Studios*

According to Baumgardner, the key to the sessions was making sure there were great-sounding instruments in a great-sounding room. "I think that's more important than doing a lot of fancy processing when you record, so there was not a whole lot of fancy processing," he says with a laugh. "Most of the record was recorded in Studio A, which has a Neve 8068, so all the drums were recorded through those Neve modules and straight to Pro Tools. I have a great mic selection, and we had great drums. That, in my opinion, is more important than any kind of junk that you would do."

Keeping that in mind, Bernardo's drum tracks were recorded with a conventional mic setup—an AKG D 112 and Yamaha Subkick on the kick, Shure 57s on the snare's top and bottom, Sennheiser 421s on the toms, AKG 451 for the hat and ride, and a pair of Schoeps 222s for overheads. One interesting twist was that Baumgardner used a pair of Royer SF-24 stereo active ribbon microphones as midfield room mics. He also set up a pair of mics to capture far room tones and added a mono mic to the room, just in case there was ever a call for a surround mix. "The more drum mics you have when you do a surround mix the better off you are," he says. "I didn't use them for the stereo mix, but they are there in the session."

Chavez was responsible for both the recording and the comping of the tracks. "If there was anything rushed, I would fix that a little bit, but I didn't use Beat Detective," he says. "Jay didn't want it to be stale like that. That band is a 'feel' band—they have a good groove and they do what they do."

Three weeks later, the crew moved into NRG's Studio B to record Daniels' bass tracks. A Sennheiser 441 was put on his cabinet and a DI was taken through an Evil Twin. Both signals went through a Distressor. Where many producers and mixers would look to blend the two tracks, Baumgardner has a one-or-the-other philosophy. "I'm going to let the cat out of the bag and everybody is going to hate me, but at the end of the day I ended up using the DI with the Ampeg SVX plug-in for the whole album," he says. "It gave me so much more control when I was mixing. I really tailored the bass sound to each song because the album bounces around to so many different things. Even though the sound of the amp was cool, it was better for some songs and some songs it was worse for, and I'm able to dial it right in with that thing."

As for Curiel's guitar tracks, both Chavez and Baumgardner continued to keep a simple approach while working in Studio A. Curiel played an assortment of guitars—including a series of Paul Reed Smith custom models—through modified Marshall JCM 800s. He also played through Vox AC30, Mesa Boogie Lone Star and Hiwatt amps. The chain was streamlined, with a 57 on the cabinet through a Neve 1081 into Pro Tools. The overdubs were recorded in Studio B, and the only change was swapping out the 1081 for a 1073.

For the most part, Sandoval's vocals were recorded at Renk's studio, which is about two blocks from NRG, and that meant gear could be sent down the road for use during those sessions. Baumgardner used a Neumann U47 through a 1073 and an 1176. That doesn't mean there wasn't some experimentation at first. "I'm a constant tweaker," Baumgardner explains. "We tried several different mics on him and that one just seemed to be the one for his voice."

The album features guest appearances by Mike Muir from Suicidal Tendencies, Helmet's Page Hamilton and the Marley Sisters on background vocals. Jason Freese, who serves as Green Day's touring keyboardist, joined in for one song and Suzie

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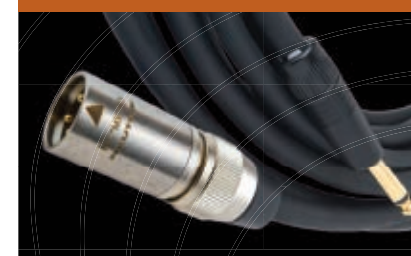
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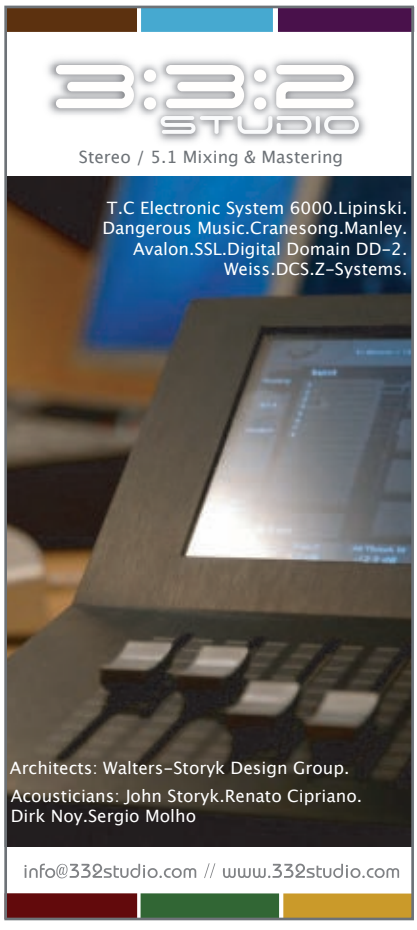

Katayama provided string arrangements.

Baumgardner says he always aims to record entire sessions—music and vocals—as flat as possible. "I try to keep it simple on the recording side because it gives you the ability to go different places or do things on a moment's notice [in the mix], and it's easy to match up," he explains. "I keep it a lot simpler now because I know I'm going to be mixing it. I don't have to present this finished product to another mixer where they open the faders."

Everything went through an Apogee Big Ben master word clock into a 96k, 24-bit Pro Tools rig. "No analog tape was harmed during these sessions," Baumgardner jokes. Yet he took care to make sure the tracks didn't sound like they were recorded digitally. "Every kid now has a home studio, so what I'm trying to do is go the opposite way and make it sound like it wasn't being spit out of a computer. I think that's sort of the trick, to go the opposite of making it sound computerized and quantized and edited to perfection. So use digital tools, but use them in a different way—to enhance the natural sound of things and not overdo it. Any kid can grid a bunch of drums and cut and paste themselves a song."

> I have a great mic selection, and we had great drums. That, in my opinion, is more important than any kind of junk that you would do.
>
> —*Jay Baumgardner*

While gear certainly helped with that kind of digi-organic vibe, Baumgardner had a definite approach in mind before the recording dates started. *Angels & Serpents* was all about letting P.O.D. rekindle their relationships and letting that fire the band. "And letting the music speak for itself," Baumgardner adds. "We were never going to try to make P.O.D. something they are not. My thing was that Marcos was back and we were going to try to use that strength to our advantage. We wanted to make a classic rock record. It's not a hip-hop rock record. It's not a nü-metal record. It's got some tastes of different things, but it's definitely P.O.D." ■

## JONAS BROTHERS

*FROM PAGE 109*

night at 7, play, drive to the next town on the Gibson bus, and we did 8 or 10 days of this. The last stop was in Phoenix, [where] Studio Refferals' Ellis Sorken booked us Salt Mine Studio in Mesa. We spent two days there cutting drums, adding guitar parts and redoing some vocals. But the bulk of the record was done on the bus, sometimes recording while driving, shaking on the bus, the laptop sliding, the guitars flying around, but we kept tons of material. When parked, we were on generator power and it had a nasty hum, so sometimes we had to retrack a vocal later, but in a loud rock song not so much; if you listen close, you might hear the hum on a song or two. After the tour ended, they came to my studio, Wishbone, in L.A. to tweak everything and cap it off for mixing."

Fields, a Boston native, has had his hands in the music industry since childhood. His uncle and mentor, superstar producer/songwriter Steve Greenberg, wrote, produced and performed on Lipps Inc.'s 1980s megahit, "Funkytown." Based in Minneapolis, Greenberg would take Fields to the studio with him when the youngster visited and got him into making recorded music.

"We built a nice studio called Funkytown, and I was the local guy who could make your album for $500," he recalls. "I played in bands and had a huge network of friends and musicians. I began producing major-label records in the late 1990s. I did Tina and The B-Sides in 1997, Dovetail Joint in 1998, then Evan and Jaron in 1999. My manager, Frank McDonough, who was in L.A., suggested I move there, and finally in 2002 I did.

"Within the first few months of getting to L.A., I produced Switchfoot's *The Beautiful Letdown*. We did it in eight days. It was my first hit major-label record, and it sold 2.5 million copies. It was a perfect match of band and producer."

Fast-forward five years: The Jonas Brothers sign a record deal and, as huge Switchfoot fans, request Fields as their producer. Their A&R representative, Jon Lind, called Fields that afternoon, pointed him to the Jonas Brothers Website, set up an immediate appointment and sessions began the following week. All it took to reel him in, says Fields, was to sit in a room while the trio played acoustic guitars and performed their original songs. The album *Jonas Brothers* was cut in four weeks in L.A. at Seedy Underbelly. "It was one of the most fun times I've ever had in the studio; everything was so positive and there was zero stress," says Fields.

And the Jonas Brothers have just as much

PHOTO: ROB HOFFMAN

*Producer John Fields adds some bass to a track.*

praise for Fields. "From the beginning, we connected with him," says Joe Jonas (who's 17). "Since the first song we did together, he has always been open to our ideas, almost as if we were co-producing."

"John loves music and is very open-minded," 14-year-old Nick Jonas agrees. "He's very fast, which helps us because we work fast, too. During the recording of our first album we really became close. John is like another Jonas Brother, and I think that's why we got such good results with him."

"We're very hands-on as a group," says Kevin Jonas (the elder statesman at 19). "We write and build our songs, and when someone once asked John how he does this, he said, 'I just listen to the boys,' which was such an honor for us. Sometimes you meet somebody and it just works perfectly right away. The connection was there for all of us from the start."

Youngest sibling Nick Jonas began his career at age 7, starring in Broadway musicals. He was signed to a record deal when he was 11 and subsequently brought his brothers with him. Several years later, the trio was snapped up by Hollywood Records, which is when Fields entered the picture. Producing a radio-oriented, hook-laden pop band is second nature, he says. "It's easier for me because that's what I do naturally. My instincts are in pop and it's natural for me to want the instruments and vocals to intertwine perfectly. I love the arrangements of classic radio hits—especially the vocals. I'm a huge Todd Rundgren fan. I like to think he was the architect for what I do now: superpop music with emotional vocals, with a side of 'anything goes,' as long as it sounds cool."

It's easy for anyone over the age of 20 to turn their nose up at teen bands, dismissing them as passing fluff whose stardom will be extinguished once their fan base is old enough to order a beer. The Jonas Brothers are fully aware of this. "Yes, we do have that 'pop' appeal in the sense of fan reaction," says Kevin Jonas, "but we write our songs, play our instruments, and when you see us live you get the gist of who we are. It's always a fight when you're young, especially when you come along with the Disney background. But that has helped to push us to another level. We have always embraced our audience and where they've taken us, and we're not going to try to run away from it." ■

PHOTO: JOHN FIELDS' IPHONE

*The Jonas Brothers' recording bus, equipped by Gibson.*

# COOL SPINS

The Mix Staff Members Pick Their Current Favorites

## Shelby Lynne

*Just A Little Lovin'*

**(Lost Highway)**

Musical interpretation is a difficult art; you're always walking the delicate line between reverent re-invention and mere imitation. Nearly 40 years ago, Dusty Springfield released the landmark *Dusty in Memphis*, which, with its throaty, bluesy vocals and open sensuality, completed her evolution from a British pop sensation to a soul chanteuse. Shelby Lynne, herself having transitioned musically from Nashville rebel to a crossover pop success, honors the Springfield songbook with *Just a Little Lovin'*, a collection of nine classics ranging from the title track to the plaintive confessional "Anyone Who Had a Heart" and the utterly heartbreaking "You Don't Have to Say You Love Me," plus one well-chosen original, "Pretend." (She steers clear of the untouchable "Son of a Preacher Man.")

"I wanted to make the kind of album that she might have made today," Lynne recently said. "I didn't want to just record these songs; I wanted to make the recording simple and important." Lynne collaborated with the dream team of producer Phil Ramone (who engineered Springfield's original recording of "The Look of Love") and Al Schmitt; the project was recorded live to 2-inch tape over five days at Capital Studio A. Gone are the glamorous, soaring orchestral arrangements of the original recordings; instead, spare, graceful arrangements of piano, guitar, bass and drums frame Lynne's supple, smoky voice. Lynne inhabits the music like an actor becomes a character—while showing her own quiet vulnerability and restraint. It's as if Dusty slipped into a cozy sweater, let her hair down, curled up next to you and softly poured her heart out.

Producer: Ramone. Engineer: Schmitt. Studio: Capitol Studios (Hollywood). Mastering: Doug Sax at The Mastering Lab (Ojai, Calif.). *—Sarah Jones*

## Patty Larkin

*Watch the Sky*

**(Vanguard)**

It's been a few years since the superb singer/songwriter Patty Larkin has come out with an album, but it was worth the wait—*Watch the Sky* is easily one of her best. Larkin has always had a strong instrumental presence on her CDs, but this time she *really* shines, supplying all manner of guitars and other stringed instruments, keyboards, loops on what is a true solo project recorded in her home studio. There's lots of textural variety to the musical underpinnings here—everything from Middle Eastern colors to Delta slide to a hint of hip-hop rhythm to more traditional folk. At once both moody and beautiful, the album offers a journey through 12 very different, but still connected, places that touch the heart and soul. If you don't know Larkin's work, this is a good place to start.

Producer: Patty Larkin. Engineers: Bette Warner, Ben Whittman, Patty Larkin. Studio: Road Narrows (Wellfleet, MA). Mastering: Ted Jensen/Sterling. *—Blair Jackson*

## Prenup

*Hell to Pay*

**(Prenup Music/ Redeye)**

This album came out a few months ago, but I just heard it, and so should you. Prenup is a Dublin-based "supergroup" of sorts, formed by ex-Pogue Cait O'Riordan (bass, vocals), and Fiachna O'Braonain (guitar, vocals) and Dave Clarke (drums, percussion, guitar, vocals) of Hot House Flowers. The backstory says that these three were both just on the other side of divorces when they jammed one night in honor of O'Braonain's birthday. So take Hot House Flowers, add some piss and vinegar, some Pogues raunch and laughs between friends, and you have a tight rock 'n' roll band as inspired as their name. My only complaint: O'Riordan's role is too back-seat. If this band sticks, it would be great to hear more of her voice.

Producer: Prenup. Engineers: Colin Murphy and Tony Jones. Studios: Elektra, Catch, Studio 34 (all in Dublin). Mastering: Murphy and Jones at The Bunker (Dublin) and Catch Studios. *—Barbara Schultz*

## Supreme Beings of Leisure

*11i*

**(Rykodisc)**

Since their 2002 sophomore release, which helped shine a spotlight on the duo behind Supreme Beings of Leisure (Ramin Sakurai and Geri Soriano-Lightwood), the idea of electronic pop has morphed from synth and drum modules leading the production path to a more laptop-based creativity channel. On their latest, the pair delves into more atmospheric rhythms: Light synth textures around sporadic drum hits create a sensual and evocative overall pulse. Spearheading the effort is Soriano-Lightwood's strong vocals, which ebb and flow with a Sade/Enigma-like feel. The lyrics themselves sound like they are straight from the artists' diaries—reflecting on the major life changes each dealt with in between their latest and this offering: from family deaths to marriage to childbirth. This one's getting filed under my "bathtub music" iPod list.

Produced, mixed and engineered by Sakurai. Co-producer: Soriano-Lightwood. Studios: Legato Studios, Martinsound. Mastering: Don Tyler at Precision Mastering. *—Sarah Benzuly*

## Maceo Parker: *Roots & Grooves*

**(Heads Up International)**

*Roots & Grooves* highlights pioneering funk/soul saxophonist Maceo Parker's pairing with the WDR Big Band of Cologne, Germany, for concerts in February and March 2007. Disc 1 offers Parker's tribute to Ray Charles. Parker shines as lead vocalist on "Busted," "You Don't Know Me" and "Georgia on My Mind," sounding rather like Charles himself. For "What'd I Say," the horn section takes over Charles' signature electric piano riff and trades burning solos. Parker and WDR are joined on disc 2 by bassist Rodney "Skeet" Curtis and drummer Dennis Chambers, who propel the band through tight arrangements played over fat grooves. Disc 2 concludes with Parker staples "Shake Everything You Got" and "Pass the Peas," which showcases bandmembers' prodigious soloing chops in extended-jam form.

Producers: Joachim Becker and Lucas Schmid. Engineer: Reinhold Nickel. Mixer: Klaus Genuit at Hansahaus Studios (Bonn, Germany). Mastering: Marko Schnieder at Skywalk Mastering (Trierweiler, Germany). *—Matt Gallagher*

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## L.A. GRAPEVINE

**by Bud Scoppa**

**"Talking about gear in L.A. is like being at a muscle-car convention," quips Thom Monahan. "A friend of mine once commented that there are more tape machines per capita here than anywhere else on the planet. It seems like every dude in L.A. has got a home studio."** Monahan now counts himself as one of this horde of dudes, having become a prime P/E/M go-to guy for the Cali indie-band contingent since relocating from Brooklyn three years ago. He's also a major player in the freak-folk sector, where he's worked with Vetiver, Big Black Morning Light, Espers and Devendra Barnhart.

PHOTO: JONATHAN WILSON

***Thom Monahan in the control room of The Hangar, where he mixed a new album for Jonathan Wilson***

Monahan, who has been compared to a player/coach, is prized not only for his considerable skills, but also for his magnanimous presence in the studio. This past fall, after he'd co-produced the first solo LP from Gary Louris, the former Jayhawks leader said of him, "Thom was willing to experiment a bit, and he's such a positive person—it was really nice coming to the studio every day."

After hitting the indie-rock radar as a member of Monsterland, based out of his hometown of Danbury, Conn., Monahan moved to Northampton, Mass., where he gained wider recognition as the bass player and producer of Joe Pernice's Scud Mountain Boys, who morphed into guitar-pop darlings the Pernice Brothers, while also finding time to play with The Lilys. But in 2005, Monahan and his wife, *Entertainment Weekly* staff writer and author Shirley Halperin, acted on their long-standing desire to head West. "I was down with L.A. from the moment I got here," he says. "I like the community of musicians in Los Angeles a lot."

Monahan and Halperin initially gravitated to Silver Lake, renting a place near Spaceland, and the hospitable couple welcomed a steady stream of touring musicians, who'd hang out in their kitchen between soundcheck and the set. Although they loved the close-knit Silver Lake scene, they started house-hunting out of a need for more space to accommodate guests and Monahan's extensive array of gear. They settled on a house in Sherman Oaks that had an already-converted two-car garage and an attached storage room with no parallel walls.

The Monahan/Halperin residence now doubles as a home studio and a sort of indie-rock bed-and-breakfast. Recently taking advantage of the facilities were Peter Bjorn & John, who were in L.A. for four days to write for the follow-up to *Writer's Block*. "I'm friends with their manager," Monahan explains, "and I'd met Bjorn a bunch of times. He was like, 'We could just do a rehearsal-space thing, but that would suck.' So I said, 'Why don't you guys just come over here and park in my space? I have drums and instruments set up, so you could just hang out and do your thing in someplace that's homey."

Homey but functional. "I don't have a room full of insane, esoteric gear," Monahan points out. "I've tried to make good choices and pick up a few solid things every year." One key component of his setup, built around a Pro Tools LE rig with external converters and "decent" clocking, is a Dangerous D-BOX featuring an 8-channel summing amp through which he mixes. The box also comes in handy for D/A conver-

*—CONTINUED ON PAGE 124*

## NASHVILLE SKYLINE

**by Peter Cooper**

**I get to listen while I write. Right now, I'm hearing Tom T. Hall singing "The Girl Who Read the Same Book All the Time." In a few minutes, I'm going to switch over to a mix of Todd Snider songs because I love his songs and because I'm a week away from playing bass with Snider on some tour dates. I'm not very good at fakery or improvisation when it comes to the bass, so I have to make sure all the changes are burned into my brain.** Train wrecks are good subjects for country songs, bad subjects for bands and a couple of errant notes from my Carolina blue Waterstone can wreck the best of bands. I have too much respect and affection for Snider—I produced an odds 'n' sods record for him, I've played and sung on three of his albums, and we've written some songs together—to hang him too far out to dry in concert. Plus, we're playing casino gigs and I don't want to get fired and lose my shot at the blackjack tables.

In any case, please excuse the name-dropping. (I've heard Grammy-winning Nashvillian Jim Lauderdale say, "Name dropping is rude. I was just having a discussion about that with Judge Lance Ito.") This is supposed to be something of an introduction, though, and I'm pleased to say that I'm writing to you from my home in East Nashville, less than 20 minutes from the homes of Hall, Snider, Emmylou Harris, Duane Eddy, Nanci Griffith, George Jones, Kim Carnes, Guy Clark and just about every major figure in the contemporary country world. In this column, which I'm taking over from the hypertalented Rick Clark, I will bring you news and opinions from my fine town.

I do all sorts of things around here, including writing about music for *The Tennessean* newspaper, teaching country music history at Vanderbilt University's Blair School of Music, playing fretted instruments, singing, writing songs, recording demos in my home studio and recording albums in better studios. I know just enough to be dangerous, but I have chosen a peaceful path. I moved to Nashville from South Carolina, mostly because you never see John

## NEW YORK METRO

**by David Weiss**

Prine at the Target store in Spartanburg. I used to teach middle school, but I'm feeling much better now.

And I thought I'd tell you about the recent talk I had with Vince Gill, John Hobbs and Justin Niebank, the three fellows who co-produced Gill's four-disc *These Days* album, Nashville's entry into the 50th Grammy Awards' all-genre Best Album category, and winner as Best Country Album.

"I never felt like music had to be a good idea," Gill says, referring to his notion of recording 43 songs of new material, divvied up into four, genre-linked discs. There's a classic country-sounding disc, one of bluegrass, one of rocked-up material and one that is full of melodic ballads. The project's length and breadth allowed the producers and musicians to experiment in ways that are unusual for a major-label contemporary country project.

"Because we wanted every song to have its own character, we tended to change and move around most of the mics, so there was never a dull moment," says Niebank, a remarkable engineer, producer and mixer who has worked on projects for Gill, Keith Urban, John Mellencamp and plenty of others. Niebank, Gill and Hobbs tracked and mixed the project at Nashville's Blackbird

*—CONTINUED ON PAGE 125*

PHOTO: PETER COOPER

*The dynamic trio at Blackbird Studios (L-R): Vince Gill, John Hobbs and Justin Niebank*

**Keep the horse you rode in on, or switch to a new steed? For New York–area audio facilities where a mainframe analog or digital desk remains the center of operations, the decision to change consoles can be one of the most significant undertakings for management to consider.** In a complex formula, potential gains in creative options and sonic quality must be balanced against downtime for the switch-over, unpredictable client preferences and the sheer expense of the flashy new investment, among other factors.

**At Allaire Studios, the destination studio set high in the hills of Shokan, N.Y., deciding to switch out the SSL 9000J that had anchored their Great Hall studio was no sudden impulse.** "When we purchased the SSL in 2000, our thought was that we would have a console that would be able to do a number of things well," explains studio manager Mark McKenna. "We were anticipating 5.1 to take off and be a part of our daily operation, so we wanted to have a studio where people could not only mix in 5.1, but track in it. But the 5.1 market did not really blossom the way we thought it would.

"Also, we have this enormous tracking room, but in the final analysis the SSL is more of a mixing and urban tool, and it didn't really fit the place," he continues. "The other thing that pushed it over the edge is we had a remarkable run in our other studio, the Neve Room (featuring a Fred Hill–restored 8068). We had periods where the room was booked solid for six months with only Sundays off. We thought we needed to find a way to replicate that kind of performance."

Through connections and good timing, McKenna and his crew realized that they had the opportunity to procure none other than the famed AIR Montserrat console, which holds a number of distinctions. One of only three such consoles built

PHOTO: WADE GRINDLE

*Allaire Studios manager Mark McKenna (seated) and chief technical engineer Ken McKim*

and the only one currently situated in the U.S., the board was overbuilt by Rupert Neve to meet the highest standards of Beatles producer George Martin and engineer Geoff Emerick.

Although its roots are in the 8078 console, the 52 mic/lines in the AIR Montserrat board is distinguished by remote-controlled mic preamps, bandwidth approaching a whopping 100 kHz and a dynamic range of 106 dB. It also boasts 52 Flying Faders, a 32-input monitor section and six reverb returns for 90 total mix inputs. Just as remarkable as its technical pedigree is the history that has developed around it, recording such albums as *Synchronicity* and *Ghost in the Machine* by The Police, *Brothers in Arms* by Dire Straits and more AIR Montserrat projects from the likes of Paul McCartney, Stevie Wonder and Eric Clapton. After a 1987 relocation to A&M Studios in Los Angeles, U2, Aerosmith and the Rolling Stones are among those who took a turn with the desk.

Following a reorganization at A&M, the mighty console was warehoused for approximately five years before McKenna, who had personally used it on Don Henley's 1989 album, *The End of the Innocence*, discovered that it was available. "When I was at one of the AES conventions," McKenna recalls, "I got a chance to talk to Robin Porter, one of the chief design engineers on the console, and other alumni at AIR, and they all said the same thing, which was that this was the best-sounding console in the world

*—CONTINUED ON PAGE 126*

# READEEZ STUDIO PUTS AUDIO FIRST

## WSDG DESIGNS LOFT SPACE FOR EDU-TAINMENT PROJECTS

The home studio that John Storyk designed for Michael Rachap is built into a loft in an 80-year-old building in Atlanta's Midtown neighborhood. The studio is the home base for Rachap's Readeez Company (www.readeez.com), which creates and markets entertaining, educational films for kids.

"People ask me what we do and it's tough to give a simple answer," says Rachap. "I like to say we make short films for small people. Our business plan includes producing hundreds of such films on a broad array of topics."

Readeez's films show, for example, an animated father and daughter, very simply drawn on a white background. While the daughter reads a nursery rhyme to her father, each syllable appears in large type as she speaks. Voices must be (and are) clear as a bell to reinforce the sight-reading that the piece teaches.

"Kids can be taught to read without even learning the alphabet," Rachap says. "The one-syllable-at-a-time method is something I haven't seen anywhere else. When people do read-along things, they usually have large, colorful images and very small words at the bottom. Kids need big, clear type and clear audio.

"The sound component of so much online video seems like an afterthought," Rachap continues. "You end up with videos that are only a few megabytes, but they use 8-bit/22k audio or worse and they sound terrible." According to Rachap, all Readeez videos are 16/44.1 and commercial-free. Right now, they are available on the Readeez site or via iTunes. Rachap is currently working on the first Readeez DVD compilation, which will include about 25 of the minute-long movies.

Rachap's home studio effectively incorporates every room in the house. Storyk and systems integrator Judy Elliot Brown spec'd wiring/infrastructure with audio tielines to the kitchen, bedrooms—everywhere. "I can and do record audio from every space," Rachap explains. "I'll go into the control room [adjacent to the living room] and do some narration where it's nice and quiet, then go back into the kitchen and edit, and go to my daughter's room and do some recording. It's all living space, and it's all work space."

Rachap's living room, known as the Big Room, includes a rotating platform—11 feet in diameter—supporting three red-velvet seats that came from Radio City Music Hall. The motorized platform, which Rachap calls the Wheel of Amusement, can be turned to face a 61-inch plasma display. "The 18-foot ceiling of the Big Room is gently domed," Storyk says. "Evidently, the space enjoyed a previous incarnation as a ballroom. The result is a natural reverberation that imparts a sonic signature."

*The Big Room features a rotating platform dubbed the Wheel of Amusement. Inset: Michael Rachap at the ICON D-Command.*

Gearwise, Rachap's studio is centered around Pro Tools HD, a 24-fader ICON D-Command and Genelec 8050 monitoring. Outboard gear includes two API Lunchboxes, a Summit DCL-200 compressor/limiter and TC-Helicon VoicePro. His go-to mics are a pair of Neumann U87s, as well as models from Sennheiser, Shure and AKG.

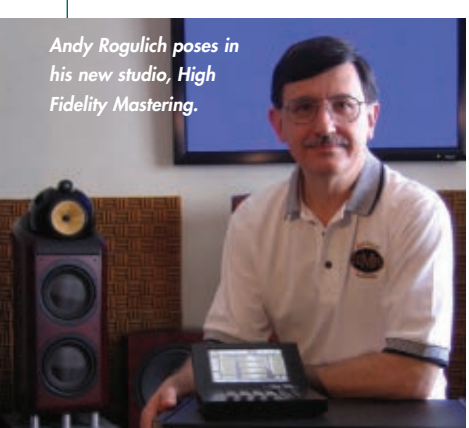
Until five years ago, Rachap worked primarily as a copywriter for a New York City–based advertising firm, but personal interests in music and education inspired him to dream up this new enterprise. "I give Michael credit for envisioning this space and making that dream a reality," Storyk says. "He has a lot of good ideas."

*—Barbara Schultz*

**NEW** STUDIO

# HIGH FIDELITY MASTERING OPENS

## ROGULICH OFFERS FLEXIBLE GEAR, SKILL SET



*Andy Rogulich poses in his new studio, High Fidelity Mastering.*

Engineer Andy Rogulich's new studio, High Fidelity Mastering (Albuquerque, N.M.), went online near the end of 2007. High Fidelity is a 7.1 surround facility, centered around the Rupert Neve–designed Legendary Audio Masterpiece mastering system; the monitors are B&W Nautilus 800s powered by Crown DO-2000 interface velocity-controlled amps. He also uses outboard processing from TC Electronic, dbx, Focusrite, Lexicon and Symetrix. Rogulich says he built the new studio to be as flexible as possible; in a relatively small market, he's got to be able to do it all. "I wanted to have a facility where I could do standard mastering work and have complete restoration capability, as well as conversion to surround sound," Rogulich says. "In the past couple of years, New Mexico has made a big push to encourage the film industry to produce movies and TV shows in and around Albuquerque, so it also made sense to include the capability to master in reverb effects for TV and film."

# TRACK SHEET

## BEHIND THE GLASS

### BROKEN RADIO
#### K&H MONITORS INSTALLED

*Broken Radio owner Matt Boudreau*

Matt Boudreau's Broken Radio Studios (San Francisco) recently took delivery of a new pair of Klein & Hummel 0300 monitors. Boudreau, who took over the studio just last year, caters to indie artists looking for a high-end recording environment at affordable rates.

### JAZZ AT AVATAR
#### ANDERSON'S SESSIONS

*L-R: Kenny Garrett, Stephen Scott, Clifton Anderson, Christian McBride and Steve Jordan*

Jazz trombonist Clifton Anderson is self-producing an upcoming album, which will feature performances by numerous jazz greats. Anderson and friends were photographed during tracking sessions in Avatar Studio's (New York City) C, where they worked with engineer Richie Corsello and assistant Brian Montgomery.

### NORTHEAST

**Emily Lazar**, chief engineer of The Lodge (NYC), is celebrating 10 years in the mastering business with several Grammy-nominated clients, including The Shins, Tiësto and Shiny Toy Guns...**My Morning Jacket** were in **Avatar Studios** (NYC) recording a new album in Studio A with producers **Jim James** and **Joe Chiccarelli**. Chiccarelli engineered, and **Rick Kwan** assisted. Also in Studio A: **Peter Wolf** with producer **Kenny White**, engineer **Kevin Killen** and assistant Kwan...The **Grip Weeds'** studio, **House of Vibes Productions** (Highland Park, NJ), took delivery of a **Sound Workshop** analog console once owned by **Jan Hammer**. At press time, upcoming sessions on the new board include **Gary Lucas** and **The Smithereens**... Cellist **Derek Layes** and violinist **Gillian Rivers** tracked strings at **Retromedia Sound Studios** (Redbank, NJ) for **Natalie Walker**'s upcoming release. **Dan Chen** and **Nate Greenberg** produced, and **Adam Vaccarelli** engineered.

*During a recent session at Nightsky Studios (L-R) are owner/engineer Ron Vento, engineer Matt Mckinnley and artist Saw Grow*

### NIGHTSKY OFFERS INTERNSHIP
#### NEW PROGRAM BENEFITS LOCAL STUDENTS

Nightsky Studios (Waldorf, Md.), in association with the College of Southern Maryland, has begun offering a paid audio internship. The place has been filled for 2008, and engineers at the 10-year-old studio will give one student per year a hands-on education in using the studio's equipment, including Pro Tools 7.2 and a Focusrite Control|24 console. Nightsky offers recording, mixing and mastering services to clients such as Deangelo Redman, Devin the Dude and Rumplestiltskingrinder.

### SOUTHEAST

**The Explorers Club** were in **Los Continent Productions** (Charleston, SC) recording vocal overdubs for their forthcoming Dead Oceans label release. **Jason Brewer** produced and **Kevin Crothers** engineered...At **Studio B Mastering** (Charlotte, NC), engineer **Dave Harris** worked on recordings by **Brian Vander Ark**, **Red Limo** and **Bombadil**...**Jeff Carroll** mastered projects for **Boxbomb**, **Mark Lawrence** and **The Vision of a Dying World** at **Bluefield Mastering** (Raleigh, NC)...Recent sessions at **Crescendo Sound Studios** (Gainesville, FL) include **The Draft**, the **Classic Struggle** and **The AKAs** produced by **Alex Newport**.

### NORTHWEST

**Lenny Williams** visited **Laughing Tiger Studios** (San Rafael, CA) to track vocals for Prince Damon's new album, *Atmospheric Soul*...**Ryan Foster** of **Freq Mastering** (Portland, OR) mastered two funk/soul projects for Terrestrial Records: **Finger Five** and **Anthony Smith's Trunk Fulla Funk**.

### SOUTHWEST

**Sugarhill Recording Studios** (Houston) president **Dan Workman** is now teaching an audio engineering course at **Houston Community College**'s Town Country campus. Sugarhill also reports that the facility started 2008 with a live concert recording of **Radio Birdman**, captured at Emo's and The Meridian (both in Houston) by the studio's chief engineer, **Andy "Mort" Bradley**...Recent recording and mixing clients at **The Saltmine Studios** (Mesa, AZ) include **Ice-T**, **Jonas Brothers**, **Joni Sledge**, **Mario Winans** and **G-Unit**.

### SOUTHERN CALIFORNIA

Recent sessions at **The Pass** (L.A.) include **Smashing Pumpkins** working on an EP with engineer **Bjorn Thorsrud** and assistant **Zeph Sowers**. Also at The Pass, **We Are Scientists** tracked with engineer **Ryan Hewitt** and producer **Ariel Rechtshaie**; and **Sheryl Crow** recorded tracks for her latest album, *Detours*, with producer **Bill Bottrell** and engineer **Mimi Parker**...**Oasis Mastering** (Burbank) announced that numerous projects mastered at the studio were nominated for Grammys. Artists whose work was recognized with nominations include **Bettye Lavette**, **Machine Head**, **Prince** and **Jill Scott**...Producer/guitarist **Jerry Stucker** was in **Redstar Studios** (L.A.) tracking with drummer **Steve Gadd** and artist **Professor RJ Ross**...**Hans DeKline** mastered a release for the **Diamond Platinum Rings** and a new compilation for Raw Poetix Records at **Sound Bites Dog** (L.A.). ■

*Send Track Sheet news to bschultz@mixonline .com.*

L.A. GRAPEVINE FROM PAGE 120

sion and monitor switching between his ADAMs, Yamaha NS-10s and Auratones.

"My garage—my 'studio,' I should say," he says with a quick laugh, "is part tracking and performance space, part composition space for me and part mixing space. More than anything, I've tried to make a space where the sweet spot for the speakers is large enough that a lot of people can hang out and listen to what's going on, 'cause my core constituency is bands."

As much as he likes to work at home, during the past two years Monahan has made the drive up to Sacramento numerous times to record and/or mix at The Hangar, his car loaded up with a bag of cymbals, another bag of stomp boxes, his trusty '72 P bass and a United Audio mic preamp loaded with vintage tubes and modified compressors. He uses the studio because it offers top-notch, old-school gear at a rate that accommodates tight indie budgets. "It's great to be able to spend time getting sounds and not feel like you're under the gun every moment," he says. "The Hangar has absolutely amazing gear, a really great live room, tons of instruments and two consoles side by side—a Neve Melbourne and a Daking A-Range custom-built board."

Monahan takes me through the projects he's worked on in recent months, and it's obvious he's not hurting for gigs these days. He used The Hangar to mix the first solo album from Jonathan Wilson, whose profile in the musicians' community has been raised considerably by the Wednesday night jams he hosts in his Laurel Canyon pad. The guitarist/singer tracked it himself to 2-inch tape using the vintage MCI board in his house.

"For the mix," says Monahan, "we had Studer and Atari quarter-inch machines running for two different tape delays, along with an AKG BX-10, a BX-20 and an EMT, so it was just a massive amount of reverb and tape delay, and it was fantastic because a lot of his stuff is really psychedelic. That record isn't just *kinda* good, it's insanely great, totally beautiful, with amazing players."

Also in Sacramento, Monahan P/E/D'd an EP and a full-length of cover songs with his homies Vetiver. "I used no condenser mics on the whole record," he says. "It was all ribbons and dynamic microphones, a lot of Shures."

Back home in his garage, um, studio, Monahan tracked (live, of course) and mixed an album from Tussle, another San Francisco–based band, which boasts two drummers and specializes in heavily manipulated dance music. At press time, he was back in Sacramento tracking the debut album from L.A. buzz band the Broken West. "I have two drum kits set up on either side of the room so we can flip-flop back and forth," he says. "I have guitar amps satellited all over the place so we can try different things. I've got pianos miked, keyboard amps, electric pianos. There's a lot of stuff up so that I can grab things quickly. The great thing about The Hangar is they have an absurd amount of outboard gear and hardware. I almost don't wanna tell people about this place."

Closer to home, Monahan also likes to track at Stagg Street in nearby Van Nuys, another well-appointed, extremely affordable facility. For the most part, he stays away from the high-end studios, "because $1,000 a day doesn't make any sense on the budgets I'm working with," he points out. "I've been doing this for a while and the budgets are small, but I don't have a problem with that. I just want to work with people that I feel some real connection to, on records that I feel like I can bring something to." ■

*Send "Grapevine" news to bs7777@aol.com.*

Studios (www.blackbirdstudio.com). "The only exception was Vince's vocal chain: We stayed with a great-sounding Neumann U47 through a Daking preamp into an ADL compressor. But when we got to Vince's guitar overdubs, we tailored the guitar, amp and mic setup to each individual song and part."

The men tried to stick to a schedule that involved cutting rhythm tracks in the morning and layering instruments and vocals in the afternoon. The goal, which wasn't always achieved, was to record and mix a song a day, in time to enjoy the 5 o'clock margaritas made by Gill's guitar tech, Benny Garcia.

Hobbs is Gill's keyboard player and bandleader, and when he's not playing with Gill he's an A-list session player. He says that the atypical nature of *These Days* spurred the producers to think of instruments and recording scenarios in different ways. Major-label country projects tend to be geared toward a specific sound because country radio can be sonically homogenous. With four distinctive discs, though, homogeneity was an enemy. Gill, Niebank and Hobbs were determined that Gill's lead guitar would be featured throughout, and so the decision was made to eschew stereo piano, for the most part.

"The standard way to do a piano here is stereo, with a lot of echo, so that it sounds mighty and big," Hobbs says. "But because of the huge frequency span, it can cover up a lot of stuff. When I'm tracking, I usually try to find ranges and parts to play that don't occupy too much space. But a lot of times on this record, we used mono piano. It freaked me out to play parts that I wouldn't ordinarily get to play. It was like having a different voice. And Studio A at Blackbird has a great Wurlitzer and a great '73 Rhodes suitcase model. So I got to play some classic-sounding keyboards."

All the experimentation helped Gill to find one sound he'd been seeking for years: Eric Clapton's Bluesbreakers-era tone had long been a mystery even to Gill, who has played alongside Clapton at several shows and in the studio.

"He'd play the Strat in the middle position and get that tone," Gill says of Clapton's sound. "I tried to play there, but it didn't do what he was doing. But a friend had given me a 1959 Bassman amp, and we plugged the Strat into that amp when we were looking for guitar tones on this record. I plugged in, played it in the middle position, and went, 'Hey, found it!'"

Most of *These Days* was recorded on a Neve 8078 console, into Pro Tools, with API, Shadow Hills, Universal Audio and Daking mic pre's to augment the console. For instruments, the producers used an array of ribbon mics from Coles, RCA, AEA, Royer and Beyer. Guitar tones were generally captured through classic mics facing classic amps, but there were occasions when Niebank used the Focusrite Liquid Channel to find unusual tones. Engineers (Niebank is quick to credit assistant Drew Bollman) took care to keep the original band balance from the Neve intact throughout the overdub and mixing process; otherwise, mixing the 43 songs would have been a time-waste and a logistical nightmare.

"The mix was done through Blackbird's SSL 9000K, but it was a hybrid mix, using the balances we created in Pro Tools, splitting out groups through the console," Niebank says. "This helped make the best use of our time, but also retained our original creative instincts." *These Days* was roundly ignored by country radio, but it received the best reviews of Gill's career. "Yeah, but we had to make four times as much music to get the same attention," Gill says jokingly. "I figure, 'Sure, it's easy for you, Kanye: You only have to make one record at a time.'" ■

*Send Nashville news to skylinemix@live.com.*

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and they reckoned that it still is. I remembered that everyone who sat down at this console was blown away by the sound of it. Everything sounded more natural through it, like it sounds in the room."

Allaire nabbed the AIR Montserrat board and then turned it over to chief technical engineer Ken McKim for refurbishment. "We spent a lot of time doing the repairs offsite to minimize the turnaround time," McKenna notes. "We replaced all the patchbays, recapped the console, recapped the power supplies, but the board was in remarkably good shape.

"Our first client on it was Branford Marsalis—he was thrilled with it and the console performed flawlessly on his session, so it was a pretty auspicious way to kick it off. Since then, we've actually been doing more mixing on the console than we thought we would, in addition to recording."

Combined with the awe-inspiring Great Hall, the spacious John Storyk/George Augspurger–designed control room and 5.1 Augspurger custom monitoring, it's fair to say that the console switch was worth it. "It's a statement of what we consider quality to be," McKenna says. "There certainly are convenient aspects of digital, but I'm not sure there's something as satisfying as recording through a console like this."

**Back in the urban grit of Williamsburg, Brooklyn, a similar scene—albeit on a different scale—was played out at the indie rock haven Studio G (www.studiogbrooklyn.com).** Although the engineering/production team of Tony Maimone and Joel Hamilton, plus assistant Marc Alan Goodman, were booked solid with their customized 26x16x4x2 (Quad-capable) Auditronics console, Hamilton began to feel last year that his long-beloved board had hit the proverbial wall.

"I loved the EQ and the mic pre's on the Auditronics, but I didn't love a lot of other things about it," Hamilton says. "I was spending all my money attempting to turn it into something that it wasn't, which is—a Neve. I always wanted to get my own Neve console, and when I wound up doing a session on a 5316, I fell in love with it."

Hamilton's personal board/love child was procured from and commissioned by Sonic Circus. It's a Neve 5316 with 32 channels of 31114 of EQ/pre. An all-discrete 8-bus design, the desk gave Studio G the mechanics they had been craving with 24 channels of uptown 990 moving-fader automation. Paired with the studio's outstanding mic collection, choice outboard selection and relaxed vibe, the Neve helps to sell the room even better in a competitive environment.

Hamilton cautions against putting too much stock in a console swap for impacting business, however. "I can't tell you if someone looks at the Website, and says, 'I have to record there. They've got a Neve!'" he says. "I think people are more savvy than that these days. It's more about what we can deliver. This isn't a public studio with outside engineers working here: People get the room with one of us. So we're an important part of the equation."

Both sonic and fiscal improvements have been notable post-switch, however. "Keeping the Auditronics would have been easier—it's a great console—but the relative headache of the swap-out was worth it the minute we started working on this board," Hamilton says. "It's a hard thing to describe: the depth of the relationship of the kick drum to the bass, the air around it, the headroom, this vintage discrete gleam. We just felt like our jobs got more fun that day." ■

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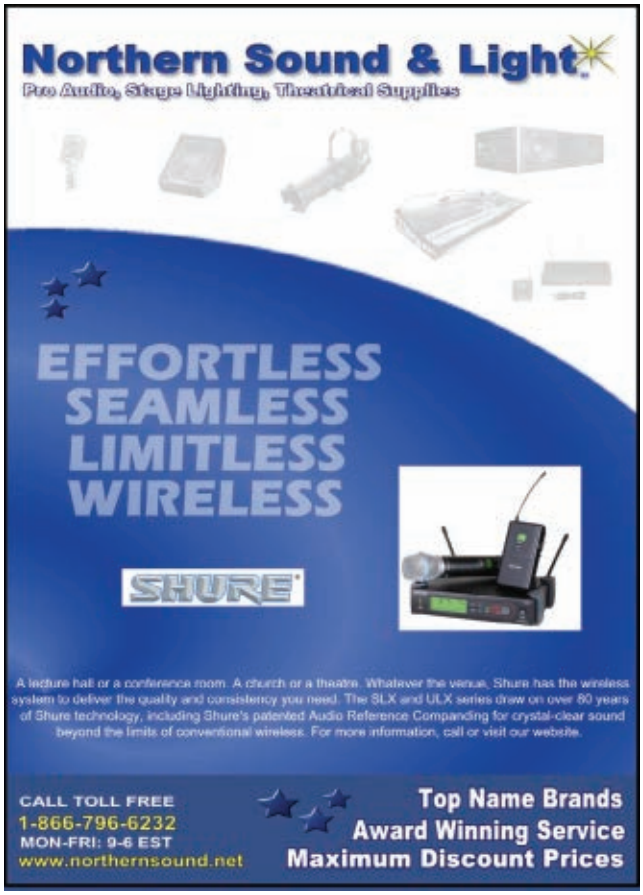

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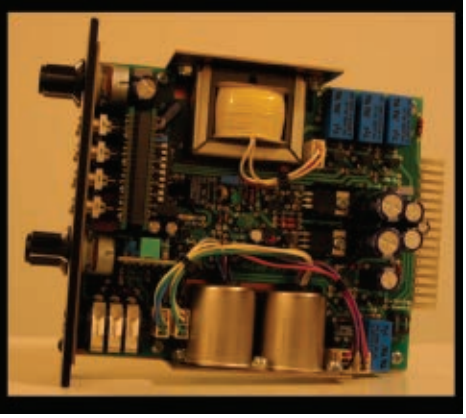

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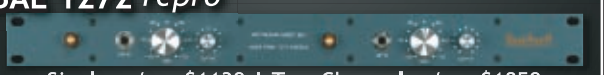

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BY STONI

# Akai MPC Series

## Production Techniques in the Studio, at the Gig

A driving force in hip-hop production, Akai's MPC music production center/drum machine has been used in all types of recordings, having crossed over to many musical genres and become a main instrument in live performances. In most studios, you'll find MPC units ranging from the original MPC60 to the compact MPC500 and up through the latest MPC5000. Here are some of my tips and tricks from years of using the various types of MPCs.

### COMPATIBLE PROGRAMS

If you use several MPC drum machines and want to exchange files, or you want to share files with other MPC users, here's a quick, easy method. Before beginning this process, save your drum kits and sounds in a program (PGM). Now, let's say you're working on the MPC4000 and want to bring your programs, sounds and samples into the MPC500. Connect both units to the computer via USB cables. The MPC4000 comes pre-installed with a program called ak.Sys, which provides access to its hard drive while it's mounted on the computer. Once the MPC500 is connected to the computer through the USB cable, it mounts to the computer desktop as a separate hard drive. The MPC500 reads files through its Compact Flash card memory slot. With both units mounted on the computer's desktop, you should now be able to drag-and-drop files from the MPC4000's ak.Sys system to the MPC500 that's mounted on the computer. You can also use this configuration for the MPC1000 and the MPC2500, which also have optional hard drives that can be mounted for gaining access.

### ZIPPING WAV SOUNDS

You can import sounds into the MPC2000 using a 100MB or 250MB Zip disk. The newer MPC1000 and MPC2500 models can store files on a Compact Flash card or internal hard drive, or read directly from a DVD drive. To drag-and-drop WAV files from my computer to an MPC2000, I usually connect a USB Zip drive to my computer and hook up a second Zip drive to the drum machine's SCSI port. With the USB Zip drive connected to my computer and the Zip disk inserted, I can search my sound libraries for WAV files. Afterward, I take the same mounted Zip disk from the computer, insert it into the MPC2000 and load my WAV sounds. Working from the MPC2500, I can load sounds directly from a DVD without mounting anything to my computer. This unit is the only model that has a CD/DVD-ROM drive.

### BEGIN THE SEQUENCE

The MPC is a pattern-based sequencer. On power-up, the default setting for a basic pattern is usually 16th notes that are quantized within the 4/4 time signature. If you're trying to take your track and beat to the next level when sequencing with the MPC, then adjust the time signature, which changes the flow of how I begin a pattern. By doing this, you'll notice a difference in the way that the beat, rhythms and patterns swing.

### THE LINEAR RECORDING APPROACH

Most MPC users are familiar with creating one pattern at a time and then making pattern-based songs, but here's a way to make the MPC have a more linear recording feel when putting your music together. Start this process by going into Song mode to insert all of your created patterns into one song. While in Song mode, use the Convert feature to transform this song into a pattern. Once the song has become a pattern, you can add instruments and tracks, and play straight through this same pattern—which is really your song, but in a style that gives you a feel for linear recording.

### OUT ON THE ROAD

For live performance, I prefer my MPC2500, which can create a patch phrase of my track. I start by making a beat using the MPC2500 and then sample the beat back into the same drum machine to create a patch phrase of my track. So rather than create pre-recorded sequences to perform with, I can shoot all of my original compositions directly from the MPC2500 by simply tapping on the pads.

*Producer/writer Stoni with all of her MPC units*

To do this, first create your sequences. Now press Mode/Record, and with the input indicator set to Main Out, press Play. Once you've completed this, you won't see any audio levels, but when you press the F6 pad from within the Record page and then press Play/Start, you'll begin recording all of the audio from your pattern. Press Stop, name the sample, assign it to a pad, hit Mode/Trim, scroll to find the "named sample" you just created and edit the sample to your liking. After editing, select Chop (the F5 pad) from the screen and hit Do It. Now the sample should be chopped into different regions. From that same page, Convert (F4 pad) your "named sample" into a patch phrase. Here, you can also change the patch phrase's tempo by pressing Do It (F5 pad) from the screen. Your patch phrase is completed. Go back to your main screen and assign that "named sample" to a pad so that you can easily trigger your sample in a live performance. ■

*Stoni is a hip-hop producer and music technologist based in New York City. Visit her at www.stonisndz.com.*

# 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.**

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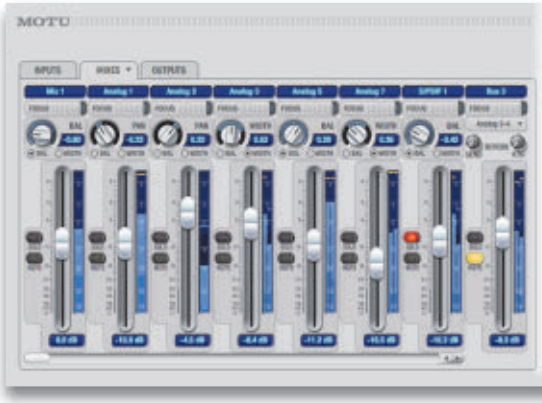
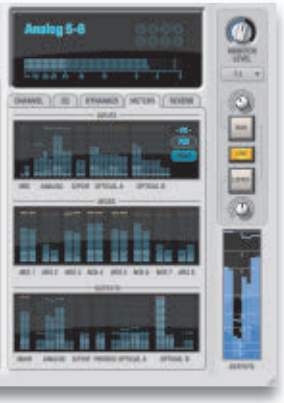


Peak / RMS metering



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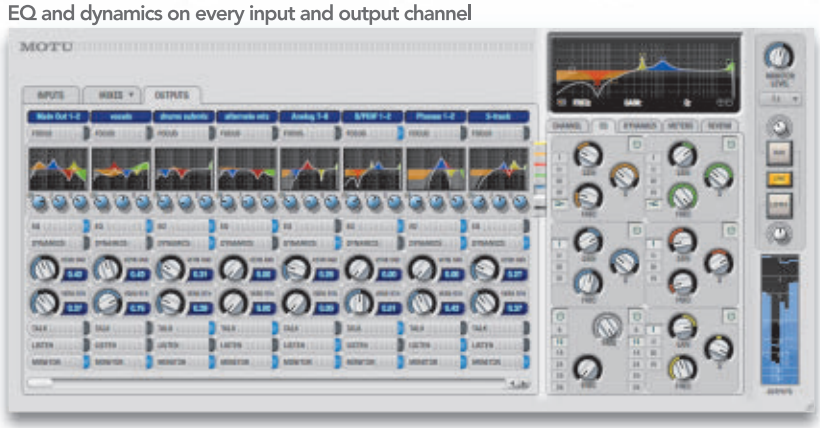

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