

# MIX

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PROFESSIONAL AUDIO AND MUSIC PRODUCTION

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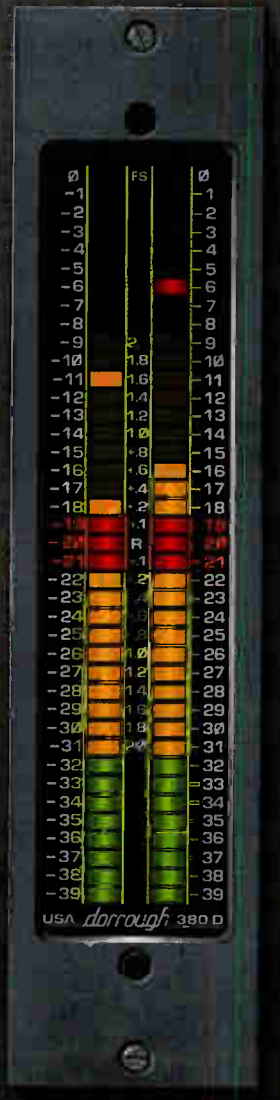
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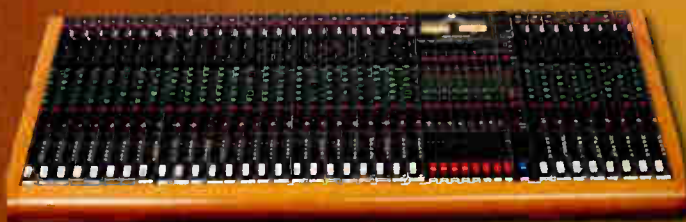
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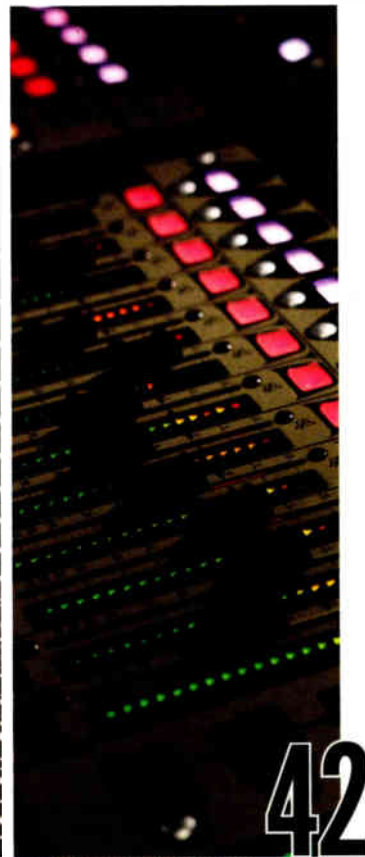
Music Instruments & Pro Audio



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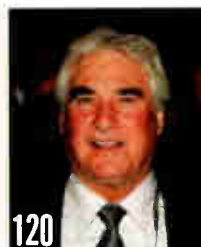
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## ▶ Let It Roll

**A**s we usher in 2009, we're all too aware that the economy is still tanking and the worst is yet to come. Everyone's being hit hard, but the effect on the touring industry is difficult to measure.

By all accounts, the top tours of 2008 did surprisingly well. According to *Billboard* Boxscore figures, concert grosses totaled almost \$4 billion worldwide—an increase of almost 13 percent over last year and the highest annual figure to date. The business looks great on paper, but it's not as simple as that.

During the toughest financial times, people take refuge in entertainment; this trend goes back to the days of the Great Depression, when Americans flocked to movie theaters to forget their troubles. And in the era of the "staycation," local entertainment is a relatively cheap way to have some fun: Cash-strapped consumers might be more willing to shell out a couple hundred dollars for Madonna tickets now than that trip to Paris is out of the question.

It's safe to say that the biggest tours are carrying the overall business: Bon Jovi's Lost Highway tour grossed \$210.6 million and drew 2,157,675 fans. Bruce Springsteen was right behind, grossing \$204.5 million, and AC/DC just tacked 15 arena dates onto their huge Black Ice tour. But the top end's not the end of the story. Even as record year-end box-office figures roll in, overall concert attendance continues to decline. This drop is partly by design, as promoters schedule fewer shows and book smaller venues. In other words, ticket prices are up, but units are down. And as fewer people attend shows, the financial hit is felt harder by the smaller productions. Of course, it's also important to remember that the 2008 tours were planned—and most tickets purchased—before the economy bottomed out in the fall, so as the touring business catches up with economic trends, 2009 will surely prove to be a challenging year.

Our January issue is devoted to live sound; we're ringing in the new year with bonus coverage of some of the hottest tours of the season, all proving there's no single formula for success: Metallica is roaring through packed arenas across the country with a new streamlined P.A. hung in the round and, for the first time, a complete digital system, from front-of-house to fiber-optic zone control. Meanwhile, AC/DC's blockbuster road show is being mixed on an analog board built in the '80s. Rounding out the musical spectrum, we report on the Chris Isaak, Goldfrapp and Caexico tours.

And even though the business forecast may be a big question mark, on the technology side the tools for live sound engineers are more exciting than ever, from the slew of powerful new digital consoles fresh out of PLASA and AES, to sophisticated software apps tailored for touring, with more debuts on deck this month at NAMM. Thinking about a new board? This month, we bring you a complete guide to the latest in digital touring consoles.

When it comes to touring, if there's one thing you can count on it's this: Guitars will always be loud. Steve La Cerra talks to veteran engineers out on the road with classic rock acts to find out their unique ways of taming the beast onstage.

Happy new year,



Sarah Jones  
Editor

## Mix

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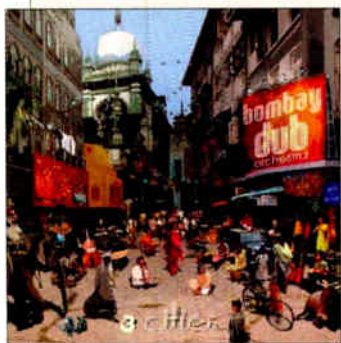
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World Radio History

## Mastering Tales From the Front Lines



Coinciding with Mix's December focus on mastering, we asked readers to tell us about their most memorable mastering projects.

One of my most interesting mastering projects has been the Bombay Dub Orchestra's second release, *3 Cities* (Six Degrees Records, 2008). This album has more than 75 virtuoso artists participating. The musical numbers combine electronic (dance) sensibility and synthesized melody and rhythm instruments with extraordinarily recorded string orchestra, Indian classical instruments and voices. With a dynamic range from "very quiet" to "ultra-loud," with wide-ranging sonic depth (from "in your face" to "very distant"), it was a challenge to master this classy roller-coaster adventure and unify the pieces each at just the right level. Listening to one track after another

is like getting a free high. I try to play a piece from this album for every client who comes into the studio; [they] inevitably sit there mesmerized by the jaw-dropping experience.

Bob Katz

### More on Mastering

One of the largest projects to come through our door was Willie Nelson's *One Hell of a Ride* (Sony/Columbia/Legacy). A four-CD, career-spanning box set, it includes re-recordings from 1954 to 2008 (100 songs total). Our studio was crammed with dozens of cartons of master tapes of varying formats. Just about every tape had been well-taken-care of. That being said, our tape oven ran nonstop through the mastering process. Tape formats included ¼-inch, 15 ips, full-track mono; ¼-inch, 15 ips, 2-track NNR; ¼-inch, 15 ips, 2-track Dolby A; ¼-inch, 15 ips, 2-track dbx; ½-inch, 2-track, 15 and 30 ips; Sony DASH; and, of course, the ubiquitous WAV file.

The big challenge was to establish sonic continuity on music that spanned 54 years! A lot of that was accomplished using our hybrid A/D mastering chain. That chain includes an in-house-designed analog transfer section, SPL PQ mastering EQ, Pacific Microsonics A/D conversion, Weiss EQ1-LP and DS1-MKII. The

project was literally "one hell of a ride," but a thrilling and exciting one at that.

Joe Palmaccio  
*The Place...For Mastering*  
Nashville

I'd have to say my most recent interesting mastering project would have to be the *Stickman* project for bass player extraordinaire Tony Levin. It was the first Chapman Stick project that I mastered and the fact that it happened to come from one of the most phenomenal Stick players on the Planet just made it all the more pleasurable to work on. What really made the project unique for me is that the Stick happens to be an instrument I'm very familiar with since I've been a player for the past 24 years.

Larry DeVivo  
*Silvertone Mastering*  
Saratoga Springs, N.Y.

Currently, my favorite LP project is Alicia Keys' *As I Am*. Alicia and Ann Mincieli [Keys' recording engineer/album coordinator] came up with the delightfully insane idea of

moving my entire mastering suite out to her studio. I often try to come out of my comfort zone and do something that's never been done before, so into her live room I moved. I brought it all: my big speakers, console, chairs and even my artwork.

Between two grand pianos and all of my stuff, the room filled up quickly, yet was still comfortable to work in. There were so many unforeseen benefits to doing this:

1. The album *never* leaked. We mixed and mastered inside one building and had total control of who got copies of what songs and when.
2. [We had] the time and freedom to try anything.
3. Input: Everyone sounded off on each other's work. If there were changes to be made, they could be done within an hour for every-

one to hear.

We mixed and mastered simultaneously for a good three to four weeks, with most days running until 3 a.m. It truly was an old-school approach to making a modern LP.

At any given time, Manny Marroquin would be mixing upstairs in the mix room, Ann would be cutting new vocal or piano parts with Alicia in another room, while I was mastering downstairs in the live room. Some nights we would all be working on the same song at once.

I relied mostly on my near-field monitors (Focal Solo 6s). I used three gobos to narrow the stereo field and reduce reflections from the sidewalls, and that solved all the problems I was hearing. I also had two other studios and multiple cars in the driveway to listen in, as well. Some evenings we would jump into Ann's Range Rover with a reference CD, take a long drive and listen to the whole album. Manny would make mix notes as I made mastering notes on each song. We'd return to the studio around 11 p.m. and make our changes until 3 or 4 a.m.

Every song was mastered from both 1-inch tape (Ampex ATR, 15 ips, Aria Electronics) and a digital file via Pro Tools.

Overall, what truly made this one of my favorite albums to work on was the environment at the studio. In addition to being incredibly talented pros, Alicia, Kerry, Ann, Manny and the entire staff at Oven Studio are simply really good people. This made the rigors of doing something so out-of-the-box flow so smoothly.

David Kutch



Mix's February issue will focus on portable production. What was the craziest place you've recorded? E-mail us at [mixeditorial@mixonline.com](mailto:mixeditorial@mixonline.com).



A black and white photograph of an astronaut on the moon, with the lunar surface and the Earth in the background. The astronaut is wearing a full space suit and is positioned on the left side of the frame, looking towards the right. The moon's surface is covered in craters and rocks, and the Earth is visible as a bright, curved horizon in the distance.

# The First Step

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active multi-channel subwoofer represent an exceptionally versatile and accurate compact audio system from Genelec, the leader in professional active monitor design for over 30 years. This system is intended for close proximity use, as in computer sound systems, gaming or other entertainment based workstation environments. Its small size, smooth design, amazing sound quality and rugged construction make it ideal for any type of listening requirement, for every audio lover. Take your first step at [www.genelec.com/firststep](http://www.genelec.com/firststep)

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Isoc-Pod™ - Isolation Positioner/Decoupler™

# GENELEC®

# CURRENT

compiled by Sarah Benzuly

## TOP 10 TOURS OF 2008

Artist	Ticket Sales
Bon Jovi	1,832,785
Bruce Springsteen & The E Street Band	1,528,334
The Police	1,127,718
Kenny Chesney	1,033,395
Celine Dion	954,223
Iron Maiden	920,151
Rascal Flatts	848,446
Jonas Brothers	753,435
Dave Matthews Band	753,045
Michael Buble	686,269

—2008 Ticket Sales through Q3, courtesy PollStar

## Grammy Museum Opening!



L-R: AEG president/CEO Tim Leiweke; museum executive director Bob Santelli; Recording Academy chairman emeritus Terry Lickona, chairman Jimmy Jam, and president/CEO Neil Portnow; L.A. Mayor Antonio Villaraigosa; and L.A. District 9 city councilwoman Jan Perry.

"You have a new home for music," said AEG president/CEO Tom Leiweke at the grand opening of the Grammy Museum at the L.A. Live complex on December 5. After marveling at the dramatic transformation of the once-dreary downtown area from an eyesore to a gleaming high-tech oasis, L.A. mayor Antonio Villaraigosa zoned in on the museum, describing it as "a new iconic landmark" for the city.

Museum executive director Bob Santisi mused that all those who would enter the museum would be "making an emotional connection to an art form that is very dear to us."

When the speakers finished, everyone stood up and, holding gilded scissors, cut the ribbon. They then led the first of several groups of schoolkids across the plaza for a first look at the new educational facility. —*Bud Scoppa*

mp3 100% COMPATIBLE

ERA Digital (division of Entertainment Retailers Association, UK) logo design, part of an attempt to make "MP3 compatible" an industry standard.

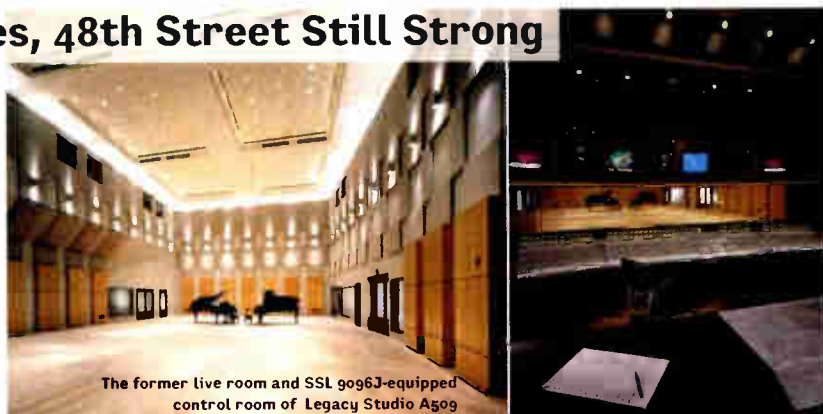


## No Re-Gifting Necessary

Warner Bros. Records 50th anniversary is celebrated in *Revolutions in Sound*, a 240-page book and USB Flash drive containing 320 recordings from the label's history. Inside: exclusive interviews and photos, and insider accounts of how the hits were born. Also available is a deluxe box set comprising 10 CDs and a booklet authored by music educator/historian Warren Zanes.

## Legacy Studio A509 Closes, 48th Street Still Strong

The live room known as Legacy Recording's Studio A509 (New York City) closed its doors on November 21, 2008. An awe-inspiring 4,060-square-foot room that has hosted a long list of orchestral, film score and Broadway cast recordings since it went online in 2001, the facility appears to be the latest victim of the financial reversals in the recorded music market. However, Legacy is retaining key staff members and moving them over to their soon-to-be renovated studios on 48th Street. *Mix* will follow the redesign in a new design blog on [www.mixonline.com](http://www.mixonline.com).



The former live room and SSL 9096J-equipped control room of Legacy Studio A509



# Survive the Wireless Transition

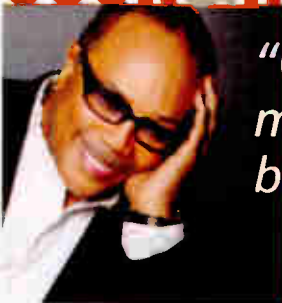
The looming FCC deadline (February 17, 2009) for the digital TV changeover that opens analog TV frequencies to other uses will spell changes for many wireless mic users. Here are 10 tips to ease the transition:

1. Check your system's frequency. Wireless in the 698 to 806MHz band are most affected, while others are not.
2. If you are in this frequency range, contact the manufacturer. For a fee, some companies may be able to modify or change your system to a different frequency range.
3. Move receivers closer to the transmitters. Proximity is everything, so instead of placing your receivers at FOH, try finding a spot for them onstage and snake the receiver's line-level output to the house position.
4. Look into a better antenna. Highly directional antennae offer more gain for improved RF performance.
5. Upgrade your antenna wiring and keep signal paths as short as possible. Larger conductors and beefy shielding equate to reduced signal loss.
6. Watch your battery life. As batteries wane, so does signal strength.
7. Most wireless manufacturers have online frequency locators and frequency coordination programs to help avoid trouble spots. And run some RF tests at the location or venue in advance to prevent last-minute "surprises."
8. Consider whether you even need wireless. Many times, wireless is essential, but does a mostly nonmoving bass player really need that wireless rig? Reducing your wireless channel count means fewer problems.
9. Look into alternatives. A colleague recently replaced the wireless rigs in a theater show with some well-placed shotgun mics with great results. On location shoots, a pocket digital recorder and lavalier mic may provide a solution in RF problem areas.
10. Time to upgrade? If your current wireless has been around the block (or world) a few times, maybe it's time to step up to the improved performance of today's new systems. And with some manufacturers offering rebates on new purchases or exchanges on existing gear, the timing couldn't be better.

## Get Connected

Coinciding with the wireless conversion, the CONNEXT 2009 HD Professional Audio Conference/Expo will be held February 13-15, 2008, in downtown L.A. to focus on new developments in HD digital audio. Find out more at [www.connextHD.com](http://www.connextHD.com).

## seen & heard



*"Creating memorable musical experiences is both my business and my passion."*

—Quincy Jones, on partnering with Harman to explore and evaluate licensed and co-branded products in the consumer, automotive and pro audio fields

## Hellboy in AstoundSurround

*Hellboy II: The Golden Army* on DVD and Blu-ray Hi-Def is the first movie to feature audio mixed using GenAudio's AstoundSurround™ software, which immerses viewers in a 360-degree spherical soundfield. Based on more than 16 years of audio perception and brain-processing research, this technology introduces elevation

and depth perception into the audio environment. The AstoundSurround software was used at Mi Casa Multimedia during the release's mastering process. According to Mi Casa president/chief engineer Brant Biles, "When asked to remaster major motion pictures for home-theater listening, I am always presented with the challenge of taking a mix that is meant for theatrical presentation and

making it sound as good—if not better—for playback in a smaller room. I'm constantly looking for a process, a tool, an edge—something to allow the listener and the audio to occupy the same space. With GenAudio's AstoundSurround technology, I am able to enhance spatial dimensionality, depth and clarity. It is truly a unique and impressive 4-D audio software-based technology."



## on the move

**David Gray,**  
Fantasy Studios  
engineer (Berkeley,  
Calif.)



**Main Responsibilities:** Work directly with artists, their staff and engineers to ensure satisfaction.

### Previous Lives:

- 2004-2007, full-time musician/performer
- 2003, Curbside Records partner
- 1997-2004, Rumsey Electric Co. inside sales

**The most interesting part about co-founding an indie record label, Curbside Records is...** seeking out impressive new talent and being involved in their projects from beginning to end. Being indie and D.I.Y. with very little staff, you surprise yourself with how many different hats you can wear daily to get the job done.

**The most interesting concert I've attended was...** Keith Urban and Carrie Underwood at A.C. Boardwalk Hall (Atlantic City, N.J.).

**Currently in my iPod:** Little Big Town (love those four-part harmonies), Sugarland, Billy Joel, Desoto Jones Aurora.

**When I'm not at the office, you can find me...** at home working on new projects—my own music or D.I.Y.-style home improvements.



## Mixing Costello

Creative Group's (New York City) VP of audio post, Sue Pelino, is currently mixing the second-half of the Sundance Channel series *Spectacle: Elvis Costello With*. Jay Vicari at Music Mix Mobile recorded the series in his new truck and mixed the songs, including all of the iso tracks, to Pro Tools, and then provided those elements to Pelino, along with a copy of the songs on the show (mixed in 5.1). She then conformed and synched all the tracks. Read a full Q&A with Pelino on mixing the 5.1 tracks at [mixonline.com](http://mixonline.com).



"We wanted to have a really good surround presence and really feel like you're in the theater."  
—Sue Pelino

## Industry News

Elias Arts (NYC) added creative director/composer/general manager **Mike Pandolfo**...**Matt Bush** fills in the VP of sales role at **Crown Audio** (Elkhart, IN)...Zurich, Switzerland-based **Barix AG** appointed **Marcel van der Meijis** as VP of sales/marketing...**David McCarthy** joins **Apogee** (Santa Monica, CA) as director of sales...Responsible for California and Hawaii sales is **Jonathan Peirson**, **Yamaha Commercial Audio Systems** (Buena Park, CA) district manager...Working closely with **Sound Devices'** (S.F.) engineer department is **Paul Isaacs**, principal applications engineer... **Johnson Knowles** is the new field applications engineer at **Bosch Communications** (Burnsville, MN) and is based out of Dallas...Distribution deals: **TransAudio Group** (Las Vegas) will distribute **Daking** (Wilmington, DE) worldwide; **Shanghai MYC Technology Company** is the exclusive distributor of **Meyer Sound** (Berkeley, CA) products in mainland China, Hong Kong and Macao; distributing **Fairlight** (Sydney) gear in Scandinavia is **Sound-Works**; **One Systems** (Nashville) will be rep'd in Ottawa, Ontario, Quebec and the Canadian Maritimes by **EGLE Marketing** (Terrebonne, Quebec); **PRECO Inc.** (Burbank, CA) will serve **Linear Acoustic's** (Lancaster, PA) clients on the West Coast; and **Symetrix** (Mountlake Terrace, WA) named **Cadon Technical Sales** to handle Missouri, Iowa, Nebraska, Kansas and Southern Illinois.



Matt Bush



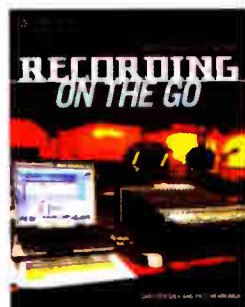
Mike Pandolfo



Paul Isaacs

## Bookshelf

*Recording on the Go: The Definitive Guide to Live Recording* Gary Gottlieb and Paul Hennerich share techniques for recording live audio and tips for getting into the field for production sounds. The authors take you step-by-step through the process: from planning audio content to bringing in the right equipment, setting up the recording and editing the results. Course Technology, \$44.99; [www.courseptr.com](http://www.courseptr.com).



## In the Name of Art

Sweetwater president and founder **Chuck Surack** recently accepted the Business Committee for the Arts' **BCA Top Ten** award from boardmember **Martha Ingram** of **Ingram Book Group**. Sweetwater was one of ten companies recognized for their support of the arts in the U.S. through grants, volunteer programs, matching gifts, local partnerships, sponsorships and board membership.



# \$10 Billion

Expected retail value of global mobile games market in 2013, up from \$5.4 billion in 2008

—Jupiter Research

# \$6.9 Billion

Estimated value of unlicensed music trafficked on P2P networks in 2007

—Multimedia Intelligence Research

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Also available: CU 400 charging unit



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# SESSIONS

## Flora—Mixing The Decemberists Under Ground



Tucker Martine in his Flora studio

It's common for musicians, producers and engineers to migrate to music centers: L.A., New York, London, Nashville. Less typical are music/audio pros like Tucker Martine, who left his home in Nashville to open his own facility, Flora, in the Pacific Northwest.

"My dad is a songwriter so I was exposed early to music, the craft of songwriting and the studio environment," Martine says. "I started looking for ways to reconcile my interests: songs, playing drums and experimenting with weird noises. Ever since, I've been trying to record music that excites me with folks that are excited about the studio as an instrument."

Martine had a setup in Seattle for 13 years before moving to Portland in 2006. His projects have included Bill Frisell's Grammy-nominated *Floratone* ensemble album, as well as recent releases from Laura Veirs, Erin McKeown, Mudhoney and more. His cur-

rent studio, in the basement of his home, is primarily a mix room, but two attached spaces and tielines to his living room allow him to track overdubs, too, as he did when he produced The Decemberists' forthcoming Capitol release. Recording was done at Kung Fu Bakery in Portland; all mixing and overdubs were completed at Flora.

"This Decemberists record is a concept record," Martine says. "Each song overlaps with another; there isn't a moment of silence on the whole album. We had 17 segues that had to be well-thought-out and executed. The lead voice of the songs was delivered by five different characters. Colin [Meloy], the lead singer, sang the parts of three of these characters. To differentiate [between them], we had to find three distinct vocal treatments.

"One character was more sinister and he got a little distortion and slapback. Another was cleaner with EMT 140 reverb and the third had a slapback pre-delay, which was feeding the EMT."

Flora is equipped with an Ampex ATR half-inch deck, MCI 2-inch 16-track, Pro Tools HD and ProAc Studio 100 monitors. "If I don't need the computer for editing or additional tracks, I will stay on tape," Martine says. "I typically mix to the Ampex deck, as well as Pro Tools. I have been liking the Crane Song Phoenix plug-in on digital mixes, though for The Decemberists this time it was all tape mixes through the API 2500." Other go-to processing gear includes a UREI Silver 1176, Memory Man delay, Manley Massive Passive EQ and Chandler TG1 compressor.

"I often get better results at my place than I do at fancy studios," says Martine, who at press time was mixing Death Cab for Cutie. "Getting good results has more to do with working in an environment that I'm comfortable in than it does with having the nicest console and the sweetest room acoustics."

—Barbara Schultz

## project studio

### Pan American Sound



Paul Burch uses his Pan American Sound studio for his own projects and local singer/songwriters and bands.

Paul Burch ([www.paulburch.com](http://www.paulburch.com)) is one of those D.I.Y. types who embodies the indie spirit in Nashville. This singer/songwriter/multi-instrumentalist has recorded six albums of his own (the last two for Bloodshot Records), and has performed with Mark Knopfler, Ralph Stanley, Ryan Adams, Vic Chesnutt and Charlie Louvin, as well as labelmate Jon Langford of The Mekons and the Waco Brothers. His music has been used in productions from Disney, the Sundance Channel and PBS. In October 2008, one of his tracks was selected for HBO's new series *True Blood*.

"But as an indie artist, I never had the budget to record in proper studios," Burch says. "The one time I did record in a proper studio was for my last album [*East to West*], when Mark Knopfler invited me to see British Grove Studios [London]. I came back to Nashville wanting to have a bit more control over my sound."

Burch wanted a dedicated but affordable space



## Paradise Studios — Restoring Tower of Power



Paradise Studios co-owner/engineers Kirt Shearer (left) and Craig Long

To commemorate Tower of Power's ([www.towerofpower.com](http://www.towerofpower.com)) 40th anniversary, drummer David Garibaldi has been mining his personal collection of rehearsal and gig tapes dating back to late 1970 for digital restoration and CD release. Garibaldi, a TOP member from 1970 to 1980 and from 1998 to the present, is overseeing TOP's *East Bay Archive* project, which presents previously unreleased recordings that offer aural snapshots of the band's evolution.

So far, the project has yielded *Volume 1*, a two-disc set comprising both sets of a gig recorded on April 23, 1973, at K-K-Katy's nightclub (Boston). "I think young people coming up today don't get a chance to be in a band like this and experience music the way that we have,"

Garibaldi says. He also confirms that future releases are in the works.

Garibaldi brought his selected tapes to engineer Kirt Shearer, who co-owns Paradise Studios ([www.paradisestudios.net](http://www.paradisestudios.net)) in Sacramento, Calif. "I've recorded there and I'm familiar with his work, and it's a great studio

in Sacramento," Garibaldi says. "And Roger Smith, our keyboard player, lives in Sacramento and has worked with Kirt a lot and recommended him."

"We're doing more mastering and restoration [projects]," Shearer says. "My partner is Craig Long, and we've been in our current location since 1986. Sacramento is a market that doesn't have a studio on every corner where the production staff has 25 years of experience. We've become known as the place to track your basics or complete a project, or have it mastered, or have a problem fixed that somebody can't handle in a smaller facility or at home. It seems like every seven years or so you have to look at your business plan and make sure it still works." —Matt Gallagher

## Track Sheet ::

Kris Kolp's Log Cabin Studio (Tallahassee, FL) has been enlarged to accommodate the addition of a control room centered around a Toft ATB console. Kolp's recent projects

include a country-rock album with singer/songwriter Dan Newman and Shyam's upcoming release, which Kolb calls "a meld of East and West that includes kirtan chanting call-and-response with the Tallahassee Boys Choir"...Omnisound Studios (Nashville) released its first proprietary CD last month, an acoustic Christmas album called *Appalachian Christmas*. Produced by Pat McGrath and studio general manager Steve Tveit, it was recorded and mixed at Omnisound and mastered at Independent Mastering (Nashville). Tveit says that plans are in the works to create other studio-owned content for future release...Producer/engineer/musician George Walker Petit mixed a new album for Portuguese singer/percussionist Catarina Racha. Petit worked at Legacy

Studios (NYC) with producer Eduardo Nazarian and engineer Kevin Porter. The CD was then mastered by Oscar Zambrano at Zampol Productions (NYC)...Recent performances captured by the Le Mobile (Carlsbad, CA) truck include Sara Bareilles at the Fillmore (San Francisco) and The Offspring for Yahoo! Live Sets. The facility's portable system was used to record the Pepsi Smash with Fergie and Natasha Bedingfield in Los Angeles, Robin Thicke at SIR studio and Glen Campbell at the Troubadour, L.A...Chris Bell mixed a new release for Dirtfoot on the SSL 9080J at Luminous Sound (Dallas)...Dream Theater recorded in Studio A at Avatar Studios (NYC) with producers John Petrucci and Mike Portnoy, engineer Paul Northfield and assistant Rick Kwan.

Send "Sessions" news to [bschultz@mixonline.com](mailto:bschultz@mixonline.com).



In Log Cabin Studio, owner/engineer/producer Kris Kolp works at the Toft ATB24 console with Shyam

by Barbara Schultz

where he could take his time recording, and where the room had its own vibe.

"I found a small building, about 26-by-26, with a high, pitched roof and concrete floors. The echo was terrific but a bit of a nightmare. Gradually, I've tamed it with cloth-covered Homasote planks in the corners, homemade partitions and gobos. I bought the cheapest Oriental rugs from eBay and put them down until I started to get a good tone."

Burch began working on his next release, recording to his Tascam 88 half-inch machine. He gradually brought in more gear: a 1-inch MCI 8-track, his collection of amps (Gibson, Vox, small Fenders), his grandmother's piano and an upright bass that had been a gift from in-demand session bassist Dennis Crouch.

Experimenting with room acoustics, mic placement and baffling became part of the process of

recording Burch's upcoming seventh album (*Still Your Man*), as he set about applying all that he's learned from engineers and producers he's known. Another early project done at the studio was the soundtrack to a trailer for a videogame based on a comic book called *Redball 6*.

"Friends of mine wrote the comic book, and it became so popular that they decided to try to get it made into a videogame. I offered to record the soundtrack for the trailer. That enabled me to try a lot of instruments and work with different volumes and see how things were spilling all over the room."

Burch says he also tried a "zillion different things" equipment-wise through rentals from Blackbird Audio before developing his own feel for what works in the room. He uses primarily ribbon and tube mics (Coles 4038, MXL V69, Neumann

U47 RCA 77DX, 44A, Varicoustic). Ribbons are recorded through an AEA pre, and tubes through a Pendulum Audio pre. "I go straight to tape, no EQ or compression," Burch says. "I mix either through a Yamaha PM1000 with some Neve-like output transformers that Mercenary Audio put in or through a Mackie Onyx, which, if you're careful, is terrific for giving you exactly what you put in." Monitoring is via powered ADAM A7s.

With the kinks worked out of his setup, Burch has completed his next release (due this year), as well as projects for singer/songwriters Claire Small and Will Kimbrough, and ongoing work for CMT-comedy program *Concrete Country*.

"One of the things this studio provides," Burch says, "is it really has an environment, meaning it has a sound to it. It's just one room, but it's an inviting place to make music." III

# CUSTOM DRUM TRACKS To Go

by Matt Gallagher

**N**eed a great session drum performance? Drummer-owned project studios offering custom drum track services are on the rise. For \$125 to \$1,000 or more per song (depending on the player), producers, artists, songwriters and composers can submit projects via file-format transfer or in person to pro—and often big-name—drummers who have the chops, equipment, tracking space and engineering savvy to create first-rate acoustic drum tracks.

A top recording/touring pro for 30 years, Dave Weckl ([www.daveweckl.com](http://www.daveweckl.com)) operates his The Garage studio in a converted two-car garage in Southern California, and has been creating custom



Dave Weckl

drum tracks since the late 1990s. “For almost *any* other instrument, it’s easy to just call someone to come over, or do a track in a hotel room, on a bus—wherever you can set up a little rig with a DI and/or a mic,” Weckl notes. “Can’t quite do that with a whole drum kit! In my case, most people come to me for *my* sound, and know they’ll get that,

right out of the door.”

Veteran L.A.-based session and touring drummer Russ Miller ([www.russmiller.com](http://www.russmiller.com)), works out of his well-appointed R.M.I. Music Productions. “The main limitation with [personal studios] is doing acoustic drums. It’s not only having multiple mics, input channels and gear, but also having a soundproof, good-sounding room that’s big enough,” Miller observes. “We’re talking about rooms that cost a lot of money to put together and are really designed for this. The investment is worth it; it’s paid for itself.

“At Paramount or Record Plant or Capitol, the drums sounded unbelievable [because of] two factors: the console and the room. I can never duplicate Capitol Studio A, but I can access the same mic pre’s and EQs,” Miller continues, adding that he outfitted R.M.I. with vintage API modules he prefers for drums. Miller also learned the ropes of tracking while playing sessions in major studios. “You can’t help but learn things when you do 200 to 300 albums over your career, standing beside some of the best engineers in the world and seeing how they do things.

“I make the same money that I made before,” Miller says of his business. “But now, the cartage and studio isn’t coming out of [clients’] pockets.” He charges his session rate plus a bit for the studio, but it’s

far less than it would have been in a major room. The client “saves a fortune and ends up with the same level of recording and playing.”

“It’s generally cheaper for clients to hire me and my room than a major studio space,” Weckl confirms. “I can also record four- or five-piece groups in my place, should live tracking be preferred. There’s no lounge or control room, but we’ll get a happening sound. I can do this quickly and at a high level sonically, because I’ve been doing it for so long.” The Garage is based around a Pro Tools HD3 Accel system and includes Daking mic pre’s and compressors, a Dangerous Music 2-Bus LT analog summing mixer, and Shure and DPA mics.

Myonlinedrummer.com is an example of a newer service that’s thriving in a smaller-sized market. Drummer Craig Sowby, whose Virginia-based Corner House Studio is located about two hours south of Washington, D.C., launched the service in 2007 as a component of his project studio business after relocating from Utah. Former clients in Utah began asking him to contribute his drum tracks remotely. “That got things rolling,” says Sowby, who built his business on word-of-mouth referrals and is receiving new clientele. The online business also feeds the studio. “Some of my studio projects come from myonlinedrummer.com. People sometimes end up coming to the studio or sending me other parts of their project to mix.”

“The studio is a basement studio,” Sowby says. “There’s a main control room, which is an open architecture. I have the drums in the same room, so I can easily access the [Pro Tools] DAW. I’ve done some acoustic treatments on the walls and ceilings to minimize reflections that way, but it works really great because everything’s so accessible. If I need to redo a take, I can almost reach over, hit the space bar and hit go again.”

All the drummers we spoke to embrace the changes that brought about their current businesses. “I love the drum room,” Miller says. “I love that Dave has his, as do Vinnie [Colaiuta] and J.R. [Robinson]. To me it’s just another phase, another part of being flexible in the

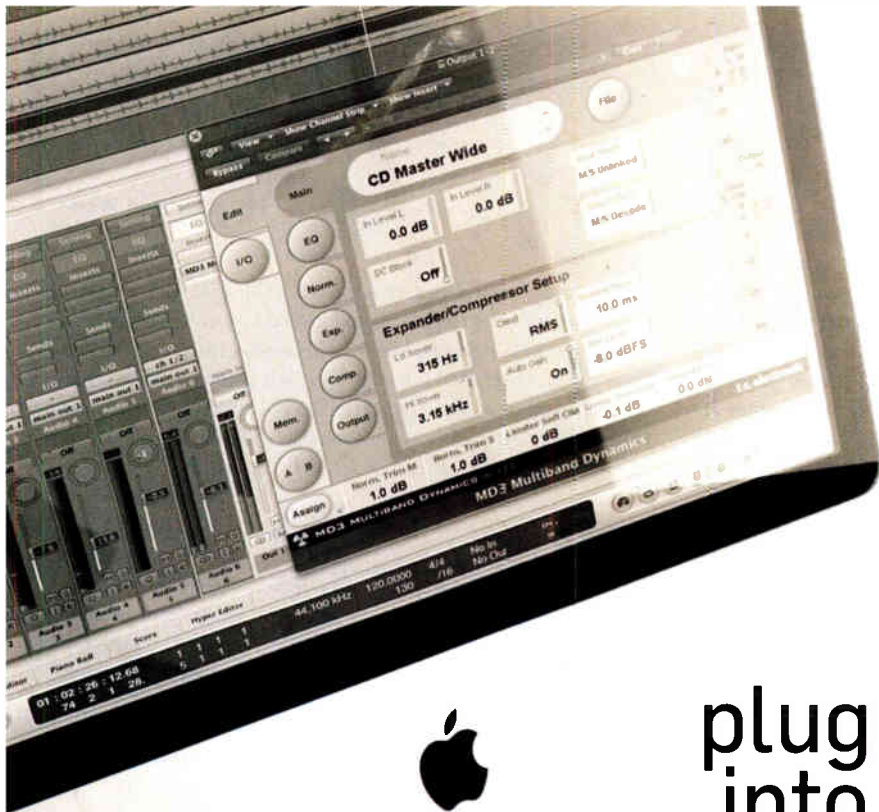


PHOTO: COURTESY OF R.M.I. MUSIC PRODUCTIONS

industry and it’s fun.”

Weckl reflects, “I knew that once people got their heads around the concept, this could be done globally, with ease. The Internet, in a big way, has allowed that to happen. It wasn’t very feasible until interfacing with the computer became possible and stable. I finally feel like I’m living my dream.” ■

Matt Gallagher is an assistant editor at Mix.



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# NEW YORK Metro

by David Weiss

If you can find your footing, despite the economic earthquake that's making the streets of New York City so hazardous, you just might make it safe and sound to your studio downtown. Downtown Music ([www.downtownmusic.com](http://www.downtownmusic.com)), that is, where an advanced business model may point at one way to survive in the recording sector.

While Downtown sports a sharp new recording facility in the

The natural sunlight-kissed A room is striking for what it doesn't have—a large-format console or producer's desk—as well as for what it does have: an intriguing mastering-style console that houses the Pro Tools HD 7.4 system and is flanked by a tight grouping of high-character outboard gear, including Chandler TG1 and LTD2, Pendulum Audio ES-8 and Dramastic Audio Obsidian. “My thinking was to not be weighed down with a giant desk,” Merrick explains. “This design frees up the whole front area between the engineer and the speaker. I always found it frustrating that, working with outboard gear, you're nowhere near the

sweet spot for listening. My theory was that if I'm not going to have a big desk, then take all the outboard gear and make that my desk, make it easily accessible and maintain the benefit of working in a DAW.”

Merrick, often working alongside with Downtown's in-house engineer Zach Hancock, saw to it that clients would have a completely opposite option available in Studio B. In stark contrast to the light and airy feel of Studio A, the smaller B room has a dark, mysterious vibe, in addition to its Pro Tools HD 7.4 setup and gear ranging from the Shadow Hills Quad Gama to the Neve 33609. The tone is set by interior designer Jackie Faust's Indonesian touches, such as porous Balinese door panels, which just happen to make great diffusors.

Clients who have been through Downtown speak to the concept's success up to this point, including Gnarls Barkley, Mos Def, Cold War Kids, Tony Maserati and John Alagia. With the combination of hard-won business experience, technical prowess and innovative spirit represented at Downtown, it will be extremely interesting to



Designed by Pilchner Schoustal International, Downtown Music's studio complex includes this large live room, two control rooms and two iso booths.

heart of Manhattan's hip SoHo (South of Houston) district, it's important to note that there's a lot more going on there than cutting and mixing tracks. Founded in 2006 by three former high school classmates—Josh Deutsch, John Josephson and Terence Lam—Downtown was conceived to combine a record label, music publishing, licensing group and studio into one 10,000-square-foot facility—and to get it right.

“We believe in putting both sides of the copyright back together,” says Deutsch, a former VP of A&R for Elektra. “One of the problems plaguing the music business is that it's so reliant on one revenue stream—the sale of recorded music, which is in relative decline—whereas the publishing and licensing business is growing by about 20 percent a year. We also have an online business, [www.rcrdlbl.com](http://www.rcrdlbl.com), which is an online advertising-supported label in a blog format where people can download music for free.

“And finally we have the studio, which is really an extension of the company's culture. We publish most of the artists and producers that work on a record, so there's a real flow of energy in the building—it's a throwback to the way that record companies used to be.”

While artists will no doubt find the well-oiled combination of music revenue-generating services attractive, they—along with producers and engineers—will probably be happy just to find themselves working at the studio, which is available for commercial use. The 3,500-square-foot complex sports two control rooms and a generous live room accompanied by two large iso booths. Designed by Martin Pilchner of Toronto-based Pilchner Schoustal International, the facility was shaped under the guidance of Grammy-winning engineer Vaughan Merrick (Amy Winehouse, Mark Ronson, Jason Mraz).

Control A features a mastering-style console housing Pro Tools HD 7.4.



see how the plan plays out. “Josh is in a rare position, having worked for a number of major labels and a publishing company,” Merrick states. “He understands all the parts of the business, and there aren't that many talented people out there these days that could pull together an efficient organization like this.

“The only thing to add to that is that the SoHo location is ideal. Most of us don't want to work in touristy areas, we want to work in a place that feels like New York City. You're looking for the Manhattan experience—not the Disneyland experience!”

Send New York news to [david@dwords.com](mailto:david@dwords.com).

**T**here is Braille on the 56-channel Neve 8128, though it's not close enough to the Flying Faders to precipitate an accident. And there's a familiar-sounding Yamaha grand piano in the tracking room. Jimmy Nichols runs this studio now, but he still calls it "Ronnie's Place" after its former owner, blind country superstar Ronnie Milsap.

"Ronnie told me that piano came on a ship from Japan," Nichols said, pointing to the Yamaha C9. "He said the ship docked in L.A., and that it went by truck to the studio.



L-R: Jimmy Nichols, Tonya Ginnetti and Sarah Darling

He said they set it up and didn't even have to tune it."

When Ronnie's Place was actually Ronnie's place, it was called Groundstar. There, Milsap recorded hits includ-

ing "Smoky Mountain Rain," "Stranger in My House" and "Lost in the Fifties Tonight." Opened for business in 1963, the studio has also been home to recordings by Johnny Cash, Ricky Skaggs, Merle Haggard and numerous others. Roy Orbison bought the building in 1972, and held onto it until Milsap purchased it in 1978.

But historical value doesn't guarantee viability in the modern studio world, as Nichols is well aware. Today, Ronnie's Place is the centerpiece of the Black River Music Group, which seeks to use the studio as a place to generate recordings that are marketed through the digital marketplace and through terrestrial radio.

The first Black River album released was Jeff Bates' self-titled effort, and the group is now preparing Sarah Darling's debut album. Darling is the group's flagship artist, and the setup for her album involves Internet vignette videos and radio promotion. Nichols expects the roll-out to be cutting edge, yet the album has some decidedly old-school elements.

"We didn't do any tuning on Sarah's record, and we didn't insist on filling up every empty space with fiddles and guitars," says Nichols, who played keyboards, sang harmony vocals and produced the album with engineering help from house engineer Ben Warner. "One radio guy said, 'Where are all the fills?' Maybe if you have a singer that's interesting enough and makes you hang on every word, that's enough. Everything about this production is about Sarah's voice, not about fitting her into a mold."

To capture that voice, Nichols used Korby Kat System microphones made in Nashville at Korby Audio Technologies and situated within the Blackbird recording complex. Most of the time, reverb came from two EMT plate reverbs that are housed in a closet above

the main recording floor and next to a balcony conceived for string sections and other kinds of ensemble recording.

"There's nothing like those EMTs," Nichols says. "They're special, but not obvious, and they're never intruding. We have so many toys and plug-ins, but I use these 90 percent of the time."

The album was recorded through the Neve into Pro Tools HD3. For mixing, Kevin Beamish used Apogee converters and mixed on Logic. Darling was less interested in the details of the thing than in the feeling of working in a place where some of her heroes recorded.

"This place has a vibe about it," she says. "It's got a presence. You can tell there's a history, and I found that I'm very creative when I'm in here. There's a magic to it."

"People panic about the state of the industry, but I don't think rooms like this will ever go away," Nichols says. "Sure, you can mix at home, in the box. But to track in a room like this, with the ambience and the grand piano and the plate reverbs is something completely different. That doesn't mean you can get greedy. We're booking right now at about 85 percent of the time, but that doesn't mean we can say, 'We're running a successful A room, so let's build a B and C.' It's about being small and being smart and knowing what your assets are."

Outside of the Black River Music Group, recent Ronnie's Place projects have included sessions from John Oates and Shelly Fairchild. In addition to Pro Tools, the studio boasts two Studer analog tape recorders, and the keyboard arsenal also features a Wurlitzer and a Rhodes that Milsap used on hit sessions. The far-field monitors are TADs that were time-aligned by Milsap's right-hand engineering man, Ben Harris.

Nichols is married to Black River VP/director of artist relations Tonya Ginnetti, and the family feel at Ronnie's Place is accentuated by frequent visits from Nichols' mentor, producer David Malloy. With Malloy, Nichols worked on projects from Reba McEntire, Mindy McCready and numerous others.

"We were working with Reba when David took me aside, and said, 'Jimmy, you've got to decide,'" Nichols remembers. "He said, 'At some point, you're going to have to make a choice. You can't do everything. You'll have to be an engineer or a songwriter or a piano player or a vocalist. You can't do it all.' That is the only thing in my 14 years of working with

The Neve 8128 at Ronnie's Place was outfitted with Braille on the controls for previous owner Ronnie Milsap.



David that he's been wrong about. He's been right about so much else, though. And he's been a model for drawing from experience but staying current. Now, I'm loving that I can have a historic room like this and still stay progressive."

Send Nashville news to [skyninemix@live.com](mailto:skyninemix@live.com).



# L.A. Grapevine

by Bud Scoppa

One of the big perks of working in a mobile recording studio is that every so often you get to make a really fun house call. Scott Peets, who has manned the tweaked-out vintage API board in the Design FX Remote truck since the early '90s, recalls with particular fondness the week he spent at Neil Young's ranch in 2007.

"Neil has a history with our truck from the '70s, when it belonged to the Record Plant," Peets explains. "He used the truck to record

friendly rivals, Guy Charbonneau's Carlsbad, Calif.-based Le Mobile. At the two-night Acoustic Christmas, which goes down at the Gibson Amphitheatre in Universal City, Design FX covers one of the rotating stages, and Westwood One's Biff Dawes the other.

Sadly, righteous old-school recording projects like *Chrome Dreams II* and *Forgiven* are becoming less common for Design FX these days due to shrinking major-label budgets, the increased popularity of the flight pack and dramatically increasing venue fees, which max out at a staggering \$100,000. Replacing those gigs are all sorts of DVD and film projects. Recent jobs include a 3-D movie

of a Jonas Brothers concert at the Anaheim Honda Center and Rogue Wave film shot and recorded at the Cricket Amphitheatre in Chula Vista. "Everything we do nowadays

is locked to picture, whether it's film, hi-def video or regular video," says Peets. "But that doesn't matter to us; it's all sound."

Peets and his veteran crew recently spent several days at Sony Studios in Culver City, recording the music for *Funny People*, an upcoming Adam Sandler film featuring a fictional cover band. This isn't just any band, however—Jon Brion, the musical director on the project, is the guitar player, and the legendary James Gadson is the drummer. "When I walked in, I noticed that James had paper towels taped all over the drums," Peets says with a laugh. "It looked really strange, but it sounded great."

The engineer/mixer's pride and joy is the 44-input API board, one of the few in-line monitoring APIs in existence. The mainframe and 550A EQs date back to the original Record Plant installation, while in 1994, API specialists Jeff Bork and John Dressel teamed with the Design FX crew to design a custom compact input module.

"We record to dual Pro Tools HD systems," Peets notes. "We use the Sigma timecode generator and a Brainstorm SR-15 Distripolyzer for timecode distribution. We reference the Pro Tools rigs to the Apogee Big Ben external clock. With dual rigs, we run one locked to the incoming timecode provided by the video truck and we'll jam-sync the backup machine. If for some reason there's a timecode dropout from the source generating the code, the Pro Tools will drop out of record. Jam-syncing the backup rig allows us to stay in record and still have the same timecode."

He rattles off what's in the rack: UREI, LA-2A, bx, Empirical Labs Distressors, a Neve 33609, a stereo GML EQ, Drawmer gates, an AMS reverb, a TC Electronic M-3000, Eventide H3000, SDE 3000 delay and a Sony reverb. The mic assortment includes Shure SM57s; AKG 414s and 451s; Neumann TLM 170s; Audio-Technica 4050s; and Sennheiser 421s, 609s and shotguns for recording the crowds. It doesn't hurt that Design FX is a rental company.

"It's like home to me," Peets says of his studio on wheels. "I've worked at other studios, and I also mix over at *Last Call With Carson Daly*, and it's surprising to me how great the imaging is in the truck. The API is so punchy. Kids come up when we're doing these shows, and ask, 'How'd you get it to sound so good?' They're used to listening to MP3s through earbuds, and when they hear this stuff their eyes get real big. It's fun to watch."

Send L.A. news to [bs7777@aol.com](mailto:bs7777@aol.com).



Producer Nico Bolas (left) and engineer Scott Peets parked the Design FX truck to Neil Young's garage to track *Chrome Dreams II*.

*Ragged Glory* in 1990, a year before [Design FX owner] Gary Ladinsky bought it. That record was cut in Neil's barn, but I believe he sold that part of the property, so when it came time to record tracks for *Chrome Dreams II*, he and Niko Bolas, who co-produced and engineered, decided to put the band in the garage Neil uses to restore old cars. It has this retro-rustic vibe, with old gas pumps in front, a rotary phone—he doesn't even like people using the Internet in the building."

Converting the garage into a temporary recording studio—analogue, naturally—required some temporary modifications. "They put in rubber flooring and filled in the holes with redwood chips," Peets continues. "The remote truck was parked on the side of the building; they had two Studer 2-inch 827s in there with a Pro Tools backup, D-to-A converters—the truck was so packed that they built a makeshift extension on the back of it as a tape-storage locker. They called it 'Plywood Digital.'"

More recently, the Design FX Remote crew drove from the company's Burbank HQ to Austin to track *Forgiven*, the latest album from Los Lonely Boys, with Steve Jordan producing and Bolas engineering. "They brought in a P.A. and stage because they wanted to feel like they were in touring mode," Peets recalls. "There was no pressure, no high-end studio vibe; it was like they were playing in their garage. They did the whole record that way, and they had a blast."

Among Design FX Remote's regular dates are KROQ's Weenie Roast and Almost Acoustic Christmas concerts, the annual Andre Agassi Grand Slam for Childrer. benefit and the Goldenvoice-produced Coachella Festival. The Coachella event, for which a best-of DVD is being assembled, is so massive that several trucks are required for wall-to-wall live-to-Web coverage, including one of Peets'



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# METALLICA

## MIXES IT UP

### MONSTERS OF METAL ROAR IN THE ROUND



PHOTOS: ROBERT SEALE

by Sarah Benzuly

**T**he members of Metallica have never been shy about expressing themselves. From assembling the 2003 *St. Anger* out of months of recorded jams to taking on Napster in a highly publicized battle over pirated music, vocalist/guitarist James Hetfield, drummer Lars Ulrich, guitarist Kirk Hammett and bassist Rob Trujillo keep pushing the envelope—in their Sausalito, Calif., studio or in arenas across the world. And on the band's current outing—touring in the round to promote their latest album *Death Magnetic*—they continue to be adventurous: new P.A. setup, new front-of-house board, all-digital signal path. In fact, there are very few elements on this world tour that have been mainstays on Metallica outings.

#### Going Digital

Longtime front-of-house engineer Big Mick Hughes is mixing on the new Midas XL8—a board he helped design with the company. Asked how he's enjoying making the switch to digital, Big Mick responds, "I am absolutely enamored

with it. It's a wonderful piece of equipment. I was always an analog guy, and I've always said, 'You'd never pry my XL4 from my hands.' The fact that you can carry one mix over to another tour if necessary [is great]. You spend years honing the mix on a world tour—you dial in things, you change things. At the end of that tour, [those changes are] done, except for some mental notes, but you still start from scratch again with an analog system [on the next tour]. Now I'll take the key, and wherever we walk in I can carry on where I left off.

"I'm still learning all the time, but you're only limited by your imagination," he continues. "And there's so much more control" compared to the analog systems. It's been a case of learning how to approach things, just with so much more equipment at your disposal. I use subgroups a lot. I'm using the graphics on the subgroups and a global EQ on various things. I have a kick/snare/hi-hat subgroup that I EQ on a graphic, and I have the same with the guitars and the bass, so I have global EQ over several mics together. Like take James:

There are four mics on James that sit together to make his rhythm sound. Well when you sum them all together, if you have one low frequency that pans and sticks out, it can be a little disconcerting because you don't normally have a global EQ; you only have an EQ on each mic. So you have to go through each mic, find out which one has too much of whatever frequency you're after and take a little bit out. Now I can do it on a graphic EQ on the subgroup."

However, monitor engineer Paul Owen (who is also VP at Thunder Audio, the sound company for this tour) has remained in the analog world. "I've always used an XL4 and I always will, I presume," he says. "I have too many scenes I have to get to [with a band on both UE-5 in-ears and Meyer Sound wedges], and I don't want to have to scout through pages. With as many vocals as there are and how they run around onstage, it would be virtually impossible. I don't have time to find the page; I have to do it on the fly."

Both engineers are carrying few items in their



The innovative—and slightly odd-looking—P.A. features Meyer Sound MILO and MICA loudspeakers, with 40 700-HP subs around in four columns of 10, with all boxes turned so that the drivers are sitting together in the middle.



Front-of-house engineer Big Mick Hughes at his FOH “traveling” rig, based around the new Midas XL8



Monitor engineer Paul Owen with “throwing-beer-proof” analog board

outboard racks, with drums seeing the most processing: DM317s and Klark-Teknik Square One on gates; dbx 120A Subharmonic Synthesizer on toms, because Big Mick likes a “big, thunderous floor tom”; and a dB Sonic Maximizer inserted across the tom-tom subgroup, something Big Mick would do normally in the analog world: “I figure I should take some resemblance of some things I used to use.” All mics, as with previous tours, are Audio-Technica, though this tour uses eight perimeter mics for vocals. On vocals, Owen uses Aphex Dominator 2s, as well as on all in-ear channels and wedges.

### Simultaneous Mixing

Not only has the digital board been useful in paring down the size of FOH, but the engineers have found that it has helped solve recording problems experienced on previous tours, where longtime Metallica studio engineer Mike Gillies would record the show, mix and post online within a week. For this tour, the band was keen

on a simultaneous mix and uploading the next day. According to Owen, “It was taking a couple of days to get the hard drives back to the studio to get them remixed and then booted up [on previous tours]. It was just taking too long, and that is why we decided to go with an SSL console in the tuning room so Mike can mix and get the songs up the next day. It saves a lot of time.”

“In the analog world, we gave the Pro Tools guy a split from the splitter,” Big Mick adds. “We set him up onstage right next to the split, so it was just a case of breaking it from the back of the splitter and feeding it to Pro Tools. Well, he moved—he’s in the dressing room area—and he’s got a small SSL desk that he uses to mix the show as the band plays so it can be put up online as fast as possible. He doesn’t have to record it on Pro Tools and then the next day take it away, mix it and then upload it. He can actually mix it for the Internet at the same time as I’m mixing the show in the house. And so all of a sudden, he’s 100 meters away; he’s not right next to the splitter any-

more. So to get the signal down to him, we took two of the I/O boxes of the XL8, configured them with all analog outputs—there’s 48 channels that we’re using at the moment. So the 48 channels get patched through to the I/O box that are on the network that route with four Cat-5 X/Y networks down to the dressing room area and he’s got the same channels coming straight from the splitter. It was so easy. We have two cables: a 100-meter run and 40-meter extensions that we put out occasionally just to give us the extra distance.”

But recording systems in a live situation can go down, so Big Mick also runs a Midas DN9696 recorder at FOH, placed next to the XL8 splitter. The XL8 splitter is configured so that he takes digital A, Tascam’s analog A and Owen’s analog B (which gives all of the different feeds), and then Gillies’ Pro Tools in the dressing room gets a split straight to the I/O boxes. And if that Tascam system goes down, Big Mick has a *third* system: the built-in XL8 recorder with Glyph drives, which he also uses as a virtual soundcheck machine.



**In-the-Round Problem Solving**

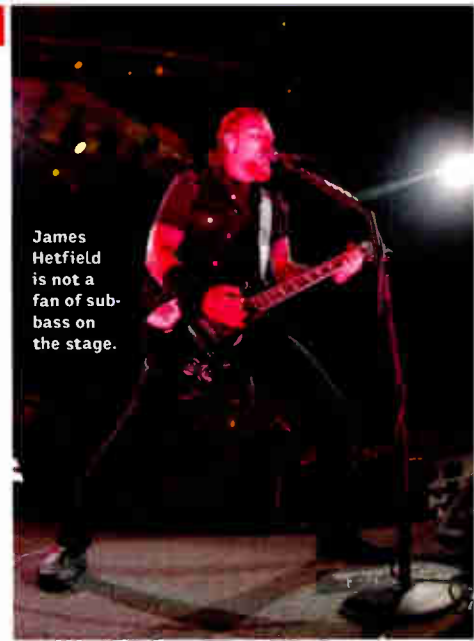
Although this is not the first tour where the band has performed in the round, it is the first time the engineers have varied from their usual system setup. "We've done in-the-round for many years, and anybody that's done in-the-round will always tell you how difficult it is; it's just miserable because you have so many different places for boxes that you get so many arrival times; bass cabinets you can never put in one place to get them to couple together to give you extra summation and good low end; phasing places; lobing," Big Mick says. "And when the band wanted to do it in the round, I said, 'Here we go again!' So I said, 'We're going to try something a bit different.' So we proposed the problem to Meyer Sound and went through a few different scenarios."

The result? A setup that provides clear, controlled sound: Eight equally spaced arrays, each comprising 12 MILO loudspeakers and four MICA loudspeakers. Forty self-powered 700-HP subs are arranged in what Big Mick is calling the "TM" system (named after Meyer Sound's Thomas Mundorf, who created the system); subs are arranged in four columns of 10, with all the boxes turned so that the drivers are sitting together right in the middle. "So the drivers are as close as possi-

ble without any interference between them," Big Mick explains. "It also creates a much more controlled bass pattern. So directly below the system, there's no bass. The band doesn't have any problems onstage with any big sub-bass things going on, because James doesn't actually like it; it modulates his voice too much."

"Because the pattern is so controlled, when you make it that tall in an array, we've had to delay the lower columns to steer the bass down because otherwise it creates this parallel flashlight beam all around the center of the arena and you don't get as much punch on the floor," he continues. "We bring it down so it just touches the edge of the stage. When Paul starts moaning about the amount of bass onstage, then we know we've gone just a little too far!" [Laughs]

With this setup, "We were able to steer it down so we are literally steering the sub down now from being blasted at the tops so that it just catches the top of the barricade and misses the stage," Owen adds. "Underneath the column, there is absolutely no bass under there. We have a choice now; we don't have to try and turn the bass down. We have to study each day according to the trim margin of the sub and of the arena. I walk around the stage, walk around the barricade



James Hetfield is not a fan of sub-bass on the stage.

and see if we need to have a sub steered down. I've done Metallica for nearly 23 years and this is the first time we're doing it this way," Owen continues. "We've actually been able to achieve equal sub-bass from upper and lower frequencies to the floor and equally all the way around, so it's quite a feat but it looks totally bizarre because there's four columns of 10 subs pointing at each other."

The in-the-round setup creates a bit of a "where is Big Mick sitting tonight?" puzzle. De-



"With the Recoils, I'm really enjoying the balances, especially the low end which holds up at low volumes as well as loud. When I listen to the recordings elsewhere, I feel the results are more representative of what I am hearing when I record."  
~ Ed Cherney  
(The Rolling Stones, Bonnie Raitt, Jackson Browne, Eric Clapton, Buddy Guy)



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~ Daniel Lanois  
(U2, Bob Dylan, Peter Gabriel, Emmylou Harris, Ron Sexsmith, Robbie Robertson)



"I trust my ears and how stuff hits me. Because I work in the same place all the time, I immediately know when things get better. I'm excited again! The Recoils look cool, are well built and I hear a tighter low-end. I like them!"  
~ Gary Paczosa  
(Alison Krauss & Union Station, Dixie Chicks, Dolly Parton)



"The Recoils definitely give you a more focused low end and more definition of where things are placed in the stereo image. They're an inexpensive and musical upgrade to your monitoring situation."  
~ John Leventhal  
(Shawn Colvin, Rosanne Cash, Joan Osborne, Michelle Branch)



"The imaging and solidity of the low mids and bass is just astounding. The Recoils are an amazing product I never knew I needed. Now I can't live without them. Damn you!"  
~ Nathaniel Kunkel  
(James Taylor, John Mayer, Good Charlotte, Little Feat, Bon Jovi, Neil Diamond)

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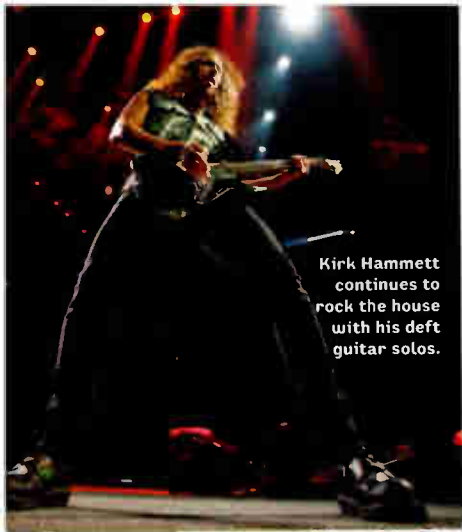
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**Stratus™ acoustic ceiling cloud**

Controls reflections over listening area. (three panels shown)  
Size: 24" x 48" x 2"



Kirk Hammett continues to rock the house with his deft guitar solos.



Rob Trujillo's signature "stomp the floor" bass-playing stance



Big Mick processes Lars Ulrich's kit so that he achieves a thunderous floor tom.

pending on the venue, the engineer can find his XL8 at either the side of the stage or on the floor at one end in the corner. "I kind of move around a lit-

tle bit; I'm kind of a variable," Big Mick says. "I'm usually up on the sides," he says. "If you stay in one place all the time, you'd only have an impression of the sound in one area. I'm really busy during the show so I don't have the time to stealthily sneak up in the seats and walk all over the venue. I'm not going to be leaping about like a gazelle in the stands when I should be mixing the show. So the problem is you can only rely on what people tell you what it sounds like."

Thinking of his traveling FOH compound in a positive light, Big Mick says that this setup allows him to get a broader picture of what's occurring around the venue, something most stationary FOH engineers are not able to fully achieve.

What's even more interesting is what you can't see: There are no analog cables as everything is digital—including controlling the zones. From FOH, Big Mick uses LightViper optical snake systems into Apogee converters, "and then we break out up in the system all the different zones from the Galileo [loudspeaker-management software that is controlling the processing], so we actually have two fiber optics that run from the driver that control all the zones," he explains. "There are 120 MILO boxes in the round, so that restricted using analog—all the analog patches that would have to be done going between the different zones and all the confusion of that; it's made it really slick."

Owen adds: "And the whole system runs on fiber optic up to the grid. Four Apogee D-to-A converters and there's four Apogee A-to-D converters in the control rack with five Galileos, so we've got about as high tech as you possibly can go on this." [Laughs] III

Sarah Benzuly is the managing editor of Mix, EM and Remix.



"I have to say that I am very impressed; the difference I hear in the sound of my nearfields is pretty striking. They seem more 'in focus' and have more low frequency extension. Even the low mids are clearer. WOW!"

~ Roy Hendrickson  
(Miles Davis, Pat Metheny, B.B. King, Cheap Trick)



"The Recoil Stabilizers are absolutely amazing! I've been raving about them to every producer, engineer, and friend that I know! They proved themselves as soon as I put them up! It's incredible how much difference they make!"

~ David Isaac  
(Eric Clapton, Stevie Wonder, Madonna, Whitney Houston)



"In these days when the focus seems more on esthetics than performance, it's nice to see a product that excels at both. The Recoils are terrific! The bottom end on playback feels very solid. It's a pleasure mixing with them. Consider me a fan!"

~ George Seara  
(Rihanna, Herbie Hancock, 50 Cent, Sting, Finger Eleven)



"With the Recoils I immediately noticed improvements in the low end clarity, to the point that I no longer needed a subwoofer. Incredibly, high frequency detail and image localization also improved."

~ Chuck Ainlay  
(Mark Knopfler, Dire Straits, Vince Gill, Lyle Lovett, Sheryl Crow, Dixie Chicks)



"The Recoils work superbly! I feel like the bottom end is very true and clear, and that the mids are right where I expect them to be. They took my monitoring system up a significant notch."

~ Ryan Hewitt  
(Red Hot Chili Peppers, Flogging Molly, Blink 182, Tom Petty, Robert Randolph)



"The Recoil Stabilizers are great! A huge difference from regular foam pads. They sound more stationary and connected. I'm quite happy with them."

~ Elliot Scheiner  
(Steely Dan, Fleetwood Mac, Sting, The Eagles, Queen, REM, Faith Hill)

**"worth their weight in gold."**

~ Jon Thomson - Resolution magazine



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World Radio History





# Miking Rock Guitars Live

**TIMELESS TRICKS  
FOR GETTING A  
STUDIO SOUND  
ONSTAGE**

By Steve La Cerra



**S**ince the dawn of amplified guitars, front-of-house engineers have grappled with players in a fierce battle for control over the mix—and nowhere is this more apparent than in the rock world. Usually the band soundchecks and the guitar player's rig is at a reasonable volume. When show time comes, the guitar player kicks it up a few dB. By the end of the evening, the guitar rig is pumping out 105 dBs. If the engineer asks the player to turn it down, the invariable response is, "I can't get my tone at a low volume." In an effort to keep the vocals audible, the P.A. must be cranked up louder. Call me old school, but I'd like the whole thing at a lower level.

Obviously, others feel my pain, as technology brings options for amplifying guitar while keeping both engineer and guitarist happy. To find the best techniques for capturing rock guitars live, I turned to classic bands who have honed their performances over many, many years on the road—and the veteran engineers who make them sound great.

When engineer Mark Newman toured with Blondie in 2004, "They wanted a very quiet stage, so they used iso cabs for guitarists Chris Stein and Paul Carbonara," he says. "Their amps were onstage [for easy access], and the cabinets were placed behind the drum riser. Each was a carpeted 18x18x40-inch custom cab and single 12-inch speaker, ¼-inch input jack and XLR output on the side, with hinged lids allowing access to the speaker and mic. The speakers were mounted horizontally within the box, cone facing up. We stuffed the box lids with fiberfill to deaden them, as they didn't like the 'closed-box' sound they were getting without the fill. I liked it better with the fill, as it added a kind of natural compression to the sound. We started with Shure KSM 32s inside the boxes, then changed to Beta 56s. We also added a Palmer PDI-09 DI in-line with the guitar signal path, just before it plugged into the speaker cabinet. I would then mix the two sources together to create the most killer guitar tone ever!"

Handling no less than seven input channels for one guitar rig is William Wellbaum (of Sound Image, San Diego, Calif.), the current house engineer for Pat Benatar. "Guitarist Neil Gerardo runs his rig in the 100-plus-dB range, so we have his two Marshalls pointed upstage to keep it manageable in the house," says Wellbaum. "I use three stereo pairs: L/R Sennheiser 421s, L/R [Shure] SM57s, stereo outputs from a Line 6 POD, plus a beyerdynamic M88. These are all at different levels in the mix. The 57s provide the overall tone, the POD gives me the low-mid crunch and I kick up the 421s for Neil's solos. The 421s and 57s are right at the grille, on-axis, with the 57s pointed close to the center of the speakers and the 421s pointed at the edge of the cone. The single M88 is placed back from the rig by a few feet, and I use it to capture the overall sound of the entire rig. Neil is a huge part of the band's sound. His Marshalls are running an eight out of 10, and he is quite prominent in the mix."

Don "Dodge" Dodger, currently out FOH mixing for Foreigner, agrees with the offstage cabinet philosophy: "We are totally on in-ears these days and don't even have any amps on-

stage anymore. Mick Jones' amp is in an iso box and I mike it with two Shure KSM 32s so I can split the pan out front hard L/R to keep it away from the lead vocal, which is up the middle. This gives a little more separation in the house. It may not be groundbreaking, but it works."

Employing a variation of the offstage cabinet is Kansas' production manager/FOH engineer Chad Singer. He uses a "fairly conventional" miking method on Rich Williams' guitar rig, but the cabinet location is a little unusual. The entire guitar rig is on the floor directly in front of Williams except for the Peavey 4x12 stereo cabinet. "We try to place that cabinet as far away from the stage as possible, either in another room or offstage in guitar world, blowing away from the stage," Singer says. "We cover the cab with thick drape to absorb as much sound as possible to separate a very loud guitar cab from the drum and vocal mics. I use two Heil PR-30 mics on the Peavey cabinet, slightly off the center of the speakers. I like the edgy, direct sound of the diaphragm, which helps separate the guitar in the mix from the warmer keys and bass.

"The entire band uses in-ear monitors without wedges or side-fills, and with no guitar cab onstage to provide that ambient sound, we 'fake it' in a number of ways," Singer continues. "We have a couple ambient mics onstage. Rich gets the direct guitar mics, the ambient mics and the entire front-of-house mix for a little clarity. That keeps Rich from feeling like his head's stuck to the side of the guitar cab, while at FOH I have



**William Wellbaum handles seven inputs for a single rig.**

a clean and direct guitar sound without a cab blasting onstage. The other electric guitar—played by our violinist Dave Ragsdale—is run through a Line 6 guitar POD, just using a mono DI without any guitar cabs."

Yet not all guitar players are happy with an offstage cabinet. "For the guitar tone purists that want in-ears, putting the cabinet completely offstage just doesn't work," says Brian Bavido, FOH engineer for Ringo Starr & His All-Star Band. "I



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## Miking Rock Guitars Live

found that turning the cabinets around [so they don't blast FOH or the audience] gives the players the 'feel' they want. If you take the cabinet completely offstage, the lack of air movement or vibration on the deck doesn't thrill most players. Iso cabs simply don't sound the same, they seem to choke the low end on the cabinet.

"I've also used Line 6 products at FOH," Bavidio continues. "I'll take a clean guitar line out to me, put it in the POD and then play around with sounds a bit. This is never used as the 'main' sound, but it can be added to fill



Brad Madix is a fan of the Speaker Simulator.

out the mix a bit. With the new Eleven simulator plug-in included on the Digidesign VENUE console, my world has opened up with tailoring sounds on a per-song basis. I've seen quite a few bands doing amp simulators only and it's real slick. I would prefer a band to just use simulators alone and not even try using cabs."

Engineer Brad Madix has worked with Shaker, Queensryche and Rush, and was introduced to the Palmer Speaker Simulator via Def Leppard in the early '90s. "I was immediately convinced that this would be great along with the pair of 57s on the Marshalls, adding a little 'direct' sound to the great cabinet sound I had," he says. "It's remarkable what happens when you put two things side-by-side: I spent the next several weeks trying to get the 57s to sound as good as the Palmers! I finally scrapped the 57s. The direct signal always

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World Radio History



## A Brief History of Analog Computing



1945: The Atomic Bomb



2007: Greg and Dave introduce the ATS-1 Analog Tape Simulator



2008: The Fairchild 660 in a 500 Series module

I wonder what comes next?

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## Miking Rock Guitars Live

sounded better. The low end was tighter and the entire signal was clearer. The result was a significantly more usable and cohesive guitar sound, with no bleed from the monitors.

"After that initial direct-versus-57 experience, I had better luck with large-diaphragm mics like the [Audio-Technica] AT4050, but I always gravitated toward putting the mics offstage somewhere. The sound was just less 'smeared.' Queensryche—like many acts these days—puts a pair of single-12 cabinets in a pair of custom-made road cases, and we stuck the 4050s in there. There were no phase anomalies, no leakage from other

sound sources and I didn't have to smash the mic up against the grille. I could back it off a bit and capture a little more of the cone. They had a superclean-sounding stage. I've used a similar setup with Shakira over the past couple of years, though she has a few floor wedges scattered around the stage.

"Another reason to consider using a direct or offstage mic setup is the shenanigans onstage, which brings me to Marilyn Manson. The odds that a mic stand would get knocked over on his stage were about 2 in 5! It just made sense to do as many things as possible direct and skip the whole headache. Consistency is also a huge factor. There are only a few knobs on the Palmers. It's hard to screw it up, and the DIs do the same thing every day. Any engineer who has spent any time fiddling with guitar mics knows that a fraction of an inch can entirely change the sound, especially when the mics are so close, as they need to be on an un-isolated guitar cabinet."

Kurt Schlegel deals with some very unconventional guitar rigs. "When mixing house for The Melvins," he explains, "there's always lots of amp to mike and lots of tone to play with. Buzzo's [King Buzzo, guitar for The Melvins] rig consists of a 4x12 and one or two single 15-inch speakers. The challenge is to make him even larger than life. For the 12-inch speakers, I use a pair of Shure KSM 32s on different speakers and pan the mics hard-left and



Brian Bavido experiments with amp emulators.

-right. These mics have great body, top end that's easy to work with and rarely require much in the way of EQ. On the 15-inch speaker, I use an Electro-Voice RE20 [sometimes a Sennheiser 421] on-axis and near the center of the cone to capture the lows and a really growly tone. This mic is panned center and run about 3 dB lower than the KSM 32s. All of these mics are placed pretty close to the grille and toward the edge of the dust cover, slightly off-center. The RE20 or 421 is on-axis to the speaker, but the KSM 32s are slightly off-axis. I'm careful about checking the phase of these mics because I am not combining the mics as a form of EQ. During the set, I raise the RE20 for solos or ride the groups of faders for the huge washes of guitar that Buzzo is nice enough to provide."

Over the past year, Blue Öyster Cult has done some shows where we had the pleasure of supporting Kansas, and their setup sparked an idea



Kurt Schlegel makes The Melvins sound larger than life.

that we now use for Donald "Buck Dharma" Roeser when we're playing small rooms. Buck's Steinberger feeds an X2 Digital Wireless, and the output of the X2 is connected directly into a rackmount effects device, typically an Alesis Quadraverb but sometimes a TC Electronic G-Major. The stereo outs of the effects device are patched into the effects returns of two 100-watt Marshall JCM900s, which drive one Marshall 4x12 cabinet switched for stereo operation. Needless to say, this rig can get kind of loud—and Buck likes it that way! In smaller rooms, this becomes a problem because the stage volume can overwhelm both the audience and the house P.A. system.

Our solution to this volume issue stems from what we saw Kansas doing with Rich



Mark Newman recently toured with Blondie.

[Williams'] guitar rig: We turn Buck's 4x12 around so that the rear of the speaker cabinet faces the audience. This keeps the cabinet from blowing out into the audience and overpowering the room. Behind the cabinet (where the front now is), we place a pair of dynamic mics, preferably Audix D3s. I'll start with the D3s at the center of the cone, move them an inch or two toward the rim of the dust cap, and then angle them about 30-degrees off-axis. This tames any high-frequency nasties; pointing any mic straight toward the center of the speaker cone usually results in a sound that's too brittle for Buck. Buck then gets a bit of guitar in his monitor or in-ears to make up for the lack of stage sound. Problem solved. III

In addition to being Mix's sound reinforcement editor, Steve La Cerra is tour manager and FOH for Blue Öyster Cult.

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# Compact Powerhouses

## DIGITAL LIVE SOUND CONSOLES COME OF AGE

By George Petersen

The Innovason Eclipse can handle up to 320 inputs.

A decade ago, this article would have been very short, but in that time, live digital consoles have come into their own. Today, they are not only being accepted by the live sound community, but also truly dominating major segments of the touring market. As the technology has matured, several trends have emerged. Greater numbers of channels are being controlled by increasingly smaller controllers; plug-ins are being accepted into the FOH and monitor "racks"; and as ever, software upgrades can expand the feature set of existing products without fear of obsolescence or bankrupting the sound company.

That said, there's a whole lot of product research going on in digital consoles for live applications. We checked in with manufacturers (listed alphabetically), asking about developments over the past year.

Available in standard formats or customized to user requirements, Allen & Heath's ([www.ilive-digital.com](http://www.ilive-digital.com)) iLive modular mix system combines a central iDR10 Mix-Rack loaded with the iDR-64 mix engine (offering 64 mix inputs and 32 configurable mix buses) and an iLive Surface controller. The flight-cased control surfaces are now available in four sizes, each with four layers: iLive-80 has 20 faders (x4 layers for 80 assignable strips); the iLive 112 has 28 faders for 112 strips; the 36-fader iLive-144 has 144 strips; and the 44-fader iLive-176 has 176 strips.

The iLive V. 1.3 software update features engineers' fader strips for wedges and in-ears, for separate fader control, and dedicated outputs to the operator's listen wedge and IEM

personal system. Optional processing and aux monitor mixes can be assigned to wedge or IEM strips. A new onboard Real Time Analyzer (RTA) lets users quickly identify feedback, tune room acoustics, tailor wedges and view the frequency content of any input or mix—or the spectrum of the main mix. Other pluses in V. 1.3 include two new FX presets—Symphonic Chorus and Hypabass, a sub-harmonic synthesizer—and the ability to control iLive from A&H's range of PL controllers for remote adjustment of mixes, mutes, levels and scene presets.

New iLive Editor software provides access to iLive's key facilities, with the convenience of viewing multiple information panels simultaneously. The Java-based program lets users configure show settings, or make changes to existing shows online or offline to save for later uploads. Besides the convenience of designing console setups from the tour bus or hotel, TCP/IP connectivity allows live channel mixing and processing over via Cat-5 or WiFi for tweaking console settings from anywhere in a venue using your laptop.

Cadac ([www.cadac-sound.com](http://www.cadac-sound.com)) has announced Q2 2009 shipping for its much-anticipated S-Digital live theater desk, which reflects the surface architecture of Cadac's J-Type analog board, offering a familiar mix environment, but with the benefit of digital control. The board combines a low-latency proprietary High Speed Digital (HSD)<sup>™</sup> communications system with a core busing system based around FPGAs with dedicated SHARC DSP devices within the DSP rack. This handles all input and output channels with fiber-optic or co-ax interfacing to the Stage Rack/preamps. A unique feature is scalability.



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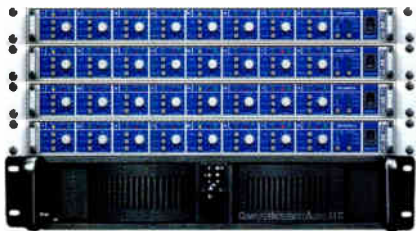


**H** Harman International

## Compact Powerhouses

Additional control surface frames can be brought in during rehearsals (for single- or multi-operator use) and then removed/relocated to reduce the mix footprint during performances.

After extensive testing on major tours, CIA Digital Console Systems ([www.ciallc.com](http://www.ciallc.com)) announces the System 32—a 32-input/output, software-driven virtual console powered by RML Labs' ([www.softwareaudioconsole.com](http://www.softwareaudioconsole.com)) SAC application. This FOH mixing solution can be internally split to 24 separate monitor consoles, utilizing a legacy console strip GUI that approx-



With its System 32, CIA puts an entire console into a single rack.

imates the look of an analog board. Each of the 24 monitor consoles in this 6U rolling rack (now with a shock-mounted ATA case option) can be remotely controlled via a TCP/IP connection.

Standard features include parametric EQ, compressor and gating on every channel, 16 DCAs, six stereo aux sends, eight master outs (and 16 virtual outputs) and 7.1 mixing capability. In addition to the 32-channel model, 48/64/72-channel versions are also offered.

The SD8 from DiGiCo ([www.digiconsoles.com](http://www.digiconsoles.com)) provides the major features and remote preamps of its D Series in a small-footprint package. Stealth digital processing in its Tiger SHARC FX engine offers effects, reverbs, dynamics, output matrix and more. Features include 37 moving faders, multifunction control knobs, electronic labeling and a 15-inch touch-sensitive hi-res TFT display. All 24 channel faders and 12 assignable aux/master faders can be instantly assigned as channels or masters, allowing 36 main faders to control inputs, if desired.

Even with the SD8's compact footprint, there's plenty of horsepower. Sixty mono or stereo channels—the equivalent of 120 channels—can run full DSP simultaneously. Also standard are 20-step LED bar graph meters next to each channel fader and the same snapshot automation control (with removable USB storage of sessions and setups) as the other D Series consoles. Besides a full-function 48x8 Stage Rack with re-

mote control of its studio-grade preamps and 100m MADI digital snake, the SD8 has onboard local I/O with eight mic/line inputs, eight line outputs and eight AES/EBU inputs/outputs.

Digidesign ([www.digidesign.com](http://www.digidesign.com)) expands its VENUE digital consoles line with the D-Show Profile Mix Rack System, an all-inclusive system that provides a size-conscious alternative to the larger and expandable D-Show control surface. Shipping since last April, the \$39,995 package provides a compact 24-fader VENUE control surface, D-Show V. 2.7 software, VENUEPack plug-in bundle and the Mix Rack with DSP and remote and local I/O. Mix Rack has two Mix Engine cards (expandable for more TDM plug-in processing), 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, MIDI I/O and an analog aux/com input. The system supports up to 64 tracks of Pro Tools record/play integration, and modular card slots allow various analog or digital outputs and Aviom A-Net personal monitoring options.

Profile Mix Rack ships with the VENUE-Pack 3.1 plug-in collection, which includes: Focusrite's d2 and d3; Digidesign's Impact, Reverb

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**Digidesign Profile Mix Rack**

One, Smack! and ReVibe; and Bomb Factory's BF-3A, Slightly Rude Compressor and Classic Compressors/MoogerFooger/Pultec Bundles. Among the upgrades in D-Show V. 2.7 software are cue workflows for monitor mixers, system lockout to prevent tampering in consoles located in public areas, real-time viewing of VCA automation tweaks and a comprehensive database for automatically updating plug-ins.

EAW ([www.eaw.com](http://www.eaw.com)) is finally shipping its UMX.96 24-bit, 96kHz digital live console, which features expandable 56x44 analog I/O, 3x12 integrated loudspeaker processing and full integration of SmaartLive, giving users immediate access to system measurement and calibration.

Software/firmware, V. 1.1. is now available, which brings many enhancements, such as effects and preset libraries, more snapshot capabilities with filtering and preview modes, improved file management, channel- and fader-safe modes, meter peak hold and screen-follows-selected channel options. Users will also appreciate the new UMX.96 Control Setup software. This gives users the offline ability to prepare shows in advance and transfer all necessary files to the console once they arrive at the venue.

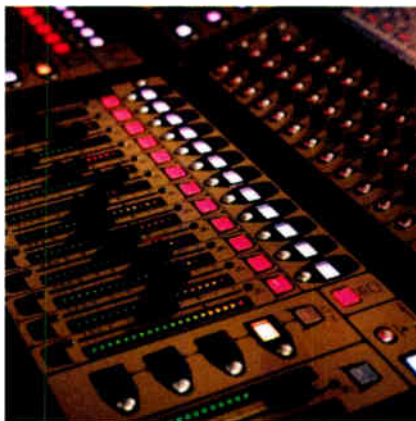
Offered in versions for film/video post, broadcast and live, Harrison's ([www.harrisonconsoles.com](http://www.harrisonconsoles.com)) Trion features a traditional surface rather than a central, shared-knobs approach. Hardware enhancements include transformer balanced mic preamps with a High-Z input setting for line-level and wireless mic inputs, and a Combo IO Unit intended for smaller configurations with 24 A/D converters, 16 ADCs and 16 AES I/Os, with MADi (optical or copper) interfacing to/from the board's MADi router,

which now has 12 4x1 summing points.

This lets the user select various mic inputs, sum them within the router and send them to recorders, trucks, etc., thus freeing more console inputs for mixing. Additionally, the MADi router can be set up with up to eight partitions, allowing router crosspoints to be stored/recalled independently, which is ideal for routing stage monitor or truck feeds without affecting console recalls. Harrison also offers new plug-ins for live users, including 2- and 6-Band DeNoisers, DeEsser, Sub-Harmonic Generator and Analog Tape Saturation, while adding FFT displays to its Harmonic Notch Filters and Buzz/Hum Killer. Other effects planned in the coming months include chorus, flange Stadium Simulation and more.

Keeping with the trend of smaller, high-power systems, Innovason ([www.innovason.com](http://www.innovason.com)) will soon be shipping its Eclipse digital control surface, the company's first new console release since it unveiled its flagship Sy80 in 2004. The Eclipse DSP engine lets users mix up to 104 inputs simultaneously into 48 mix buses with the capacity to manage up to 320 inputs on the console, using up to five remote audio racks. Eclipse is also the first live digital console with onboard multitrack recording, thanks to the MARS (Multitrack Audio Recording System) option, where 64-track audio can be recorded directly onto a hard disk plugged into the back of the console.

The compact (45.75x30.4-inch) surface has 48 faders and 48 configurable rotary knobs spread over four layers. The concept—called SmartPanel—effectively provides 96 “faders,” taking Innovason's original SmartFAD concept to the next level and making the console equally at home at FOH, monitors or in a remote van. An ID LED on each channel strip



**DiGiCo's SD8 features 20-segment LED meters along each fader.**

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## Compact Powerhouses

provides at-a-glance indication of the bus or function assignment to any channel.

Eclipse is compatible with all existing I/O and effects modules and comes with a dual redundant power supply as standard, along with the new NOVA operating software, featuring a modern, user-friendly graphic interface. The Muxipaire interface connects via co-ax or fiber-optic cable to the 64 I/O Stage Box up to 500-meters away, and a Cat-5 port ties into a 64-channel bi-directional EtherSound network. MADI and Aviom connect modules are optional.

The big news at Lawo ([www.lawo.de](http://www.lawo.de)) is the smaller-surface mc<sup>2</sup>56, which uses the same Lawo HD core as the other mc<sup>2</sup> models, with up to 512 DSP channels, 144 summing buses and 8,192-crosspoint routing capacity. Key to the mc<sup>2</sup>56 is its new control surface, which provides direct access to essential operating elements. Rarely used functions are handled via the touchscreen interface, for fast operation and a short learning curve. In addition, the new design reduces fader width to 30mm for efficient, ergonomic production. Every 16-fader bay has full-function, high-res TFT metering.

As in other mc<sup>2</sup> models, the mc<sup>2</sup>56 combines modularity with options for a second fad-

er row and PPM insertions. With frame size choices from 32 to 80 faders and special flight-case versions, the console is adaptable to a wide range of applications.

In other news, Lawo announces Release version 4 software for its mc<sup>2</sup> consoles. Besides adding features such as direct-out mute by fader, mix-minus self monitoring and tweaked graphical interface with more mouse functions, V. 4 adds Surround Fader Hyperpanning with a rotary knob twist for moving surround elements to any desired position with detailed metering in the AES-defined colors and the ability to offset any parameter.

CueStation 4.6 programming and control software for LCS Audio's ([www.lcsaudio.com](http://www.lcsaudio.com)) flagship Matrix3 digital audio system, adds new features, including Macintosh OS 10.5 Leopard support, multiple cue lists, a light-on-dark color scheme and a redesigned SpaceMap window, in addition to many other updates and improvements to audio processing, automation and the user interface. Also new is the Meyer Sound-certified version of JazzMutant's Lemur tablet, providing state-of-the-art programmable touch-

## SOFTWARE UPGRADES CAN EXPAND THE FEATURE SET OF EXISTING PRODUCTS WITHOUT FEAR OF OBSOLESCENCE OR BANKRUPTING THE SOUND COMPANY

screen control of the Matrix3.

Mackie's ([www.mackie.com](http://www.mackie.com)) TT System32 combines its TT24 digital live mixer, DS3232 digital snake, Cat-5 cable and U100 Network Card into a complete, 32x32 I/O plug-and-play mix system—just add stacks and racks. Recent system updates include the \$1,199 LP48 Dolby Lake speaker processing card, adding two/three/four-way crossovers with delay, with all outputs assignable to the back panel of the TT24 or DS3232 and Dolby's Ideal Graphic EQ™ and Lake Mesa™ parametric EQ. The user-configurable card has a full library of Mackie and EAW presets for easy system integration, and functions are controllable from the TT24.

The new TTv1.7 operating software en-

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CLAIR AUDIO POWER



Shipping this month, PreSonus' StudioLive packs recording and live mix features into a \$2,500 unit.

abling full I/O routing for digitally patching any channel or mix to any output. This enables the U100 and DS3232 to act as a digital splitter in FOH/monitor applications, assigning inputs/outputs to both consoles over Mackie's low-latency, high-bandwidth U-Net audio/control protocol.

Adapting technologies from its larger sibling XL8, the new PRO6 from Midas ([www.midasconsoles.com](http://www.midasconsoles.com)) offers similar audio performance in a smaller-footprint package. The PRO6 system comprises a Control Centre and two seven-rackspace units handling DSP and I/O. Despite its small 54x36-inch size, PRO6 can deliver up to 80 simultaneous input channels and as many as 32 discrete mixes in monitor mode, with all channels having full EQ and numerous dynamics processing options.

The standard PRO6 has 56 channel inputs, eight returns and 41 buses (16 auxes, 16 matrix, three masters and six solos). Also included are eight internal stereo FX processors, parametric EQ, eight (up to 36 max) 31-band graphic EQs, 5.1 panning and 1,000-scene save/recall snapshot automation and show file archiving. Also standard is a dual-redundant (192x192) 100-meter digital snake using Cat-5e copper cabling. With more I/O hardware, the PRO6 network can expand up to 264 inputs and 264 outputs, and the Klark Teknik DN9696 Recorder can be used for live multitrack recording and virtual sound checks.

The PreSonus ([www.presonus.com](http://www.presonus.com)) StudioLive 16x4x2 digital live performance and recording digital mixer features FireWire recording with JetPLL synchronization, delivering 22 channels of recording and 18 channels of simultaneous playback. The heart of StudioLive is the Fat Channel, which features EQ and dynamics on every input channel, as well as on every

aux, subgroup and main output. The highpass filter and four-band semiparametric algorithms are based on PreSonus' digital EyeQ equalizer. Other features include LED metering, 100mm faders, talkback, Mac/PC multitrack recording software and the ability to export to WAV file formats for compatibility with any other DAW. The unit has 16 XMAX mic preamps and two programmable 24-bit stereo DSP engines offering reverbs, delays and time-based effects.

Roland Systems Group's ([www.rolandsystems.com](http://www.rolandsystems.com)) RSS V-Mixing System—which incorporates the RSS M-400 live digital console, configurable digital snakes, remote-control mic preamps/stage boxes and multitrack recording—has been enhanced with new V. 1.5 software. In response to user suggestions, the free upgrade adds numerous features, including more flexibility in compressor and gate assignments, direct output assignment capabilities for interfacing with personal mix systems and recording splits, tap tempo delay settings, the addition of eight matrices, and a variety of user-interface shortcuts for accelerated workflow and improved ease of use.

Another small-footprint/high-performance board is Soundcraft's ([www.soundcraftdigital.com](http://www.soundcraftdigital.com)) new Si3, with 64 mono inputs, four stereo ins and 35 output buses (24 aux/group, eight matrixes and L/C/R main mix outs) in a single chassis. Standard are four onboard Lexicon effects processors, 12 VCA groups, eight mute groups and bar graph metering for all 35 bus outs. A touchscreen handles console setups; a Virtual Channel Strip with rotary encoders and OLEDs offers analog-style control and Fader-Glow illumination along the fader track to indicate the currently active function. A redundant power-supply module, MADI interfaces and AES/EBU input cards are optional.

**Mojave Audio**  
by David Royer



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## Compact Powerhouses

Soundcraft also announces V. 3 software for its Vi series, along with 96- and 72-channel upgrades for an input-to-mix capacity of 64 or 48 channels, mapped out on 32 or 24 motorized faders for the Vi6 and Vi4 respectively. The Vi6's 96 channels to mix can comprise the 64 stage box mic/line inputs, 16 line inputs on the local rack and the eight stereo Lexicon effects returns. Alternatively, a second stage box can bring mic/line inputs to all 96 input channels.

The V. 3 upgrade also gives Vi4 access to all 35 output buses—without adding a DSP card. Further V. 3 enhancements include automation snapshot filtering; a revised Cue List Management suite with channel label import/export; improved master bay metering; and finer input/output delay trims—all available from the desk or using the Virtual Vi offline editor software for advance show setup/downloads via a USB stick.

lel compression presets. A new dedicated VST host plug-in engine lets users run favorite VST effects either as inserts or on effects sends, with recall on Vista's Cuelist function.

Also standard in V. 4 are functions to speed up live operations, such as View Follows Solo/PFL, offering a choice of full-channel view or EQ/Dynamics/Pan view for faster parameter access during sound checks. And the new ability to copy aux mixes to other aux buses is intended to help monitor engineers dial mixes in quickly.

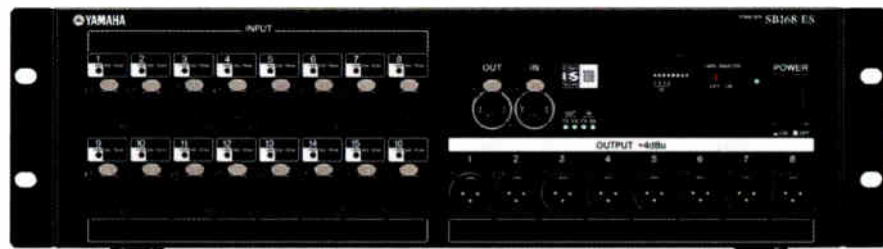
Just a year old, Yamaha's ([www.yamaha.com](http://www.yamaha.com)) DSP5D puts the functionality of its PM5D-RH digital console—less the control surface—into a rack unit that's controllable from a PM5D. A single DSP5D doubles the mixer's I/O channels, with 96 mono and 16 stereo channels accessible via four fader layers—or the user can add a second DSP5D unit for 144 mono/24 ste-



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Up to four of Yamaha's SB168-ES Stage Box units can be connected for 64 inputs, 32 outputs.

Consoles just keep getting smaller, with the prize going to StageTec's ([www.stagetec.com](http://www.stagetec.com)) AURATUS XCMC, which reduces the entire control and audio processing functionality of its compact AURATUS mixer onto a single board that slots into a standard NEXUS 3-U Base device. This new mixer-on-a-card supports console configurations of up to 54 audio channels and eight sums, eight aux buses, eight monitoring buses and eight mix-minus sums.

New for the company's AURUS console is the AURUS Virtual Surface, a software application that's ideal for use with a touchscreen tablet PC. Networked to AURUS via WLAN, this roving remote control lets users tweak/store console settings during rehearsals.

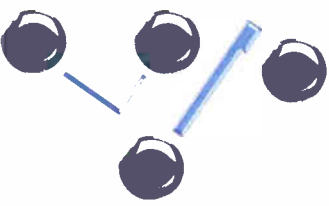
With a string of major tours and installs after only one year, Studer's ([www.studer.ch](http://www.studer.ch)) Vista 5 SR console keeps getting better. New is V. 4 software, which includes comprehensive 5.1 input source management and channel panning, but also an alternative Vintage Dynamics package. This offers a more retro style of compressor/gate/expander for a more pronounced, colored effect than the transparency of the standard dynamics, along with wet/dry blending and paral-

leo capability. The DSP5D can reside next to the host PM5D or act as a remote stage box (with all I/O accessible on the front panel) with the use of an optional digital cabling unit for communication up to 120 meters away over standard Cat-5 cable.

Designed as the "perfect companion" to its M7CL and LS9 digital consoles, Yamaha's SB168-ES Stage Box is also useable by the PM5D/DM1000/DM2000 consoles and DME digital mixing engine. Unveiled at AES and now shipping, the cost-effective SB168-ES is a scalable solution offering 16 channels of remote-controlled analog mic/line inputs, each with its own high-quality head amp, combined with eight line outputs, all at 48 kHz. Up to four digital Stage Box units can be connected offering a total of 64 inputs and 32 outputs, depending on the number of YGDAI card slots available on the specific console. The inputs/outputs can also be assigned to any of the 64 channels on an AuviTran ES-100 unit for Ether-Sound connectivity. III

*George Petersen is the executive editor of Mix and runs a small record label at [www.jenpet.com](http://www.jenpet.com).*

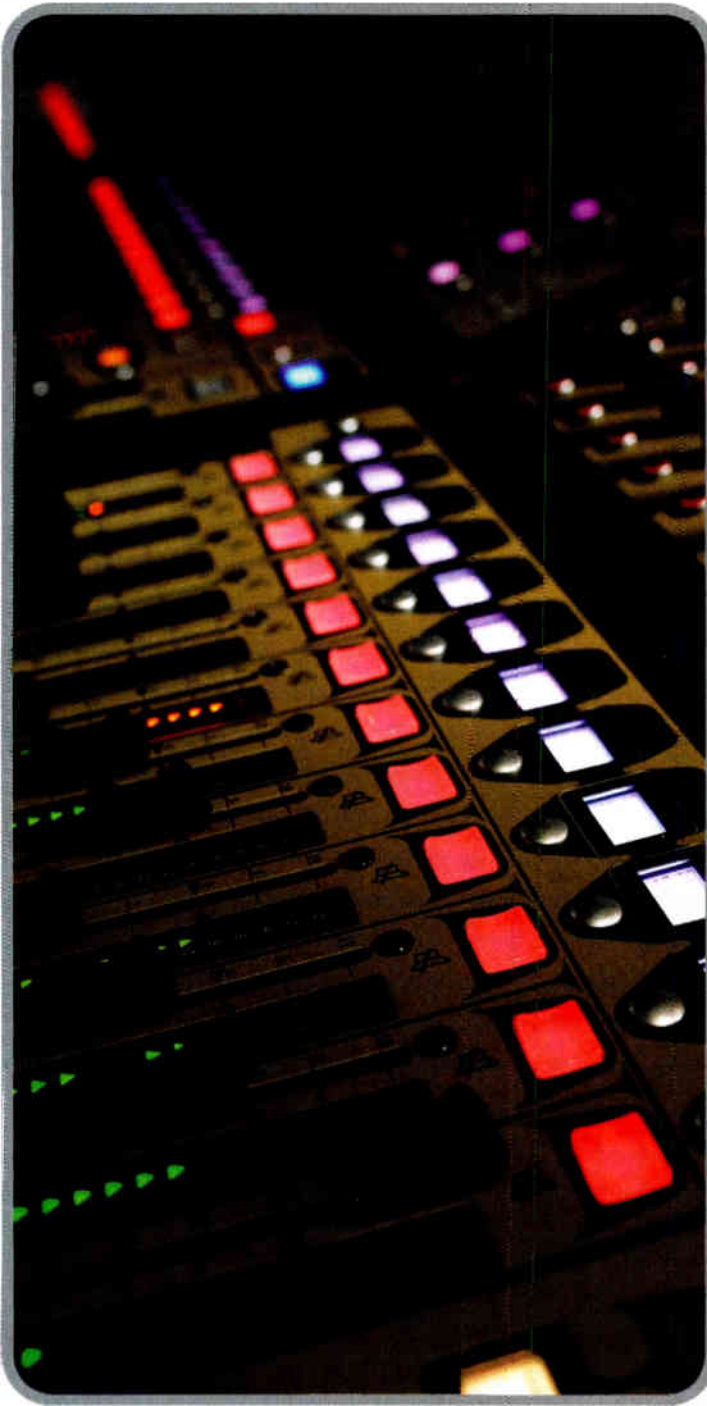




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### Summit Audio ECS-410 Everest Channel Strip

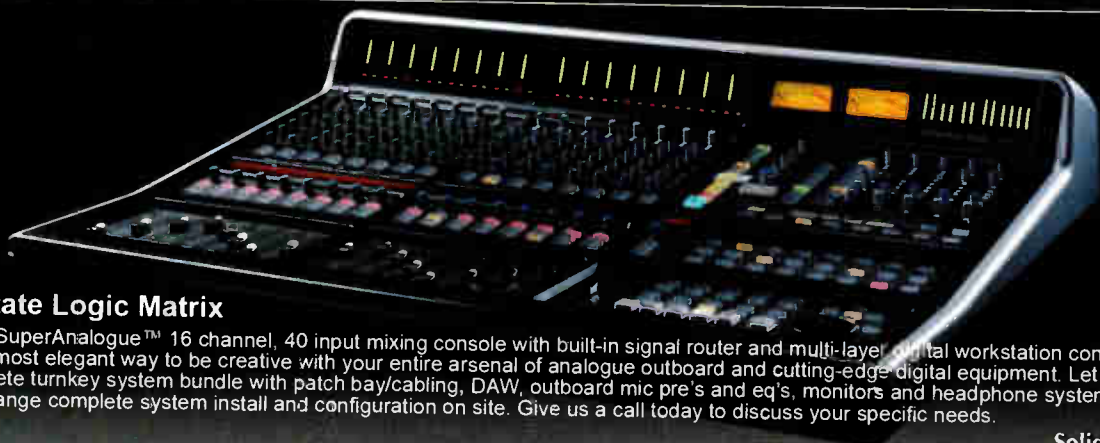
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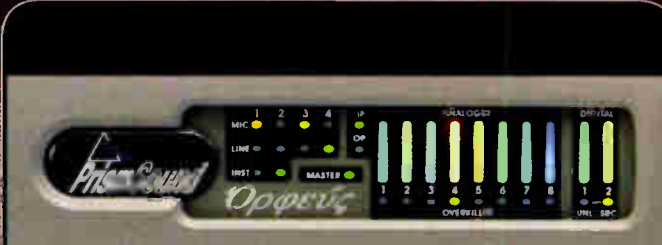
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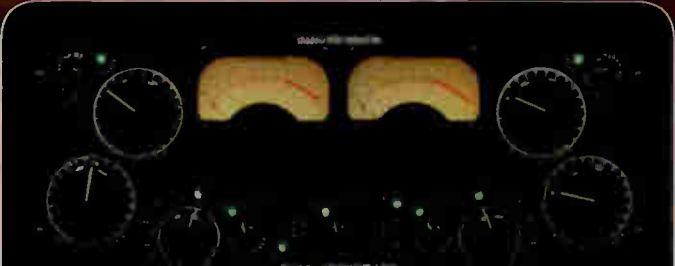
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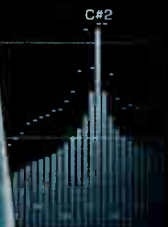
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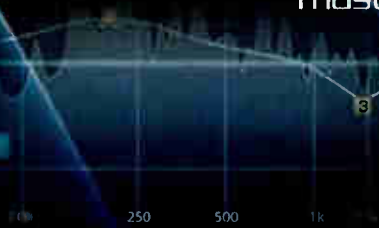
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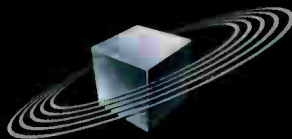


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By David John Farinella

## Raphael Saadiq

### MOTOWN MEETS MODERN IN NEW SONGS

The fans who showed up early for the John Legend show in Chicago a couple of months ago got an earful of opener Raphael Saadiq's latest offering, *The Way I See It*. According to the singer/songwriter/producer, that was by design. "We're going all-in tonight," Saadiq said a handful of hours before hitting the stage. "We're not

playing any of the old songs. We're only playing the new album."

Saadiq, who spent November and December on the road with Legend after touring Europe on his own during the summer, has a lot of material to draw from during a live set. In addition to songs from his solo releases, Saadiq can play tunes from the

seminal New Jack Swing outfit Tony! Toni! Toné! that he founded in the late '80s or from Lucy Pearl, an R&B supergroup of sorts that featured En Vogue's Dawn Robinson and Ali Shaheed Muhammad from A Tribe Called Quest.

*The Way I See It* is Saadiq's homage to the soul music that he grew up

with in Oakland, Calif. Homage, yes. Retro? No, he says. "People seem to have a problem with retro," Saadiq explains. "To me, [this record] is more real than retro. I think retro is when you're trying to do something that doesn't fit in a real place." Still, there's no mistaking the fact that Saadiq's album is a wonderful throwback to Motown's Golden Age, both in terms of the songwriting and the sonics. With its echoes of early Marvin Gaye, Smokey Robinson and others, it almost sounds like it could have been made in 1965, yet there are still nods to modernity, and Saadiq's passionate vocals are always unquestionably *him*.

Before he and engineer Chuck Brungardt set out to record the 13 tracks on this release, Saadiq admits with a laugh, he had to forget a lot of what he has learned over the years. "Oh, about 85 to 90 percent of the new techniques," he says. The duo replaced that experience by reading books like *The Complete Beatles Recording Sessions: The Official Story of the Abbey Road Years* and looking at photos from old Motown and Stax sessions.

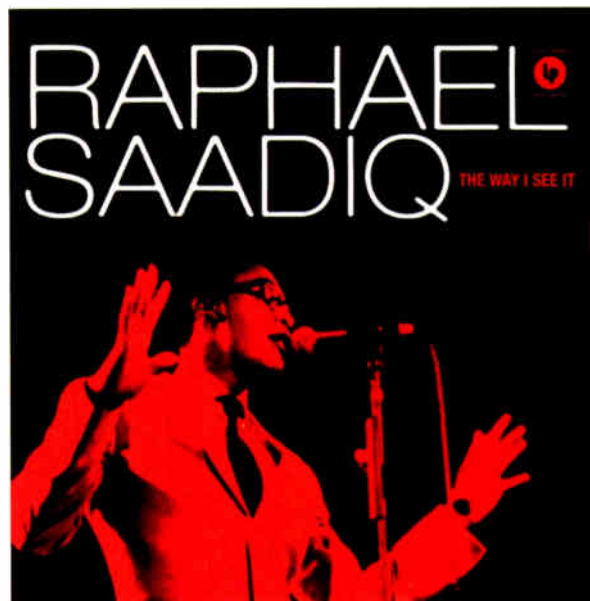
Saadiq and Brungardt got to work on this album shortly after wrapping up work on the 2007 release *Introducing Joss Stone*. One evening, the duo had a studio full of musicians in to work through some of the songs, running tape along the way to catch anything interesting. (They moved over to Pro Tools fairly quickly as some of the jam sessions were running more than an hour.) Turns out that Saadiq's demos were beating what the studio pros were coming up with, Brungardt recalls. "What Raphael had done had the right vibe and tone," he says. "The players were like, 'You probably don't want to change this.'"

So the two got to work when possible, recording between production gigs with other artists. Saadiq has lent his production skills to

artists like Joss Stone, The Roots and John Legend.

All of the sessions took place at Blakeslee Studio in L.A., which Saadiq owns. Having Brungardt in the studio was important for Saadiq. "I'm pretty open with the people that I work with," he says. "I would ask his opinion and I was challenging him every day, in a polite way. He has a good ear, and I would say, 'I'm thinking of this.' Instead of him saying, 'Okay,' he would push back with some ideas. That's how it should be when you're working on music— whoever is in the room should be in accord."

That said, Saadiq did discuss the sound that he was after early on. "We knew where we had to go and where we could go," the producer says. "We wanted to make it sound old, but at



the same time we wanted to make it our own. We knew what it was like to throw an 808 [Roland drum machine] on top of something, but that wasn't going to match what we were trying to do here."

Inspired by the books and photos they studied, Brungardt set up the studio and the microphones as simply as possible. That is not to say that they avoided modern recording devices, considering Pro Tools was the recorder of choice, but they were careful to be sparse with microphones and judicious with outboard gear. For instance, before they started to record, the two took a trip down to a used-gear store to purchase some old tape machines to get some warmth on the drum tracks. "The guy there said that we could take the pre's out of the tape machines, wire them up and use them before we went to Pro Tools," Brungardt recalls. "So we gutted some old Ampex tape machines and did that."

The philosophy for miking a '60s-era Ludwig drum kit that Saadiq purchased specifically for this album hearkened back to the three-mic technique of yesteryear. "Our mics would change, but a lot of the sound came from the overhead mic, which was either a [Neumann] 47 or a 67," Brungardt explains. "We also have an [AKG] C2 4 that's pretty nice. As far as the kick mics, we used an [AKG] D 12 or sometimes an AKG 414 so we could get the low end of the kick. On the snare we played with different things, but we kept it pretty standard because we wanted more of the crack of the snare drum rather than the overall tone."

Saadiq's bass tracks were inspired by Mo-



Engineer Chuck Brungardt at work in the B room of Raphael Saadiq's Blakeslee Studio



town legend James Jamerson. "He set the vibe on this record," Saadiq says. "I'm really into Jamerson and the [Fender] P-Bass."

To capture as much of the instrument as possible, the decision was made to go DI into an Avalon M5 with a bit of compression via the Crane Song Phoenix plug-in that was a hit during the mix dates. "When you crank the gain on the Phoenix, it makes everything so fat and wide that it allows you to get a nice bottom," Brungardt says, "but it compresses the muted sound of it, too, so it really sticks out and cuts through. We also used the [Pultec] EQP-1A to pull out the bottom."

On the guitar side of things, Brungardt went right to The Beatles' book for inspiration and used a U47 on the amps. "It really gave us warmth and character," he says. "It allowed the amp to breathe and we got the tones of the amp along with the room. For me, that really opened things up so that I could play with the live room, using different reverbs to get a sound."

The compositions on *The Way I See It* feature sonic touches that will remind many listeners of old Motown songs. The Jack Ashford-supplied tambourines, vibraphones, bells and shakers on songs like "Love That Girl," "Staying in Love" and "100 Yard Dash" are examples.

When it came time for Brungardt to mix those tunes, he relied on the FilterBank plug-in. "When we got to those tracks, there was a lot of high end," he says. "So we used FilterBank to make it a little dirtier, a little darker. We rolled off the highs just a little to give it that old-school flavor and to make sure it fit the track."

For all the care taken on the recording and mixing of the instrument tracks, the most obvious nod to old-school soul is the slightly distorted nature of Saadiq's vocal tracks. According to the singer, that was by design. "I wanted to bring an edge to my vocals," he says. "I did some of that at the end of *Instant Vintage* [Saadiq's 2002 release]. I always like when the vocals are pushed to the limit and it sounds like it's cracking just a little bit. I wanted that crackiness to be like the dirt on the record. I didn't want it to be too polished."

Using a [Shure] SM7 microphone was the first ingredient in that successful recipe, reports Brungardt. "It made his vocals real thick," he says. "Because it's a dynamic mic, the harder he hit it when he was singing, even if we had our gain right on the preamps, we got a nice little distortion."

Working dirty was a change for Brungardt. "On most albums I work on, they want it clear: with no distortion," he reports. "I was taught to make sure it was polish, polish, polish, and to make sure everything fits right, the bass hits and things are clean for the big pop vocal. On this record, I switched gears because I felt like it was all about performance and about the way it's supposed to sound, not about following all those rules."

So the distortion stayed and he was careful about EQ'ing Saadiq's vocals. "We left them where they were," he says. "Maybe we cleaned up some upper-mids, but not really

any high end. We left that kind of dark and worried about it on the mastering side of things. To get the vocals to sound older, we kept it darker and didn't use the EQ on the SSL 9000 to push the brightness. Then, when we went to mastering, we told Tom [Coyné at Sterling Sound] that we wanted it to fit where everything is today and he instantly picked up on it."

According to Saadiq, who recorded his own vocals for the most part, pushing the high end was not a concern when he sang "100 Yard Dash." "When I sang that song, my voice came out so high that I thought something was

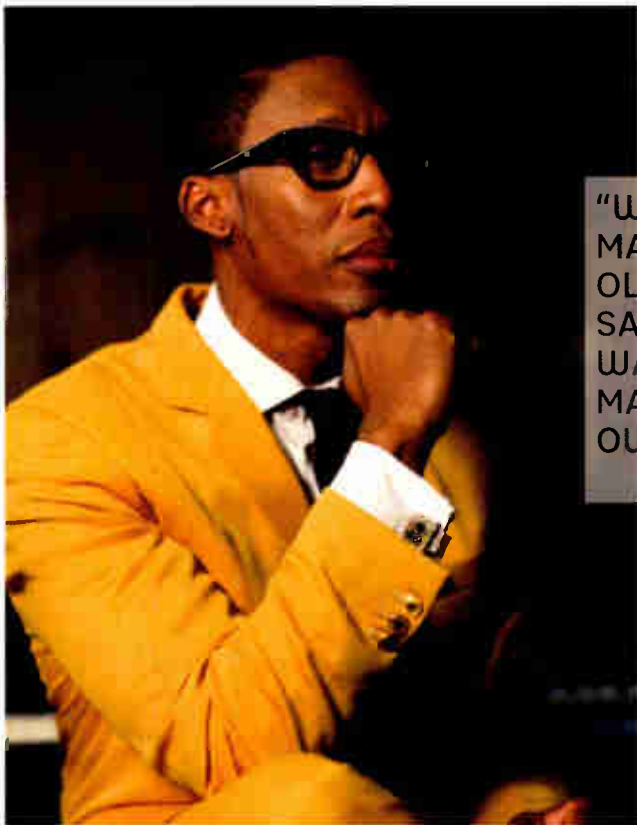
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wrong," he admits with a laugh. "I had to go get Chuck and ask him if it sounded like I was on helium or something. He said, 'No, man, that's you.' It was just the vibe of the song and we were able to leave it right there, but I thought it was a little weird at first."

**"WE WANTED TO MAKE IT SOUND OLD, BUT AT THE SAME TIME WE WANTED TO MAKE IT OUR OWN."**

—RAPHAEL SAADIQ

The vocal tracks were compressed slightly during recording, but then smashed via a Fairchild during the mixing. Brungardt also used the Tape-Head plugin during the mix to add distortion, especially during the song "Keep Marchin'." "We just need to add a little something," he says. "Tape-Head gave us that little saturation that sent it over."  
Saadiq is confident that the studying and care he took with these songs has paid off. He says that the crowds are paying close attention to what is happening, and the band is thriving as result of this music's undeniable authenticity.

"People used to take recording very seriously," he says. "They used to wear lab coats at Abbey Road. So I got serious with what I was trying to do, both mentally and physically. I feel that the way you work in the studio is the way you marinate the sound, so when people hear it they'll get the spirit and the energy of what you were doing when you were recording it. I've always felt that the more time you spend with a song, when you're playing it through the speakers and listening to it, but not critiquing it, you need to move to it and make sure it makes you feel good. That's the way the energy should get out to the people." III

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World Radio History



From Left: Paulo Braga, Milton Nascimento, Daniel Jobim and Paolo Jobim

# Milton Nascimento

## HONORING JOBIM'S BOSSA NOVA LEGACY

By Chris Walker

It was the prodigiously talented but temperamental singer Elis Regina who first brought fellow Brazilian Milton Nascimento—he of the famous velvety falsetto and impressive range—into national prominence by recording his “Canção do Sal” and later appearing with him on television in 1966. His group Clube da Esquina flourished with a string of hits through the '70s. It was in 1974, however, that he really made a name for himself internationally. He recorded *Native Dancer*, considered a jazz and proto-world music standout, with saxophonist Wayne Shorter. It led to the singer/guitarist being highly sought-after for other collaborations with the likes of Paul Simon, Cat Stevens, George Duke, Quincy Jones, Pat Metheny, Herbie Hancock and others.

All along, though, he continued working with well-known Brazilian contemporaries, including Gal Costa, Gilberto Gil and Caetano Veloso. Still, there was one particular collaboration Nascimento was never able to put together: cutting an album with Antonio Carlos (“Tom”) Jobim, one of the architects of bossa nova. Nascimento was a friend of the icon and knew his music well. “Since the very first time I heard his

songs,” Nascimento says, “Tom Jobim’s music became a part of my life and we played together many times,” but never recorded before Jobim’s death of a heart attack in 1994.

Now, Nascimento has teamed up with the Jobim Trio—Jobim’s guitarist son Paolo, pianist grandson Daniel and drummer Paulo Braga, plus bassist Rodrigo Villa—for a celebration of the Jobim legacy called *Novas Bossas*. Nascimento’s connections with these musicians go way back, too: Daniel Jobim says he remembers the singer dedicating a big concert in São Paulo to him when he was just 3. And Nascimento was in the Berimbau Trio with Braga in the '60s.

For years, too, the Jobims and Nascimento vacationed together at a secluded beach in Rio de Janeiro, where conversations about recording together would naturally arise. In January 2007, a concert at the city’s Botanical Gardens celebrating what would have been Tom Jobim’s 80th birthday became the impetus to finally make an album. “Playing together with them for the first time was really emotional,” Nascimento says. “This was a wish we had for such a long time that finally came about on the CD.”

The magical feeling of that successful

memorial concert carried over to *Novas Bossas*, which was recorded at Nascimento’s home in Rio beginning in the spring and fall of 2007. The singer/guitarist has a large basement area perfect for rehearsing, performing and tracking. “Me and the musicians from my generation miss this kind of gathering that used to happen so often—coming to each other’s homes to meet and play,” he says. “So when we got together to plan the CD, we decided to record in my house.”

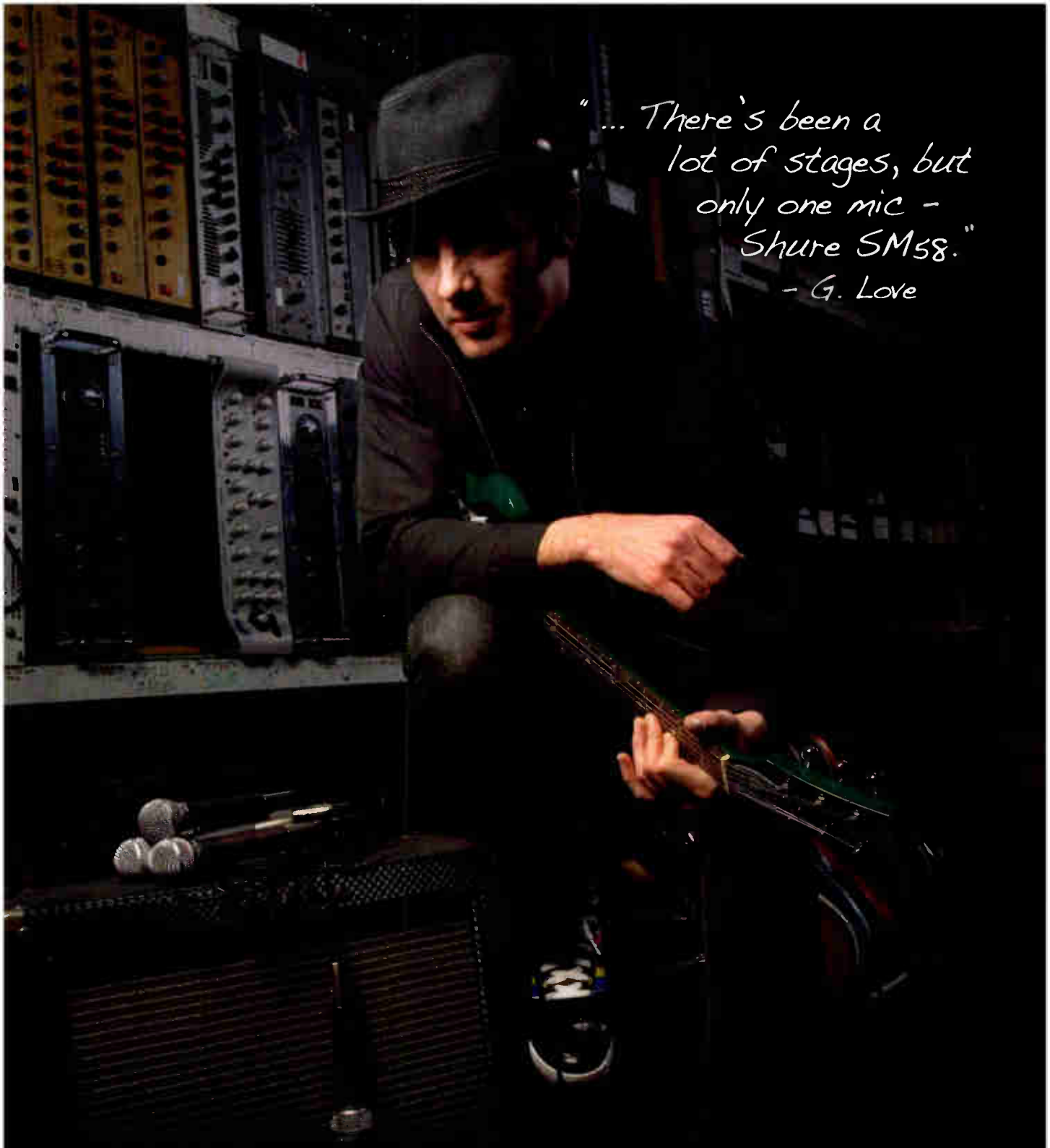
As one might expect, what was recorded were essentially live performances, with co-producer/engineer Chico Neves in charge of tracking. A former staff engineer for EMI and Warner Bros.’ Brazil operations, Neves has produced or engineered recordings for many contemporary Brazilian artists—including the Jobim Trio—yet *Novas Bossas* marked the first time he and Nascimento worked together.

For this project in Nascimento’s home, Neves used a Pro Tools Mix-plus system; Dynaudio BM15A monitors; Jensen TwinServo, Summit TPA 200B, Daking 52270 and Avalon VT 737 mic preamps; and Empirical Labs Distressor and Summit TPA 100A compressors. Mics included a Neumann U47 (piano/vocals), Sennheiser 504 (toms), Beyer Opus G5 (kick), Neumann KU100 Dummy Head (overall drums) and an AKG 414 (guitar).

“They were all so happy and I would even record while they were working out arrangements,” Neves recalls. “Then they would say, ‘Let’s record it,’ and I would say, ‘It’s already recorded!’” With everyone recording in one room, leakage was an issue, especially with the vocals, so most of Nascimento’s leads were re-recorded separately. Nascimento also layered vocals on several songs—he jokingly calls the extra voicings his “cousins.”

Mixing was UK engineer Ben Findlay, former chief engineer at Real World Studios, who had come to Brazil to work on a track with Nascimento for another project when Neves suggested that he mix one with the Jobim Trio, as well. The mix for *Novas Bossas* began two weeks before Christmas 2007 at Neves’ Rio studio “We basically mixed inside the box,” Findlay says. “Because of the nature of the instrumentation, I just used a very simple EQ and compression setup, which was the Bomb Factory LA-2A, Fairchild Emulator and the Pultec [plug-ins]. I kind of thought by setting myself some limitations that were related to the time that the music was originally recorded, we might be able to capture some of the mood of those earlier records, as well.” III





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# The Hold Steady

ROCKING HARD, STAYING 'POSITIVE'

By Barbara Schultz

Five-piece rock 'n' roll band the Hold Steady have probably been compared to Bruce Springsteen more often than they'd like, but the reason is clear: Fronted by songwriter/vocalist Craig Finn, they create a huge, complex full-band sound—complete with multiple keyboards and horns, in addition to rocking guitars, bass and drums—to back Finn's cinematic story-songs.

"I hate using this comparison," apologizes Hold Steady producer/engineer John Agnello, "but I grew up following the stories Springsteen told, and they meant something to me, and I think that's the similarity. Craig's story in 'One for the Cutters' is fascinating to me. That line—'Her father's lawyers do most of the talking'—is so intense. You just have to follow the story."

Agnello has been a fan of the band since a friend suggested he catch their set at South by Southwest in 2004, the year the Hold Steady's first album, *Almost Killed Me*, was released. Agnello and the band became sort of a mutual admiration society, as the bandmembers appreciated Agnello's work with Dinosaur Jr., Patti Smith, Drive By Truckers and others. Talks about a collaboration finally bore fruit when Agnello and the band made *Boys and Girls in America* (2006). That album reached Number 124 on the *Billboard* 200 album chart, and it was at or near the top of numerous critics' lists.

"It went really well, but we were also still feeling each other out, working through any quirky struggles when we made *Boys and Girls in America*," Agnello says. "That made working on

*Stay Positive* an even more fruitful experience."

Before recording *Stay Positive*, Agnello and the band spent more than a month on pre-production in the musicians' rehearsal space in the Williamsburg neighborhood of Brooklyn, N.Y. Then they moved into Water Music, a residential studio in Hoboken, N.J., with a large live room, a history of great rock recordings and the analog gear Agnello prefers. They recorded to Studer 24-track, using the studio's Neve 8088 board.

"Before tracking," Agnello explains, "we had to talk about how to make *Stay Positive* a better and different record [from *Boys and Girls in America*]. There was a definite focus on increasing the scope of sounds. For example, we used harpsichord on one song. We did more extreme horn arrangements and more string arrangements, and we invited guests to play on different songs so they would have a different flavor."

During the sessions at Water Music, Agnello and tracking engineer Scott Norton worked together, getting sounds that would realize the band's vision of taking *Boys and Girls* to the next sonic level. Basic tracks included guitar, bass, drums and the main keyboard on the track. Then other keyboards would be tracked, as well as keeper vocals if needed, guitar solos, etc.

"Tracking is pretty severe with these guys," Agnello says. "Franz [Nicolay] plays piano or organ or Wurlitzer, so we had a bank of keyboards set up so that he can go from song to song without resetting too much. Tad [Kubler] has a huge guitar rig with different amps, so he has his own

room, and with Craig we tried to do something that I specifically had in mind to do on this record—to try to get him to sing more live on basic tracks and get some keeper vocals live."

Norton, who owns his own Headgear Studio in Brooklyn, has worked with Agnello frequently during the past several years, and says that the producer's sessions always stand out for him because of the drum sounds Agnello gets. "The drums and toms are unbelievable," Norton says. "He's got a good balance between tight and distant miking, and he'll use both to make one solid sound. This is a matter of personal preference, and it depends on the artist and the song, but I love drums that sound like one instrument. John accomplishes that."

"We kept things pretty consistent as far as mics on the drums," Agnello recalls. "But we changed snare drums for almost every song. We also changed guitars every song. We went back and forth between the keyboard rigs."

One mic choice Agnello notes in particular is the pair of B&K 401s he uses on Nicolay's piano. "They have a really great low end, but they also have great attack, and they make the piano just shine and shimmer and cut through the mix."

For the mix, Agnello took the recordings to Steve Rosenthal's Magic Shop in Manhattan; Agnello appreciates the studio's comfortable vibe, its unique broadcast-model Neve board and the help of assistant engineer Ted Young.

Agnello says the mixing process was largely about "taking things out that didn't fit. For example, on the song 'Both Crosses,' J Mascis from Dinosaur Jr. put banjo on from top to bottom, as I'd asked him to do, but it ended up making sense in just a few spots. Space is important; there's a sonic threshold where, if you go over that line, things do not sound bigger anymore."

*Stay Positive* does sound "bigger" than *Boys and Girls*, and listeners apparently think it also sounds better; peaking at Number 30, it is the band's highest-charting album to date.

"I'm happy about that because I love them," Agnello says. "There's nothing better than working with guys you genuinely like on records you would have bought as a kid." III



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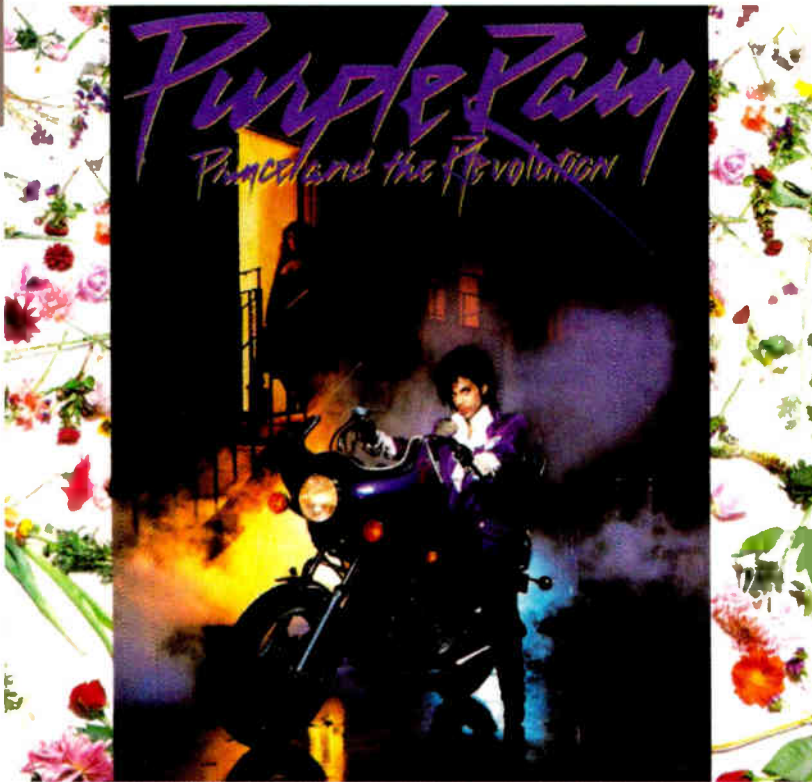
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## CLASSIC TRACKS



# Prince and the Revolution

"PURPLE RAIN"

By Dan Daley

This year marks the 25th anniversary of the track that is, perhaps, most emblematic of the entire Minneapolis music scene. "Purple Rain" was destined to be a Number One single and would pull its eponymously named soundtrack LP to the same position on the album charts when it was released on June 25, 1984. The film of the same name still lands in most Top Ten lists of music-themed movies, and it graphically fills in the details of family strife and artistic angst painted by the song's sparse lyrics. But as emotionally wrenching as "Purple Rain" is, in all of its incarnations, the track was the nose cone of a very precisely guided missile assembled by Prince—who had already had chart successes with hit singles like "1999," "Little Red Corvette" and "Delirious." It was very deliberately intended to take him to true superstardom, and it worked. The combination of a slate of brand-new songs that meshed R&B, soul, pop and hard rock with a reinvigorated band, The Revolution—featuring Lisa Coleman and Wendy Melvoin (who would

go on to their own music and scoring successes as Wendy and Lisa, aka Girl Bros.—gave Prince the creative and economic momentum to propel him for the next quarter-century.

Prince's rocket would be fired from an odd launching pad. The First Avenue club in downtown Minneapolis had been the locus of the city's bubbling music scene, a career crucible for acts including The Replacements, Soul Asylum and Hüsker Dü, as well as Prince, who headlined there, riding on early hits like "Dirty Mind." (Minneapolis was a fairly progressive place, but most local black artists, including Jimmy Jam and Terry Lewis, preferred a venue called the Nacirema Club—"American" spelled backward.) Instead of taking the new songs into the studio, Prince instead opted to do them as a live recording. The premise was a benefit for the Minneapolis Dance Company, which assured a relatively weak turnout and a manageably sized audience that would provide the intimacy and immediacy that would electrify the recordings without go-

ing over the brink to mark it as a live concert recording. The cheers, clapping and whistles are all present on the extended coda of the album version, which runs close to nine minutes long. Another argument for the live recording is that several of these tracks would be featured as live performances in the film *Purple Rain*, taking place in the same club.

The performance was captured by David Z, who had pursued a career as a songwriter and recording artist in Los Angeles, but had returned to his native Minneapolis as an engineer and producer. He began working with Prince in the group Grand Central in 1978, and in 1979 the four demo sides he co-produced and engineered garnered Prince a deal with Warner Bros. Records. Z continued working with the artist, engineering on his first and third albums, the former with Los Angeles-based engineer Tommy Vicari, whom Z had met when Vicari engineered his publishing demos at A&M Studios. "Warners wanted an engineer with credits to do the first album," says Z, who'd have his own hit-record credit a few months later when his production of Lipps Inc.'s "Funkytown" climbed the pop charts.

Z's connection to Prince is deeper than technical and professional—his older brother, Cliff Rifkin, was the regional promotion executive for Warners in Minneapolis and had facilitated Prince's signing to the label, and his younger brother, Bobby Z, had become Prince's drummer in the Revolution. So Z wasn't surprised when he was asked to engineer the tracking of a live recording, set for August 3, 1983, even though he wasn't completely sure what its outcome was supposed to be. "With Prince, you never knew," he says. "I thought we were recording a concert, but I wasn't sure if it was going to be a record, too. I knew they were working on the movie, as well. You just had to go in prepared to record whatever it was going to be as well as you could."

Prince's road manager, Alan Leeds, asked for and got what he regarded as the best remote truck available: Record Plant's Black Truck, crewed at the time by Dave Hewitt and Kooster McAllister—teammates who would go on to become leading competitors in the remote recording business. The truck was well-equipped for its time, with a custom 44x24 console recording to a pair of Ampex 1200 2-inch tape decks. The truck's outboard included four UREI 1176 compressor/limiters, two UREI LA-3A compressors and two dbx 160 compressors. Monitoring was

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by Westlake speakers with Bryston 4B amplifiers. "At the time, you could not do better than that, between that equipment and Kooster and Dave Hewitt working with you," says Z.

Inside the club, the stage was set as it would be for a live show—vocal microphones were Shure dynamic 57s, which were also used on Prince and Wendy Melvoin's guitar amps. Two pairs of AKG 451 condenser microphones were employed for audience and ambience tracks, one pair taped underneath left and right balconies near the stage and the other pair under a loft in the rear of the room. The drums were similarly miked in a conventional manner, with an AKG D-12 inside the kick drum, 57s on the top and bottom of the snare, Sennheiser 421 dynamic cardioid microphones on the rack toms, a Neumann KM84 condenser on the hi-hat and a pair of 451s as overheads. But there was also a new wrinkle: A pair of LinnDrum LM1 drum machines were part of the percussion package; one would run continuous loops during songs while the other was to be triggered by Bobby Z's snare drum via a small condenser microphone mounted inside the drum.

"Prince was very innovative—he wanted the Linn's snare sounds but wanted the feel of a drummer," says Bobby Z. "You could still get a lot of emotion and human variation into the playing, but have access to a wider range of sounds. We look at that as normal now, but in 1983 that was pretty cutting-edge."

"Purple Rain" is first and foremost an arena-rock ballad, and Bobby Z, used to playing an array of percussion styles around Prince's increasingly eclectic songbook, says laying into the track as a rock song came naturally. "Prince wasn't telling me what to play," he says. "You knew right off what the song needed."

**In the Truck**

As showtime neared, David Z sat in the truck, checking signal path and getting sounds as the band ran through its soundcheck; Hewitt would help monitor level while McAllister seconded as needed. Z says he put limiting and compression in the obvious places—LA-3As mainly on drums and vocals that would grow louder as the energy of the performance built. "I dialed in a little bit of effects and EQ, but what was going to tape was pretty much what

they were hearing inside the club," he says, referencing what he had learned doing several King Biscuit Flour Hour concert broadcasts. The band's own monitoring would be on the monitor mix onstage. But the focus was on the recording levels. "We had three sets of eyes on the meters," says Z, including tape op Paul Prestopino in the truck. "It was getting louder as the show went on, and if this was going to be a record, distortion was something we couldn't go back and fix."

"Purple Rain" was the encore of the set, and possibly its most intense number. Some distortion was inevitable, as was the tape noise audible in the quiet passages in between peaks—something Z explains as a result of precautionary lower input levels.

When the show concluded, Z spot-checked the 2-inch reels for drop-outs and other possible problems. The only one he thought might be an issue was the weak bass sound due to the use of a wireless transmitter from the bass to the amp. "Wireless stage technology for musical instruments just wasn't there yet," he says.

David Z's role in recording "Purple Rain" had a coda as unique as the one on the song.

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"Prince drove up to the truck after the show and asked how it sounded," he recalls. "I was about to answer when a girl wearing a raincoat and nothing else stepped off the curb and flashed Prince. Then he drove away. That was pretty much our post-recording conversation. It was like a Fellini movie."

### On to L.A.

The tapes were sent to Studio 3 at Sunset Sound in L.A. with David Leonard, with whom Prince had worked at the studio on previous records, including "1999" and "Little Red Corvette." (This was prior to the establishment of Paisley Park, Prince's Minneapolis studio, which opened in 1985.) Leonard recalls that there were several overdubs added to "Purple Rain," as there were to other tracks from the recording, although he is less certain about exactly what was replaced or augmented.

"The process with Prince was that you would wait for him to come in and set him up to do whatever he wanted to that day," Leonard explains. "He does almost everything himself; he even records his own vocals using a U47 on a boom stand over the console. If he needed you to do a punch or a patch, he'd ask. Otherwise, he'd do his own punching. He was hands-on for everything; he was driving the bus."

This extended to playing any of the replaced instrument parts. Leonard would have Prince's favored collection of outboard gear available. These included the API 440 EQs built into the custom 1977 40-input/8-bus API DeMideo console in Studio 3, Universal Audio LA-2A leveling amplifier and UREI 1176 compressor/limiters, as well as the EMT digital 250 reverb and Lexicon Delta T digital delays, both of which are used heavily on "Purple Rain," along with the studio's Number 2 live chamber. The delay return on the vocal is also sent to the same reverb, which greatly thickened the sound. But Leonard believes that most, if not all, of the lead vocal is from the club recording. "He is a super-human vocalist," he says of Prince, renowned for his four-octave range. "And there is a lot of the ambience tracks mixed in there, too."

A live recording has its artifacts and Leonard found ways around them. "The [drum] overheads have a lot of bleed in them so we needed to gate that stuff out," he says. "We also gated the live snare to make it cleaner and bit snappier." The reverse sound effect just before the first verse of the song was likely a flipped snare or cymbal, Leonard reckons, though he says Prince would often do his own onomatopoeia versions of those effects. "There were

always lots of edits," he says, noting that he would also keep three half-inch 2-track decks at the ready for crossfades between songs or if Prince decided to overdub atop a mixed track.

The final touch on "Purple Rain" was the string section, also recorded at Sunset Sound's Studio 3, from an arrangement by Lisa Coleman's brother David. A quartet was recorded by Leonard using a pair of Telefunken 251 microphones for the violins on a Neumann U47 on the cello. It might have been the only relatively conventional step in the entire process.

*Note: Prince's proclivity for personally handling virtually every aspect of his recordings seems to foster*

*a kind of Men in Black-type memory-erasure effect. Neither David Z nor David Leonard recalls the other being in the truck during the recording of "Purple Rain," and neither Kooster McAllister nor Dave Hewitt could state without reservation which of the two Davids was at the truck's console that night. It could also be due to the curiously large number of people named David involved with this and other Prince recordings. The narrative above is based on David Z's recollections of the tracking and David Leonard's memory of the overdub sessions. Also, the Sunset Sound Web page lists Susan Rogers and Peggy (Mac) McCreary as engineers on the work done there on Purple Rain. III*

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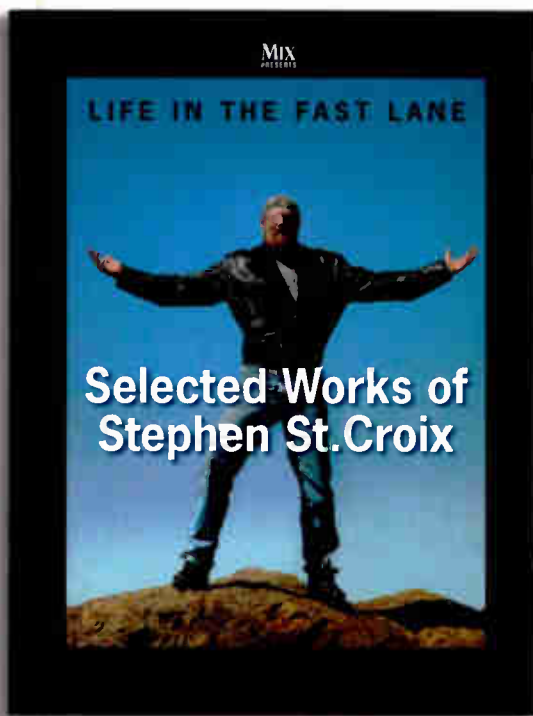


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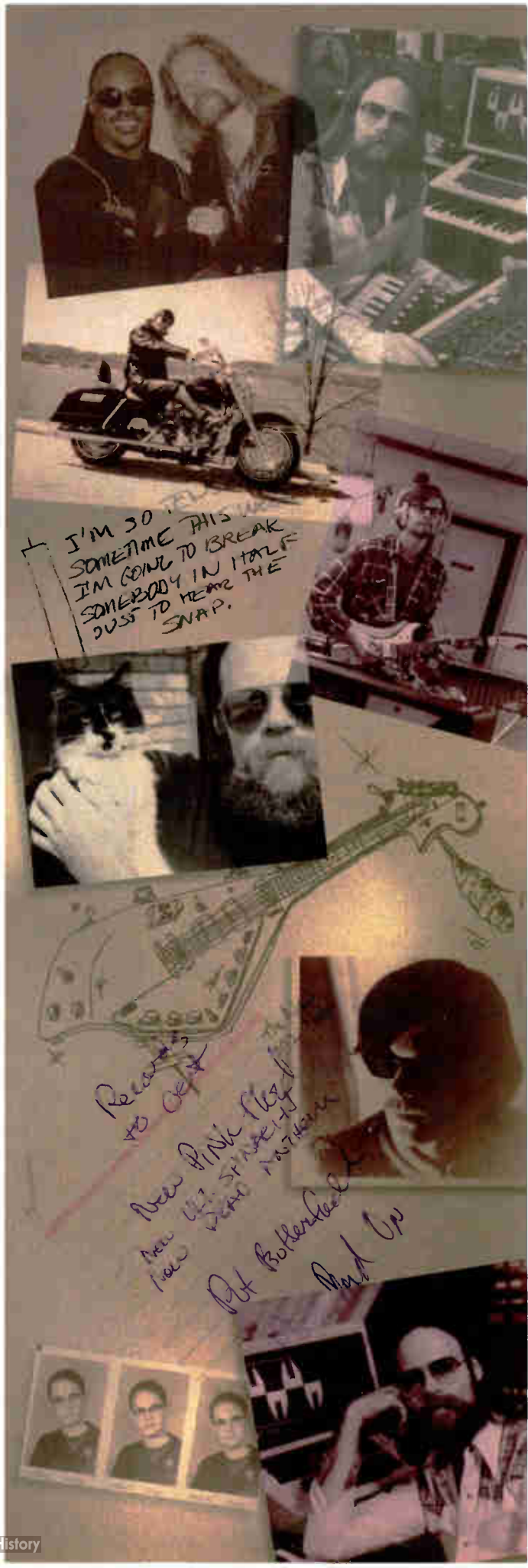
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PHOTOS: PAULE SAVIANO

AC/DC is, from left, Angus Young, Phil Rudd, Brian Johnson and Cliff Williams. Not pictured: Malcolm Young.



By Gaby Alter

## AC/DC

### ROCK'S FINEST PUMP UP THE VOLUME

"AC/DC is the best rock band there is," enthuses front-of-house engineer Paul "Pab" Boothroyd. That means a lot coming from a man who's been Paul McCartney's live engineer for the past two decades, and whose list of clients includes Faith Hill and Paul Simon. Boothroyd has handled FOH duties

for AC/DC since the band's 1996 Ball-breaker Tour, and he's back at the helm for their latest, the Black Ice World Tour, which promotes *Black Ice*, the group's first album in eight years.

While there are a few moments of spectacle in the band's new show—including a giant train that appears to

smash onto the stage, and some fireballs for their anthem "TNT"—the set showcases the band doing what they do best: playing raunchy, blues-based rock. "[They're] really like a pub band loud," Boothroyd says. "That's where they stem from, that's where their roots are, and that's how they like to

be. Nothing fancy, no celebrity status, just go out and rock to the fans.”

## An Analog World

Complementing their classic sound, Boothroyd mixes on a Clair Global-provided Midas Pro4 vintage analog console that was originally built for Dire Straits in the mid-'80s. “It’s a straight-forward arena tour,” Boothroyd explains. “I’ve got my normal real-estate allocation of 12x12 or 16x12, so I can have a good analog desk with some racks of gear and look at [my mix as] old school because they are an old-school band.”

However, it’s not all analog at FOH. While mixing on the Pro4, Boothroyd simultaneously runs the band’s inputs through a Midas Pro-6 digital console to a multitrack recorder for archival purposes; the Midas can also serve as a backup board. “Taking out a vintage console like the Pro4, it did give me a few little worries that something could go wrong,” Boothroyd says. “The Midas Pro6 has got a great sound; comparing it to the Pro4, they are obviously different, but noticeably the 96k resolution and the treble frequencies are very sweet indeed.”

For outboard gear, Boothroyd uses Drawmer DS201 noise gates on the drums and a pair of dbx 160 Blues compressors on bass and guitars, and for vocal peaks: “They’re just a fantastic, studio-quality transparent compressor that I’ve used on all sorts of things.” He also uses Massenburg EML 8200 EQs. “I just wanted to have a couple of settable, notchable EQs when Brian [Johnson, lead singer] walks out right into the middle of the audience [on a runway]. So you have to just be able to notch out a few of those ring-y frequencies.”

Monitor engineer Mike Adams has Johnson and drummer Phil Rudd on Ultimate UE-11 in-ears, which were decided on “because they have the horsepower it takes,” Adams says. “The decision was made that [they] would probably be the only product that would get

over that kind of volume.”

In addition, the band has Clair Firehouse F-15 wedges, with EVX and XB’s doing side-fills and zone-fills. “With ears and everything, I’ve got a total of 36 zones,” Adams says. “Everything is zoned out across the stage so that it can be tailored for any position of anybody moving about the stage with no problem.” Adams also mixes on an analog Midas desk, a Heritage 4000, to complement the group’s old-school sound. His outboard gear comprises TC Electronic 1128 EQs and DDLs, Avalon 737 preamp/compressors, Eventide H3000s, Yamaha PCM 91 reverbs and Empirical Labs Distressors.

## Miking Challenges

One of Boothroyd’s hurdles is getting Johnson’s vocals above the incredible volume of the band. “Brian isn’t a very strong singer,” Boothroyd says. “Even a very strong vocalist would struggle with sitting on top of the level of the backline, which is measured at 120 dBs at [bassist] Cliff [William’s] backing vocal position. But Brian does have a unique voice and you can sit it in the mix; you just have to be careful about how you place things.

“I’ve got a Summit TLA-100 tube on the vocal, which just helps me to punch his vocal forward more in the mix. The makeup gain on it is great: You give it a little tweak and you can hear it come forward in the mix, and the compression quality on it is very, very smooth.”

Johnson sings into a Shure SM58A, a microphone Boothroyd uses with many artists. “It’s robust, and it does everything I need it to do. It’s also good for the monitor engineer,” he explains. The backing vocals get 57As, “because we felt that the proximity effect of that particular mic was better [than the 58As].”

The drums are miked with Audix microphones: a D-6 on the kick (along with a Shure SM91), D-4s for the toms and two I-5s on snare top and bottom. “I just started to use [Audix mics] mainly on McCartney shows, and I felt like I immediately got a really great result without having to fiddle too much,” Boothroyd comments. There are also seven Audix MicroDs on the cymbals, which Boothroyd says help him to contain the sound. “It’s so loud up there that you could never put a pair of overheads up to get some kind of cymbal splash going on,” he explains. “And it’s a wide spread of cymbals so I mike each one individually, just to get that crash sound sitting in the mix. This show isn’t about fidelity or subtleness; it’s just about getting things placed in the mix very loud, very contained, hopefully controlled and that’s it.



Turn it up and duck.”

As for guitar amps, it’s “Marshall, Marshall, Marshall, Marshall, 11, 11, 11, 11, loud, loud, lots of them,” Boothroyd says with a laugh. “There are about 20 [amp] cabinets up there. They are all flat-out—there’s no gimmick here, they’re there to spread guitar across the stage.” The cabinets have 100-watt Marshall heads, which have been tweaked by the tour’s amp technician to run hotter than a standard amp. “This is okay—it just means you go through a lot of tubes, but it gives it that sound,” Boothroyd says. “I put one mic on one cabinet, an Audio-Technica 4047. I’ve tried various microphones, much to Malcolm [Young, rhythm guitarist] and Angus’ [Young, lead guitarist] disgust because they’d be quite happy with just an SM57 on there. But I wanted to capture some other qualities, so I went for a slightly larger-diaphragm mic, and I found that the only one I really liked was the A-T 4047.”

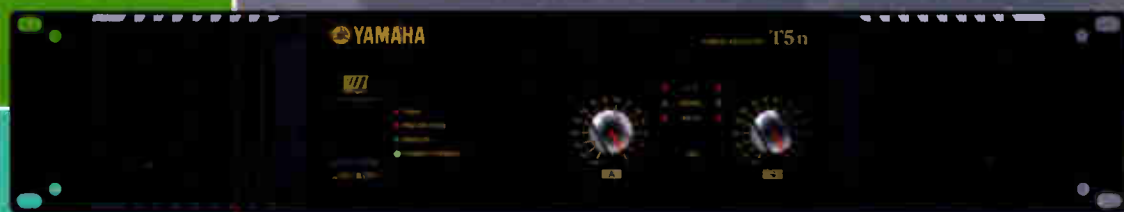
A Clair EV X-Line line array system bolsters the heavy rock sound, with a hang eight wide by six deep, 10 i4s per side and 16 subs per side. “There’s plenty of these ‘pencil’ P.A.s out there that sound great, no problem there,” Boothroyd says. “But this show is very theatrical, as well. The big P.A. is a great look for the band because the show is about sound—a lot of bright lights, a lot of loud sound, a lot of hot pyro. And so they were happy to start off where we left off from Stiff Upper Lip. [The band used that same P.A. setup for that tour.] The backline is exactly the same setup, down to the drum kit; even the rear sidefills are exactly identical from how we left off eight years ago. The only thing we’re doing different now is using the Clair i4 side hangs to cover rear and sides of the venue. It’s that with some subs underneath the stage—very straightforward.”

“The only challenge is to make sure that things stay in some sort of control,” Adams adds. “Sonically, the band is amazing—it’s not like that’s a problem—it’s just that the sheer volume can create a lot of saturation. And I think that Pab and I work well with the synergy of it all.” III

Gaby Alter is a New York City-based writer.



Monitor engineer Mike Adams (left) and FOH engineer Paul Boothroyd—mixers about to rock



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# Goldfrapp

LUSH SONICS SURROUND POWERFUL VOCALS

PHOTO: SAM FENTON

By David Weiss

Long before the night's first note rings out, there's a feeling of being wonderfully overwhelmed at Radio City Music Hall. But while the audience and band are amped on this rainy evening in New York City, the group's front-of-house and monitor engineers are cool and collected. For FOH engineer Ben Findlay, who splits his time as evenly as possible between recording and the road, this tour is a welcome opportunity to spread the word about the band's sonically rich fourth disc, *The Seventh Tree*. "It has amazing soundscapes and thought-provoking lyrics; really, I think it's a fabulous record," he says. "When Allison [Goldfrapp] steps on the stage, you can't take your eyes off of her. It's not a straightforward show."



Monitor mixer Seamus Fenton (left) and FOH engineer Ben Findlay

Goldfrapp is a duo in the studio, but co-founder/keyboardist Will Gregory no longer tours. Instead, Findlay is using his Digidesign VENUE D-Show Profile to mix a seven-piece band that includes drums, bass, guitar, keyboards, violin and harp. "There are 48 different

outputs that we're keeping track of," says Findlay. "When Digidesign first showed me this Profile for Peter Gabriel's *Growing Up Live* tour, they said, 'You'll be able to run third-party plug-ins,' and that's a unique selling point because I can use the Sony Oxford plug-ins. The Inflator fits great to perk up the mix a bit: I'll put it across the main outputs, but I wouldn't have it across the whole show because it gets to be wearing."

"I don't mix the same way every night because sometimes it's nice to hear songs in a slightly different way," Findlay continues. "I start from a pre-programmed point and then tweak it according to the room and how everyone's playing. I'm not into that overly harsh thing, but you have to be quite careful of how you position bass: If you don't have a very aggressive mid-range and you've got too much bass going on, it turns to shit, for want of a better word. I'm trying to keep the spectral balance at that point where you want it to be just a little louder."

Although Findlay has enjoyed touring Europe with an L-Acoustics V-DOSC system, he's quite happy to be working with Radio City's house P.A. tonight: a JBL VerTec system in an L/C/R hang with eight subs per side. "I'll play a couple of tracks I know through the P.A., with an Oxford EQ strapped across the P.A. and my sub outputs," he says of his nightly tuning ritual. "I'll tweak the P.A., discuss it with the system tech, and more often than not, they'll take off the Q on their crossover and I'll flatten mine."

Monitors are under the firm guidance of

industry veteran Seamus Fenton, who pilots a Yamaha PM1D mixing a Sennheiser Evolution G2 in-ear system. "In a way, this gig needs two monitoring engineers: someone to do Allison and then someone to do everyone else!" he says with a laugh. "I have to constantly mix her in-ears as she goes. The movements you do are very small, very intricate, but you have to do them. There's an awful lot of backing vocals on the tracks, for example, which have to be balanced for her."

To capture Ruth Wall's artistic harp playing, Findlay places DPA 4088 miniature cardioid mics on the instrument. "You can't get inside the resonator box; there's a hole like *that*," he explains, indicating the size. "We use the DPA cardioid pin mic pointing at the hole, contact mics and contact pickups. Once we found the place to put the mics, it's become one of those instruments that you don't have to worry about. There is a slight issue with spillage onto the mics, but the signal that you get from the contact pickups makes the sound pretty representative."

Miking Goldfrapp's gorgeous voice—a musical mix of majestic grace, strength and whisper—is a wired Shure SM57 Beta. "It's got great rejection, which is important because although we are using in-ear monitoring, it can still get loud onstage and Allison is a very delicate singer," says Findlay. "And actually, I quite like the sound of it." III

David Weiss is Mix's New York editor.



PHOTOS: JOHN EDWINSTON

By Candice Horgan

Indie rock band Calexico (Joey Burns, vocal/guitar; percussionist John Convertino; guitarist Paul Niehaus; keyboardist Jacob Valenzuela, multi-instrumentalist Martin Wenk; and bassist Volker Zander) blend together musical genres from Mexican and Latin music to rock, blues and folk, creating a very danceable and unique sound. It is up to front-of-house engineer Frank Marchand to make sure that the live show reflects the energy that the band exudes onstage.

This is Marchand's first tour with Calexico, and he is relying on house-provided P.A., console and monitor engineer. For the board, he's mostly seen Midas models and occasionally a Digidesign. At the Gothic Theater in Denver (where *Mix* caught up with the act), Marchand mixed on a 25-year-old Soundcraft board that was the monitor desk for the Allman Brothers.

"Whatever they throw me I'll run with, as long as it works," says Marchand. "Some venues, they'll put you in front of gear that they really haven't had a chance to fix, and that's the only time I really get leery of what's going on."

Marchand prefers to mix in mono because he feels it is important for the audience to hear everything they see onstage. "This is from years ago and seeing a Grateful Dead show," he says. "I sat facing the left-hand side of the stage and Bruce Hornsby was on the right, and it was panned so hard I did not hear one note of him all night. As a paying customer, you want to hear what you see, and I'm really conscious of that."

Generally, Marchand builds his mix around

Burns and the room. The band has been playing 1,000-seat theaters on this tour, and the rooms can sometimes present challenges. "Managing bottom end is really important," says Marchand. "It depends on what the room dictates, because a lot of these clubs and theaters have the subs turned up so ungodly loud because they have to address so many different types of music. I'm always turning that stuff way down to get a lot of clarity and to make it not too boomy."

"These guys are really sensitive to how [Burns'] singing and playing are represented in the acoustic environment of the venue. When we come in for soundcheck, I'm careful to make sure he's taken care of so he feels comfortable onstage and then I work around that. Sometimes I'll be turning the subwoofers down, sometimes I'll be scooping a lot of the mid-frequencies out of the room to give it some clarity. I have an analyzer I bring with me everywhere. I do not use any compression or gating. Because of that dynamic range, I would rather move faders than have processing take care of that."

Marchand hasn't been using many effects on this tour except for a couple of reverbs and a band-supplied Roland Space Echo to create a dub feel on some songs. However, he does use a lot of highpass filters: "When I have 25 mics wide open onstage, I'm trying to get rid of stage rumble from the ground and subwoofers to keep the mix clear," says Marchand. "These guys play so many different instruments, everything needs to have its place, so I get rid of unneces-



On his first tour with Calexico, FOH engineer Frank Marchand is adapting to house systems.

sary frequencies to keep the mix clear."

About the only gear Marchand provides are mics to ensure some consistency. "If I could put a hypercardioid-type mic on everything, I would do it just to get signal-to-source separation from what you're trying to put in the P.A. With live sound, the reason I use a lot of dynamic mics is because they're much more directional and can handle the volume easier. The stage is full of monitor interference and bleed from the P.A. and ambience; it never goes away. Most of the time I'll use Shure mics wherever I can; they're not overly bright. The guys are singing through Shure SM58s and Beta 58s. The only mic I really use all the time is the Heil PR 40 on kick drum. This microphone is really even and it's not boomy-sounding or too pointed or sharp, and all I need to do is a little scooping and it generally represents what's put in front of it."

For the seven monitor mixes onstage, "I flip stuff in and out of polarity," he says, "but generally once the band is dialed in, we're in good shape. Sometimes I'll ask the monitor engineer to get rid of a few things that are competing with what's going on out front." III

Candace Horgan is a Denver-based writer.





# Club Nokia Rounds out L.A. Live

## AEG VENUE BOOSTS DOWNTOWN SCENE

By Bud Scoppa

Downtown L.A. was hopping this past November 9, 2008, as the 2,300-capacity Club Nokia—the latest jewel in the crown of AEG's \$2.5 billion L.A. Live sports and entertainment complex—celebrated its grand opening with a sold-out show by Beck and Rilo Kiley's Jenny Lewis. Simultaneously, 20,000 hoops fans packed the Staples Center across the street as the Lakers walloped the Houston Rockets, while a capacity crowd of 7,100 gathered inside the Nokia Theatre for a concert by The Who.

"If you grew up here, you probably wouldn't recognize it, but there you go," said Beck during his set, obviously overwhelmed by the transformation of this formerly drab section of downtown into a glittering wonderland that is now one of L.A.'s prime attractions.

The tri-level, dramatically lighted, 59,000-square-foot Club Nokia is topped off by a steeply pitched balcony that seats 900 and hangs dramatically over the tiered main floor, putting those in the lower balcony practically on top of the 40x30-foot stage.

While the open bar in the posh V.I.P. lounge got the mostly invited crowd lubed up for a night of music, the explosive sounds blasting out of the beautifully calibrated system would've been more than enough to sweep a crowd of stone-cold teetotalers off its feet. It was designed

by IPR Services of Hacienda Heights, Calif., which has done a similarly state-of-the-art job on the systems for AEG's Staples Center, Nokia Theatre and the Kodak Theatre in Hollywood.

"The architectural constraints of this very close space presented a unique challenge," explains IPR principal Bob Patrick. "We had an upper balcony and a floor that had to be covered, and needed to provide a united source for both. So we put up a fine array for both the upper and lower balconies, separating the two arrays with a series of subwoofers in the center."

Patrick and his team chose JBL VerTec for the speakers, with 20 4888 powered boxes, eight 4882s, 6128s for the under-stage subwoofers, 6212s for the fills and six VRX 932LAs for the under-balcony delays.

"We tuned the system the day before the opening," says Patrick, "and we had Paul Bauman from JBL come down to assist us. We gave special attention to the lower frequencies and the crossovers between the subs and the boxes."

Beck's five-piece band, which blazed out an overdriven fusion of arena-rock guitar riffing and hip-hop grooves, was the ideal act for putting the



Club Nokia, pictured before and during opening festivities, features a JBL VerTec system.

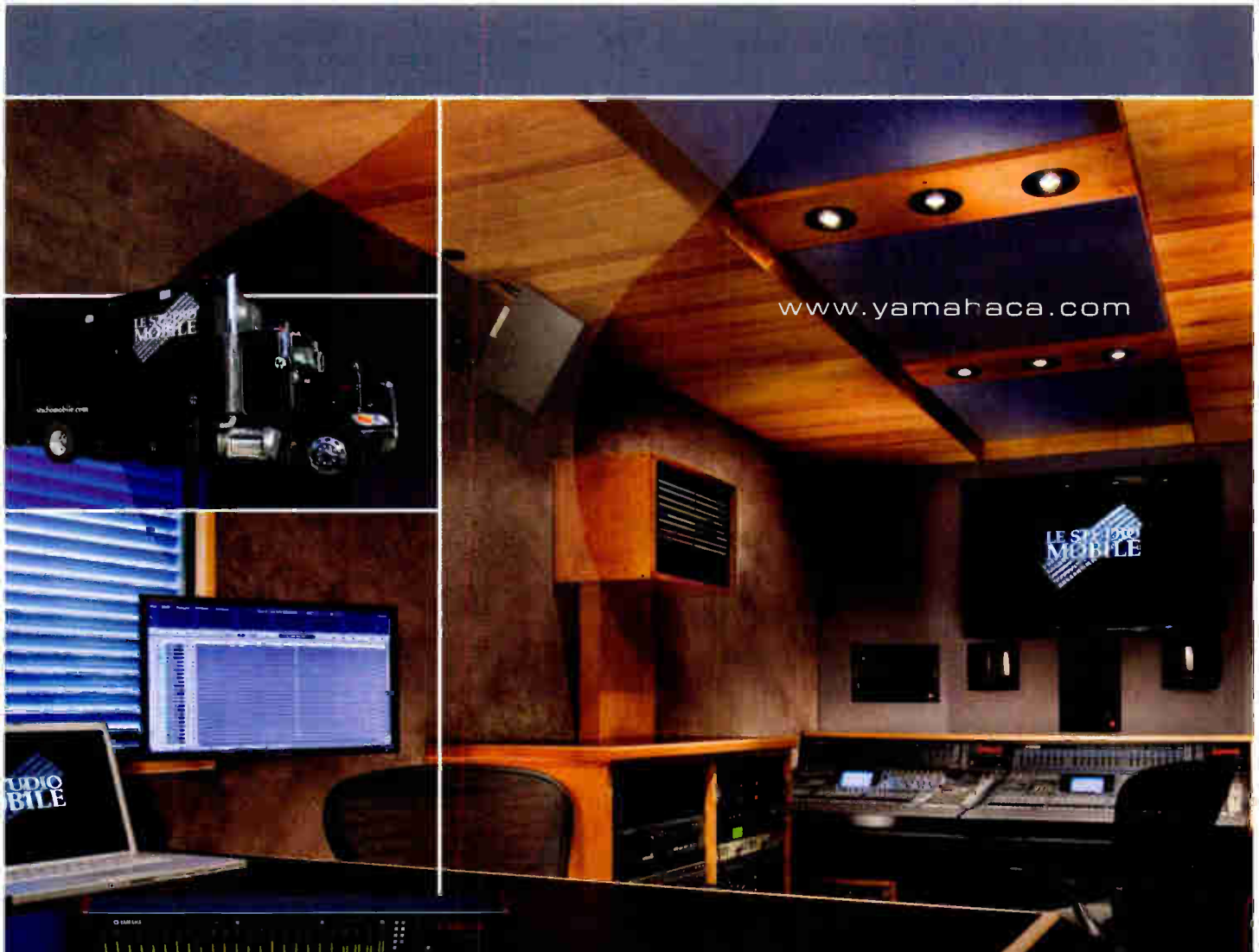
Club Nokia system through its paces—the sound coming off the stage was both dynamic and powerful. The rig crisply handled the extremes of volume and distortion while retaining utter clarity throughout the frequency range.

Says Patrick, "Part of the approach we used in developing these systems for AEG's venues was to have the ability to present artists like Beck that need to be overpowering, and there's a lot of energy created with those boxes. Beck's band did an excellent job of road-testing the system, I must say. I'm really excited about the venue."

The club, booked by AEG Live's Goldenvoice, is expected to host 150 concerts, performances, comedy shows and other special events in its first year of operation. Acts who have played or will play at Club Nokia include Taking Back Sunday, Usher, The Pretenders, B.B. King, Stone Temple Pilots and Madeleine Peyroux. III

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






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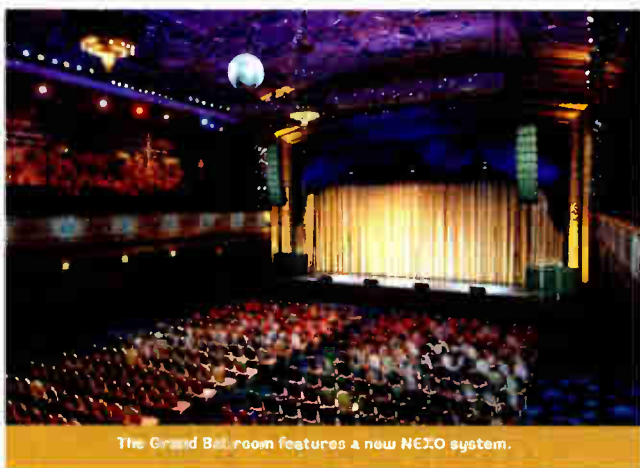
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World Radio History

# SOUNDCHECK

## Historic N.Y. Venue Upgrades



The Grand Ballroom features a new NEXO system.

Since opening its doors in 1906, Manhattan Center Studios (then called the Manhattan Opera House) has been at the core of New York City's music community. The competing Metropolitan Opera offered original owner Oscar Hammerstein I \$1.2 million to stop producing opera for 10 years, as Hammerstein offered less expensive seating. Hammerstein accepted the offer and began looking for other acts before eventually selling the building. After a number of changes in ownership, the building was renamed Manhattan Center in 1940, and hosted generations of world-class artists.

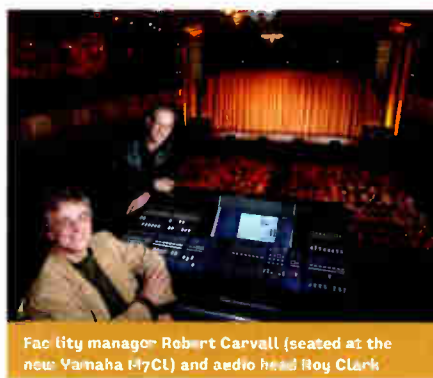
Fast-forward to 1986, when Manhattan Center Studios was formed to develop the site into a venue capable of hosting multimedia events. Audio recording facilities were expanded with the opening of Studio 4 in 1993. Studio 7 was rebuilt in 1996, when it was repurposed as a state-of-the-art control room to service all types of recordings and live events in the Hammerstein and Grand Ballrooms. Continuing to attract talent, the Hammerstein Ballroom underwent a major facelift in 1997.

Recently, the Grand Ballroom went under the upgrade knife, with the installation of a NEXO GEO S 12 Series line array system and two Yamaha M7CL

digital boards (one at front of house, the other at monitors). The 10,000-square-foot space hosts live musical and theatrical productions, as well as corporate presentations and banquets. On the A/V side, the room links directly to Studio 7 and an in-house video control room. The room is also connected to the recording studios, allowing for large-scale music recording of live events.

"We had a healthy demand and had been renting in a system for some time," says head of audio Roy Clark, who has been doing sound at the venue since 1979. "It made sense to make the purchase for the long-term investment. We chose the Nexo system after checking out several

other systems from other vendors based on listening tests, overall package [including monitor system] and price. We really liked the sound and intelligibility of the Nexo, and our upper management—who are musicians, as well as business people—were



Facility manager Robert Carvall (seated at the new Yamaha M7CL) and audio head Roy Clark.

moved by the beauty of the sound."

Clark also says the venue has been using Yamaha boards for many years and chose to stay within the family due to the console's "sound, ergonomics, reliability, guest friendliness and 'bang for the buck.'"

## tour log

Indigo Girls' Amy Ray is touring in support of her latest solo CD, *Didn't It Feel Kinder*. Front-of-house engineer Brian Speiser is mixing on the first DiGiCo SD8 board to hit the road in the U.S.

*Tell me about working with the board.*  
The SD8 is a monster. As the console has only ever been out on one tour before



[monitor board for Art Garfunkel in the UK], the software is still being updated to fix little bugs that pop up. The console sounds great and has been a saving grace for this tour. The transition for me from the D1 and D5 software was simple enough that I was able to do almost everything I needed within the first few shows. One thing that helped is the MADI recording and playback feature. It is easy to pop up the laptop with the [RME] HDSPe MADIface card in it, record soundcheck and then mess around with the board and a pair of headphones as I played the soundcheck back through the console after doors opened.

*You're doing both FOH and monitors?*

I am doing both from the console. I wanted to give the band the ability to have things sound as consistent as possible even though wedges change at every venue. I just tweak the parametric EQ on each output every day to make the wedges sound nice and then pull out some feedback points with the onboard graphic EQs.

*Where are you when you're not on the road?*

I spend most of the year touring with Indigo Girls, and when they're not on the road I've been doing monitors for 311.

## fix it

### Funkiphino FOH engineer Mark Halberstadt

When Funkiphino needed to solve stage volume problems dealing with nightmare monitor mixes, we found that Aviom's Pro 16 networks and Pro 64 networks had great connectivity with Yamaha digital consoles, which can be operated remotely over MIDI. With this

type of connectivity, we are able to replace the FOH analog console, complete with snakes, power cables and racks full of outboard gear, with a wirelessly connected tablet PC. The whole system works seamlessly with our existing Pro 16 in-ear monitoring system.





## CMA Awards Rock With ATK

Aired live in 5.1 surround sound, the 2008 Country Music Association Awards at Nashville's Sommet Center featured gear provided by ATK/Audiotek; at front-of-house stood production mixer Patrick Baltzell and music mixer Rick Shimer. The rest of the crew included audio producers

PHOTO: AP PHOTO/DARREN CUMMINGS



Michael Abbott and Tom Davis, broadcast music mixer John Harris, and Jay Vicari of Music Mix Mobile.

Audio-Technica had a strong showing at the awards (which the manufacturer has supported for 15 consecutive years), with more than 250 hard-wired and wireless mics onstage—from backline vocal and instrument mics to frontline wireless systems for such artists as Brooks & Dunn, Jason Aldean and Kenny Chesney (pictured), who for the fourth time took home the CMA's Entertainer of the Year Award. He performed using Audio-Technica Artist Elite 5000 Series UHF wireless system with the AEW-T3300 mic/transmitter and AEW-R5200 true-diversity, frequency-agile dual receiver.

Also making an "appearance" was Future Sonics; 10 performers and six award-winners used its earphones.

The FOH system comprised 88 JBL VerTec VT4889 speakers, 14 VT4880A subs, four ATK CSW-218 subs, six VerTec VT4887 front-fills and 72 JBL Control 25T underseat speakers. Boards there included a Yamaha PM1D and PM5D. Two Yamaha PM1D consoles were put into effect at monitor land, with ATK monitor wedges (80 M2s and 20 M5s), ATK side-fills, CSW218 drum subs and 16 Sennheiser G2 in-ears monitors.

For a full list of gear and audio personnel, check out [mixonline.com](http://mixonline.com).

## load in



Jan Smit monitor engineer Donovan Kemper uses a Triple Showtechnik-provided Midas PRO6, the second system off the rental company's production line.

King Crimson's tour featured a wide selection of Meyer Sound gear handled by FOH Ian Bond (on a Midas XL8). Engineers at Seattle's Benaroya Hall upgraded the SR system with three Soundcraft Vi Series digital boards (two V16s and a V14) for the 550-seat festival hall. Peace Apostolic Church now features an Allen & Heath iLive 112 digital mixing system in the 900-seat main work hall and a GL150s in the adjacent 300-seat fellowship hall. Yamaha Commercial Audio Training Seminars will offer Digital Sound Reinforcement 101 as part of the course selection now offered throughout the year both regionally and at the Bannockburn, Calif., head quarters. Visit [www.yamaha.com/cats/schedule\\_6889.asp](http://www.yamaha.com/cats/schedule_6889.asp) for a schedule. Audio Visions deployed a JBL VerTec system for All Star Ben's River City Roundup at the Qwest Center (Omaha, NE), a 27-year old family festival that featured performances by Jessica Simpson, Larry the Cable Guy and Rodney Atkins. UK rental companies Skan PA Hire and Wigwam Hire have added to their L-Acoustics inventory with Wigwam purchasing 32 SB28 subs and 24 LA8 amplified controllers, and Skan bringing in 32 SB28s and 60 LA8s.

## road-worthy gear

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The M215 is a high-output/low-distortion speaker with dual weather-resistant 15-inch Kevlar cone neodymium woofers and a 1.5-inch exit HF compression driver set on a 50x50-degree conical Fiberglas waveguide. Designed as a stage monitor, its trapezoidal (20.6x32x26.75-inch) cabinet, rugged 11-ply Baltic birch construction, tight pattern control and wide (60 to 18k Hz) bandwidth also allow it to be used as a drum/stage-fill.

[www.adamsonproaudio.com](http://www.adamsonproaudio.com)



### Neutrik dummyPLUG

Ideal for consoles, stage boxes, snakes, amps, speakers, or outboard gear or stomp boxes, dummyPLUGs are rubber covers that protect exposed, unmated connectors, keeping out dirt, dust and other contaminants. The dummyPLUGs also serve to prevent mis-wirings with stage setups and cabling, and are available for XLR receptacles, ¼-inch jacks, RCA jacks, DIN plugs, and Neutrik's Speakon (2/4-pole), PowerCon and opticalCON chassis connectors.

[www.neutrik-usa.com](http://www.neutrik-usa.com)



### JBL Expands VP Series

JBL expands its Venue Performance line—with 10 models—with the compact, two-way VP7212/95DPC (12-inch woofer) and (15-inch) VP7215/95DPC. Both feature 1.5-inch exit (4-inch titanium diaphragm) 2452H-SL compression drivers on 90x50-degree waveguides, DPC-2 DrivePack DSP with 875 watts (continuous) of onboard Crown-designed bi-amplification, multiple M10 attachment points, die-cast aluminum handles and pole-mount socket.

[www.jblpro.com](http://www.jblpro.com)

## ALL ACCESS

Photos and text by Steve Jennings

**C**hris Isaak has been touring since 1985 and burst into the rock stratosphere with his 1991 Top 10 hit "Wicked Game." With more than a dozen albums to his credit, including a recent "Best of" collection and a live album, Isaak draws crowds of adoring fans with the help of longtime band Silverstone. *Mix* caught up with the artist at the San Francisco Fillmore.



The tour is fully endorsed by Shure; select mics include Beta 58 for Isaak and backup vocalists.



Front-of-house engineer  
Eddie Cole



# CHRIS ISAAK

Front-of-house engineer Eddie Cole is mixing on a Yamaha PM5DRH, preferring to run it in the Type-2 EQ mode for all of the inputs and outputs. "The console is easy to mix on once you pass the learning curve as with most popular digital consoles," he says. "The big plus with digital boards is when you're doing one-off shows, you order your console, load the mix off of a saved file, EQ the system and go. We didn't bring in a P.A. system; we used the in-house Meyer rig."

As for outboard, Cole brings along a Lexicon PCM81 reverb for Isaak's vocal; everything else is onboard.







Monitor engineer Kevin McKenzie is also mixing on a Yamaha board—PM5D—using all internal processing. “Chris uses Ultimate Ears UE7s for his in-ear monitors,” adds McKenzie. “We use the Sennheiser wireless ear packs and Clair 12AM wedges [also on Isaak].”



According to drum/percussion tech Omar Sanchez, Kenny Dale Johnson’s kit (pictured) sees Beta 98s on toms, 81 condensers on hi-hat, SM57 on snare, black KSMs (overheads), Beta 91 inside and Beta 52 in the sound hole for the bass drum, and a right-angle Beta 57 for his vocal mic.



Percussionist Rafael Padilla uses Toca drums; mics include Beta 98s on congas, SM57 on snare and mounted tambourine, silver KSMs on overheads, a Beta wireless inside the cajon and a Beta 57 for a shaker/bongo mic.



Bassist Roly Salley plays Modulus and Harmony models. According to tech Cheatwood, Salley has two Fender 1960s Showman heads and cabs (1x15). Mics are Shure Beta 52 and U4D-UA wireless.



Scott Plunkett (keyboards) plays a Yamaha Motif ES 8 keyboard and a Hammond C3 organ with 122 Leslie cab.



According to guitar tech Ken Cheatwood (who also techs for bassist Roly Salley and keyboardist Scott Plunkett), Isaak plays an electric Gibson ES-335, an ES-345 and an acoustic J-200s. Amps include a 65 reissue Fender Twin with a set of Electro-Voice speakers. “We use a Shure KSM-32 mic and Shure U4D-UA and ULX wireless,” Cheatwood adds.



According to the guitar tech for Hershel Yatovitz, Mark LuBetski, the guitarist is playing five different guitars onstage, played through two vintage Silver-face Fender Twins, rewired to black-face specs, a “common mod done to these amps from the ‘70s,” LuBetski says. “There is also a Fender Deluxe Reverb offstage for a pre-echo send for FOH. All amps have Shure KSM32 microphones.” Yatovitz’s pedalboard offers Seymour Duncan Twin Tube for anything needing distortion. A Durham Electronics Sex Drive for boost, Line 6 MM4 for modulation, Nova NDY-1 compressor/gate, Roland RE-20 Space Echo, Visual Sound Visual volume pedal, Nova reverb pedal and a Peterson Strobostomp tuner are also on hand.



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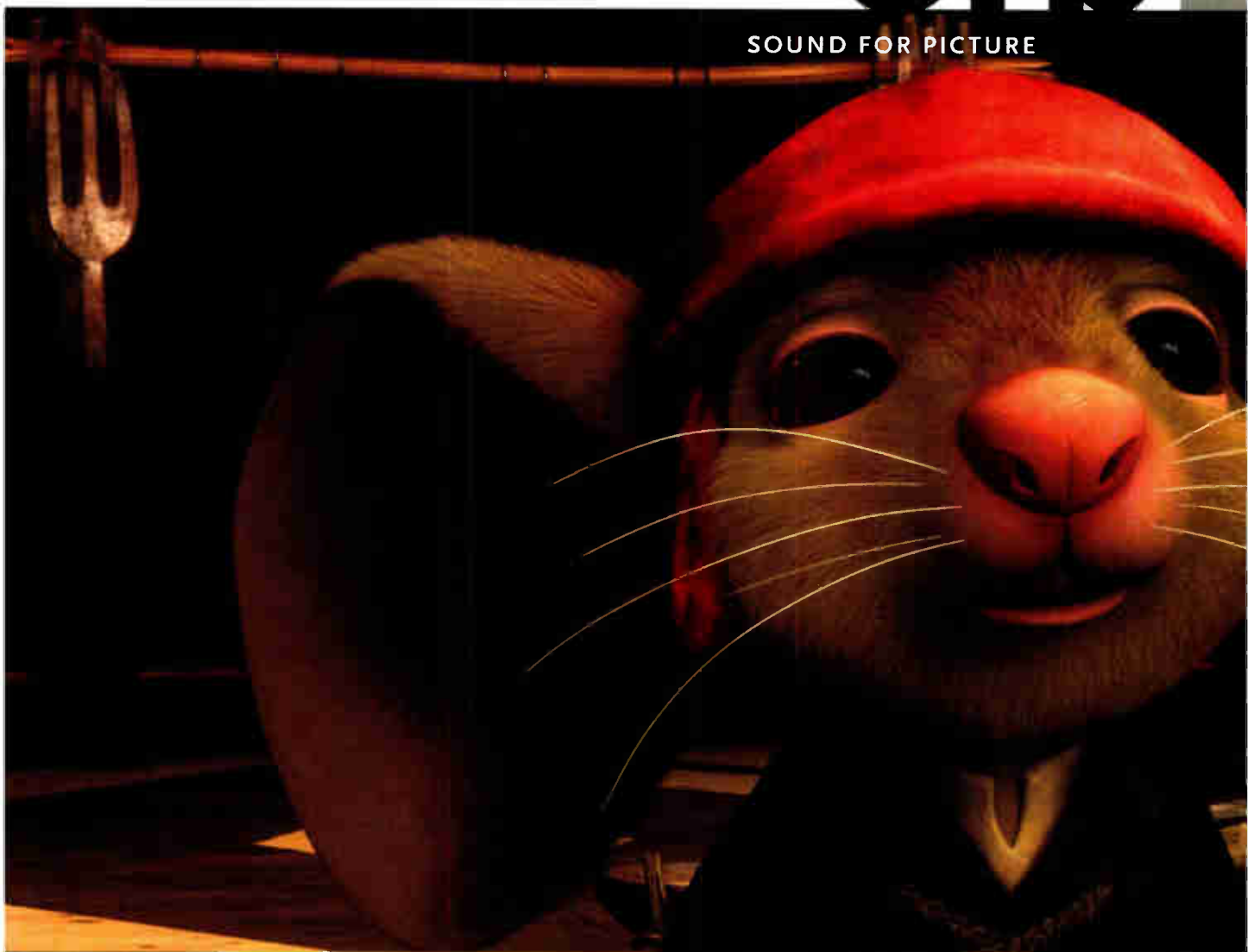
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World Radio History





By Blair Jackson

# 'The Tale of Despereaux'

MAKING ANIMATED FANTASY SOUND REAL

When my then-11-year-old daughter and I read Kate DiCamillo's Newberry Award-winning children's book *The Tale of Despereaux* back in 2003, we were completely swept up. This beautifully told story of a brave medieval mouse and his adventures among both humans and rats (boo, hiss!), and the

wonderfully rendered black-and-white illustrations by Timothy Basil Ering had both of us exclaiming: "Wouldn't this make a fantastic movie?!" Well, five years later it is. *The Tale of Despereaux* is a wonderful capper to what has been a great and varied year for high-quality animated films, including *WALL-E*,

*Kung-Fu Panda*, *Dr. Seuss' Horton Hears a Who*, *Madagascar 2* and *Boh*.

*Despereaux* is a bit different from the rest (except *WALL-E*) in that it is fundamentally a drama, albeit one with plenty of action and lots of humor. The directorial team has a good pedigree: Sam Fell co-wrote and co-directed the

fine, underrated 2006 British film *Flushed Away* (which also had a rodent as a main character); and Robert Stevenhagen's work as an animator goes all the way back to the classic *Who Framed Roger Rabbit?* in 1988, and includes such films as *An America Tail: Fievel Goes West*, *All Dogs Go to Heaven*, *Balto*, *Space Jam* and *The Road to El Dorado*. Supervising sound editor and lead sound designer Lon Bender also has an impressive resumé in the animated world, including such modern Disney fare as *Pocohontas*, *Mulan* and *The Hunchback of Notre Dame*, as well as *The Prince of Egypt* and *Shrek*. (Bender also does plenty of live action work: He was most recently Oscar-nominated for his sound work on *Blood Diamond*, and he won a trophy as co-supervisor of the sound team for *Braveheart*.)

Asked about some of the differences between designing sound for those Disney films and the new, completely computer-generated *Despereaux*, Bender says, "The detail of the animation style has a lot of bearing on how you approach the sound, and the other major thing that has a bearing on it is that *Despereaux* is not a musical; almost all of those films were musicals. This film is really a narrative—with some magic thrown in—that concentrates deeply on characters and their development, so we really had to add level and dimension to the space and the worlds in which characters are operating to keep the viewer close to the characters. In this case, you have the human world, the mouse world and the rat world, so you have representations of each of those and [sonically] each is treated differently. There's the human world [of the town and kitchen], and then behind the walls is the mouse world, which is a world of light [lit by matches and such], and then down below in the dungeons and cellars of the human world is the rat world. The descent from mouse world into rat world is a very dramatic moment. Rat world has to be terrifying and creepy, yet there's also something alluring about it to the hero, *Despereaux*."

The basic sonic approach, Bender says, was a sort of heightened realism. This isn't broad cartoon comedy at all; rather, "Everything in it was real, in terms of what it is in real life, and then how it would be perceived from a rat or a mouse perspective. For instance, there's a great sequence [in the human world] where [chef] Andre is sitting there bored, and he's playing with a coin on the table, and the coin knocks off the table, hits on the floor and goes down into mouse world—which is our introduction to mouse world. So it goes from a tiny coin on a tile floor to become this *huge* thing that's like the

boulder in *Raiders of the Lost Ark* as it rolls into mouse world, knocks a bunch of stuff over and everyone goes crazy. It takes the viewer through the transition from the real world into the miniature world of mouse world and rat world in a way that makes it accessible."

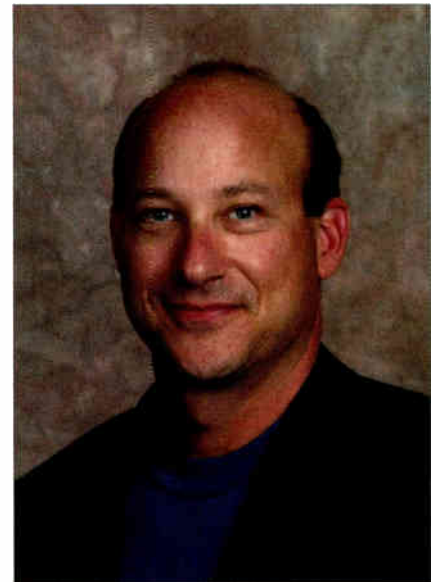
So what does a coin sound like when it seems like it weighs three tons and is rolling around? Bender's solution was "a lot of large metal objects that we cobbled together to create the sense of movement and turning because it had to feel like it was rolling forward, but also really large. The key to that sound is how the ridges on the edge of the coin bang against the ground—'Oh, I get it, it's a coin!'"

The picture editorial was primarily done in England by the newly formed animation division of a company called Framestore, which is the most successful special effects house in Europe—its list of credits includes four *Harry Potter* films, *The Golden Compass*, *Superman Returns*, *X-Men: The Last Stand*, *V for Vendetta* and many others. But it was posted in L.A. by Soundelux. In addition to Bender, the American crew included Bender's sound design associate Jon Title, ADR supervisor Chris Jargo and, working in the Hitchcock Theatre at Universal Studios Sound in L.A., re-recording mixers Chris Jenkins (music and dialog) and Frank A. Montañó (FX). The score was composed by William Ross, who was previously best known as an orchestrator for John Williams and many others. Bender's primary liaison when it came to sound was not either of the directors, but rather screenwriter and co-producer Gary Ross, whose past work includes Oscar nominees *Seabiscuit* (which he also directed), *Dave* and *Big*, as well as *Pleasantville* (another directorial effort). As Bender puts it, "Gary Ross was the creative force behind our part of the movie."

"One of the interesting things about our early involvement was that Gary, who did not have a background in animation, was very reliant on music when he was blocking out the sequences," Bender continues. "At first he didn't have a lot of strong sound work to support his ideas, because—as with all animated films—in the beginning he had only the voices. Then come the storyboards, then the animatics, then animation, then *lit* animation, which is the final stage." Bender and his team got involved "when they were coming out of storyboarding and into the animatics stage—so long before we had any color, any lit shots or complete shots—and as soon as Gary started hearing sketches of different environments and sketches of the action that had sound put to them, all of a sudden he

realized that he had to completely change his perspective on his reliance on music in terms of the storytelling. The music itself also changed from how it was developing, because the scoring of character and the scoring of story are two different things, and the sound work we did in those early phases helped him reconsider the emphasis of the score."

Bender adds that composer William Ross "was doing comps and tests all along and we were able to share things in the evolution of



Supervising sound editor Lon Bender

both the score and the sound, which is ideal. He might have a certain instrumentation in mind for a particular scene, so I would be aware of that and maybe stay away from what he was doing; or him knowing that I had certain sounds in mind affected what he did, too. We also integrated our work wonderfully in the sequence where *Despereaux* is exposed to the giant arc lights in the stadium."

Because of the way animated films are made, there is no "on-location" production track as in live-action movies. All the voices—lead and groups—are recorded at ADR studios, though as ADR supervisor Chris Jargo notes, this one was a little different. "Usually, you go into a room with all these actors and you put them on a bench or you have them stand and it's a static recording. For this we had a boom operator, sometimes two, because the director wanted some physicality from the actors. We also put radio mics on them, so if there was overlap he'd have total control. So in that way, it was more like a live-action film. That ended up being a cool way of doing it because it had a little more life and didn't sound like it was all



done the same way. We recorded directly to Pro Tools and we'd have a combination track, isolated tracks and a boom mic track. When we got into cutting, we almost always deferred to the boom mic because it sounded best."

Bender says, "Chris worked on this film longer than any other sound person. He spent close to four years on this movie, doing all the original recordings and original assemblies for the directing team, all the looping and all the subsequent walla group direction." Most of the ADR was done at Todd-AO, but sessions also took place at Disney, at Sound One in New York and even in London as the script changed or new animations became available. "Suddenly, what we thought was an empty street has hundreds of people in it when the animation comes back," Jargo says. "I think we recorded [narrator] Sigourney Weaver 15 different times!"

The voices form the basis of the story, of course, but then, Bender says, "every effect, all the ambiances, every footstep, every hand movement, every treatment on the voices" comes under the supervisors' domain at some point.

"Aside from the little odd things you do," he says, "it's the *obvious* things that are so much



more important than in a live-action film because you have no production track to support the performance when somebody is just walking and talking, and making a mouse or rat walk and talk so you believe it—now, that's a tough one! All of the little things that are made up from the Foley have a lot more importance in making it feel real and alive. The animation is so three-dimensional and so moody in its lighting—it's really like no other animated film I've ever seen—so Foley was a huge, huge part of it."

Bender supervised the Foley sessions at Todd-AO West. "No detail could be left unturned because it was playing all the time and it adds so much depth to the project," he says. "It was even important to get the mouse feet and rat feet right, which make Despereaux more adorable and the rats that much scarier. And the trick is not just to do it in real time, but *animation* time because it's different and these characters aren't human."

So how was it done? "We didn't do [the Foley



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recording] with feet, we did it with hands, and we used different kinds of gloves to get the sound of padded mouse feet [wearing soft shoes]. And the rats, who were generally not wearing shoes, except for Roscuro, we did that with nails and other things to make scratching sounds.”

A combination of FX, Foley and ADR were important in establishing some of the ambiences in the film, from the big rat “coliseum” scene at the climax to the more subtle overall sounds of the dark, unseen rat world. Of the latter’s sound design, Bender says, “Aside from some of the obvious ploys, like dripping water and echo, we used a lot of voices and created a certain amount of dark hysteria in the backgrounds using vocals that came from the loop group. That was a big part of the character of rat world.”

There was plenty of sonic experimentation at every stage of the film’s production. “The process we went through with Gary in coming to the final sound of the movie was, let’s have it be full, with every sound in its place, and *then* let’s strip out as much as we need to really home in on the characters, particularly Roscuro’s story. Despereaux’s is a little more obvious as the hero; Roscuro’s is more oblique because he’s going

through more complicated things. [Though a rat, Roscuro is sympathetic to the mice.] So we stripped a lot of things *away*—effects and music—and then really got close to him in terms of his dialog [he’s voiced by Dustin Hoffman] and his Foley, so every sequence he’s in you can really feel him and he doesn’t get lost. Then we put some things back in that supported the character.”

Bender says that for FX, he and Jon Title used Pro Tools as their primary sound editing and mixing device, and they made extensive use of Native Instruments’ Kontakt 3 software sampler in their design process: “You load sounds into it and then you can manipulate them and weave them together, or have one sound after another.” The Lexicon 480 is still Bender’s reverb of choice. He notes that mixer Frank Montañó also used the Lexicon 960. Montañó and Jenkins (whom we will be profiling in an upcoming issue for their work on *Watchmen*) mixed the film on a Harrison digital board.

As is typical with the new generation of animated films, Bender says, “We kept evolving



sounds as long as we were getting shots that had new lighting on them—the lighting affects the mood of the shots, so it also affects the sound of the shots. When you get the full, lit animation, you invariably have to go in and adjust levels and reverbs and things based on light and dark, based on color temperature. We adjusted right up to the last minute.

“I’ve been doing this 30 years now, and every show I do I learn a new approach for some aspect of a show. And that’s a great thing about this job. There’s always something new you can learn about the aesthetic or the process or technology, and it *never* gets old.” III

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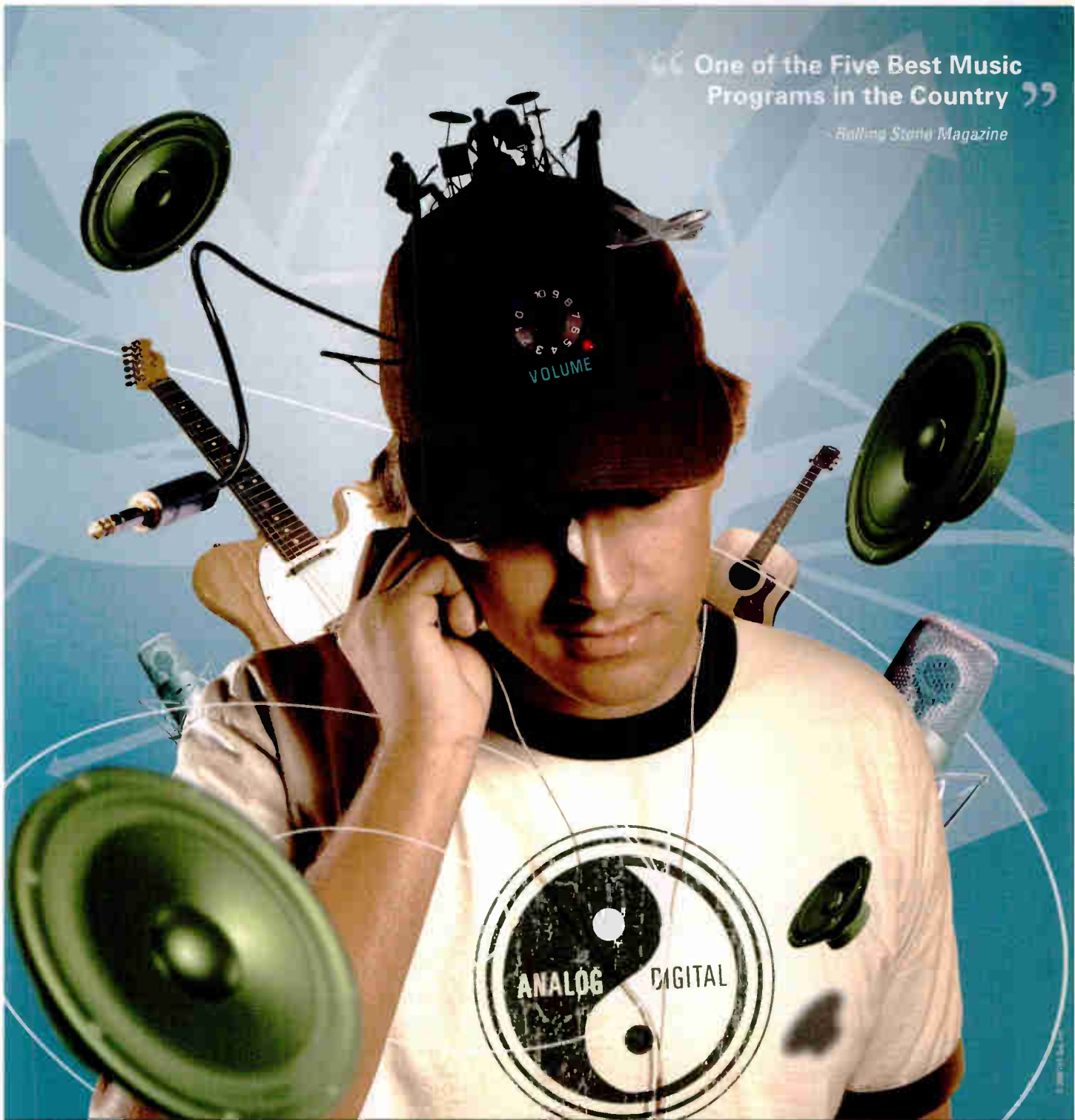


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# 'Christmas on Mars'

WEIRDEST...HOLIDAY...FILM...EVER!

By Blair Jackson

Look, maybe this *isn't* the way to get into the Flaming Lips. Yeah, I know—you've heard they're funny and strange, and you've wanted to check 'em out. Maybe someone told you about some of the Oklahoma City band's past exploits—like *Zaireeka*, a concept album meant to be played simultaneously on four different sound systems, or their related experiments with cars and boomboxes, again involving multiple sources playing music. Maybe you've stumbled across one of their truly odd videos for one of their non-hits, or at a party some prankster cranked up a track or two from one of their bizarre recent albums, *Yoshimi Battles the Pink Robots* and *At War With the Mystics*: places where off-kilter pop meets edgy electronic music, rock riffing and the most lyrically twisted musings this side of Zappa. But you still may not be ready for *Christmas on Mars*.

How to describe the indescribable? *Christmas on Mars* is a 90-minute holiday fable set in a small, lonely space station on Mars. The handful of bored and troubled folks therein (including Flaming Lips bandmembers) confront various unusual situations in the space station and in their *minds*, and there's also a rather Santa-like, but silent, alien—played by Lips founder/leader/film director Wayne Coyne—who magically appears and becomes a pivotal figure. Ah, but that brief synopsis doesn't even hint at the suffocating claustrophobia and ennui that permeates life at the space station, or the grotesque science experiments that are taking place there, or the surrealistic visions of marching bands with female genitalia where their faces should be (I kid you

not). Between the Labia Band and the unrelenting profanity, this is not one for the kids.

Production values are...well...*limited*. This is a proudly low-budget affair, shot mostly in black and white (16mm and video) on funky sets constructed at the Flaming Lips' "compound" in Oklahoma City. There are scratches on some of the footage to give it the look of a cheesy '50s sci-fi movie, but it's not *all* put-on. It's genuinely creepy and disturbing—and uplifting at the end. It's the feel-weird holiday movie of 2008! It had limited theatrical showings in the fall, but is already available on DVD (with soundtrack CD included) for future generations to puzzle over. Seven years in the making, *Christmas on Mars* was an outgrowth of Coyne's longtime fascination with film—previously indulged in a dozen or so Flaming Lips videos, mostly shot with collaborator Bradley Beesley, who also worked on *Mars*. It was made in small chunks through the years, edited mostly in Final Cut Pro, with the soundtrack recorded and mixed (in stereo and 5.1) at Tar Box Road, the upstate New York studio of their regular producer/engineer, Dave Fridmann.

The score, a collaboration by the Lips—particularly Steven Drozd, who's also the leading man in the film—offers a moody blend of appropriately spacey, minimalist electronic/synth pulses and music; haunting celestial voices and orchestral textures; and *no* conventional songs or rock instruments. Music and effects were part and parcel of the same thing, Coyne says. "We'd go in some days and do sound effects as a group,

One of our favorite martians, Wayne Coyne

making 10 different computer programs of distortion actually sound like a broken refrigerator. Or maybe we'd

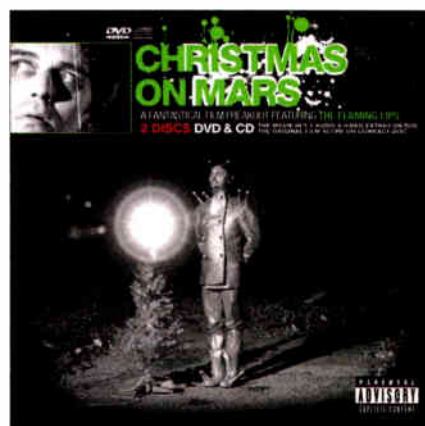
record that refrigerator or the microwave door closing. Other times we'd sit there and make music as the film was showing on screen, going through countless variations.

"Effects are nothing new to us—there's always been an element of that in what we do," he continues. "What is a sound effect versus what's just a cool sound? From day one we've experimented like that—throw some stuff in the background and suddenly you've got this atmosphere, which is helping to tell some strange, abstract story."

Coyne says that Fridmann's control room is equipped with all the synths and computer programs they needed, "and Steven also has a little Pro Tools setup at his house with endless plug-ins. I don't even know the names of most of them. I know he has a couple of the Miroslav [Philharmonik] programs where you get a lot of harp and string sounds and big, dense orchestral things. That wasn't even around when we started in 2001, so as the years went along, he started to use it more and more.

"We checked out so many programs, and in most of them there are probably 10 things in their sound banks that are awesome of the half-million things that are in there," he says with a laugh. "So you dig through and find a couple of unique combinations and run it through a couple of distortion devices or flangers or something that blends effects. But I would say there was never really a method [to the sound creation].

"We also got a few effects from sound libraries and even from Garage Band. To me, it didn't matter if it was a sound we found in two seconds online or a sound that took us three weeks in Dave's studio; the whole thing is a combination of those. Anything that would work we used." III







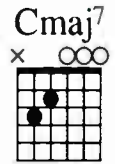
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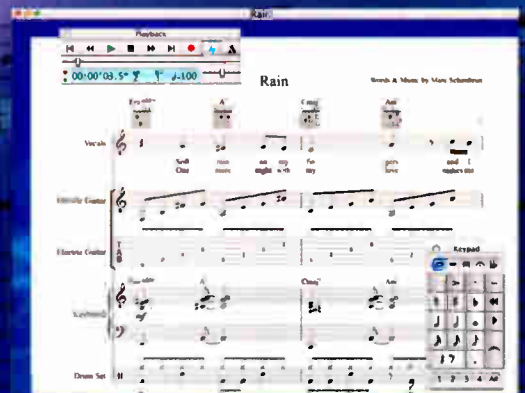


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night with

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my



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# Tech

## NEW PRODUCTS

### Precision Time Piece

#### Antelope Audio Trinity Isochrone Master Clock

Based on the same technology used in its OCX and OCX-V master clocks, Antelope Audio's ([www.antelopeaudio.com](http://www.antelopeaudio.com)) Trinity (\$4,000) presents a choice of 16 formats with three independent audio generators up to 384 kHz (DXD) with varispeed control, another three independent SD generators (simultaneously offering PAL and NTSC); and a third set of independent HD generators. Other features include Antelope's fourth-generation Acoustically Focused Clocking (AFC), which now employs 64-bit DSP, and the Triple Display showing the frequencies of all nine independent generators. Current Antelope clock users will appreciate that Trinity maintains all of the features from the company's current OCX-V A/V master clock, like



the Jitter-Management module, blackburst generator, and full audio and video gearboxing with simultaneous 0.1- and 4-percent pull-up/pull-downs.

As with the OCX and OCX-V, the Trinity can accept input from the 10M Rubidium Atomic Clock. Using the Atomic Clock with any of Antelope's master clocks (Trin-

ity, OCX or OCX-V) will in effect bypass the Oven-Controlled Crystal in these devices and resolve to Atomic for reference, boasting sample-accurate operation for eight days. The Trinity can also be user-recalibrated in the field to maintain stability in light of aging components. The unit features an intuitive menu-free user

interface, dual-redundant power supplies, USB input for remote Mac/PC operation and an always-on Superclock for use with Pro Tools systems. Inputs include AES/EBU, word clock, S/PDIF, video and Atomic clock, while three independent outputs total four AES/EBU, four S/PDIF and 15 word clock outs.

### Compact Production

#### Tascam DP-004 Digital Pocketstudio



The Tascam ([www.tascam.com](http://www.tascam.com)) DP-004 Digital Pocketstudio (\$199) is a portable 4-track digital recorder that promises to retain the ease-of-use of its classic cassette-based 4-tracks but with CD-quality recording. The recorder uses dedicated knobs and buttons for easy operation, and features two unbalanced 1/4-inch inputs accepting mic or line signals, plus a built-in stereo microphone. A stereo mixdown track is also included, and tracks or mixes can be transferred to a computer using USB 2. The DP-004 records to SD cards, and a 1GB card is included. A metronome and tuner are built-in, and input A accepts a guitar-level signal for direct recording.



## Comely Cans

### Phiaton MS400 Headphones

These stylish new headphones from Phiaton ([www.phiaton.com](http://www.phiaton.com)) feature 40mm electrodynamic drivers, 98dB sensitivity, 32-ohm impedance and a maximum input power of 1,000 mW. Made with carbon-graphite fiber, the lightweight (6.5-ounce) 'phones are easy to transport and have flexible joints allowing them to fold in two. The \$249 price includes compact carry case and a ¼-inch gold-plated plug adapter.



## Chillin' Interface

### Blue Icicle USB Microphone Preamplifier

The Icicle (\$79.99) from Blue Microphones ([www.blumic.com](http://www.blumic.com)) lets users connect any XLR mic directly to their computers via USB. This Mac/PC-compatible interface features phantom power, a fully balanced front end, analog gain control and driverless operation. Other features include a phantom-active power light and 44.1kHz/16-bit resolution. Icicle supports USB 1 or 2 on Mac OS X or PC (Windows XP Home/XP Pro or Vista).



## Plug-Ins to Go

### SM Pro Audio V-Machine VST Player

The V-Machine (\$199) from SM Pro Audio ([www.smpaudio.com](http://www.smpaudio.com)) is a compact VST/VSTi hardware playback module designed to take plug-ins anywhere and access them directly without a computer. Multiple plug-ins can be loaded into bank/preset memories of the V-Machine for immediate availability and combined into chains, splits, and layers to create rich and unique sounds. Full external MIDI controller support lets users work with available parameter controls such as virtual dia's, switches and faders. Features include a metal chassis, stereo I/O and headphone out with volume control. Three USB connections handle computer transfers of VST applications, streaming of sample content from external hard drives, connection of USB controllers and copy-protection dongles. The box is Mac/PC-compatible and ships with IK Multimedia's SampleTank SE and a set of sound samples.

## Stellar Update

### M-Audio Luna II Condenser Microphone

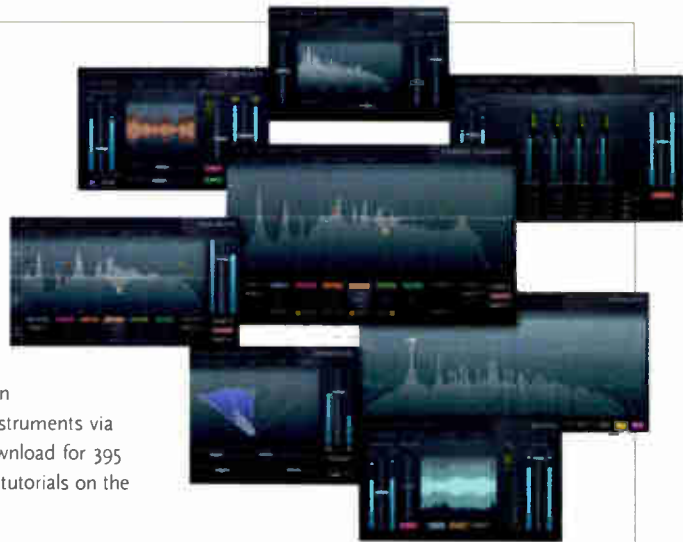
Building on the feature set of the original Luna mic, the Luna II (\$399.99) from M-Audio ([www.m-audio.com](http://www.m-audio.com)) features solid-state, Class-A electronics and a 1.1-inch, 3-micron, gold-evaporated diaphragm with brass capsule assembly. Additional features include a +10dB pad and LF roll-off filter switch. The fixed-pattern cardioid condenser handles 130dB SPLs (140dB with pad) and weighs 1.4 pounds. Luna II ships in a wooden case and includes a heavy-duty shock-mount.



## Master of Your Masters

### Vienna Suite Processing Tools

The Vienna Symphonic Library ([www.vsl.co.at](http://www.vsl.co.at)) team has ventured into new territory with the Vienna Suite, a bundle of audio processing tools for mixing and mastering. The package includes a 5-band master EQ, limiter/compressor, multiband limiter, panner, exciter and analyzer—all with 64-bit audio processing on major 64-bit and 32-bit host platforms supporting Audio Units (OS X), VST (OS X, Win) and RTAS (OS X). The tools can be used with any DAW on any tracks, or on Vienna Ensemble and Vienna Instruments via the included tailor-made presets. The Vienna Suite is available only as a download for 395 Euros; prospective owners can get a 30-day test-drive demo license and video tutorials on the company's Website.



## Modeling the Bottom End

### Markbass Mark Studio 1 Bass Amp Plug-In

The Italian bass amp manufacturer Markbass ([www.markbass.it](http://www.markbass.it)) debuts Mark Studio 1 (\$399.99), a bass amp-modeling plug-in based on three Markbass amp heads and six Markbass cabinets. It incorporates six mic choices, plus control over compression, mic position, tweeter level, room ambience and more. Users can mix/match and adjust any combination of heads, cabs and mics and store settings as user presets or check out the 64 factory presets designed by project engineers and top Markbass artists. Mark Studio 1 can be applied to a bass track during or after recording. Also included is a stand-alone version, which operates on its own without recording software. Both OS X and Windows versions are offered in RTAS/Audio Units/VST formats.



## Two Tracks in Your Pocket

### Marantz PMD661 Field Recorder

A svelte new portable recorder from D&M Professional ([www.d-mpro.com](http://www.d-mpro.com)), the PMD661 (\$599) improves on its PMD660, offering a streamlined form factor, built-in stereo mics, 44.1/48/96kHz recording and SD card media.

Measuring just 6.5x3.7x1.4 inches, the PMD661 has switchable XLR mic/line inputs; a secondary unbalanced, 1/8-inch mini-jack line input; S/PDIF digital input; and stereo RCA

analog line outs. The PMD661 is compatible with SDHC cards (currently up to 32GB capacity), offering up to five-plus hours of recording time from four AA alkaline or NiMH batteries (not included). The USB 2 port supports simple drag-and-drop file transfers, and the included Mark Editor software allows marker points on the recorded file to be adjusted post-recording, creating a new file so that basic editing can be carried out on a PC or Mac if desired. III



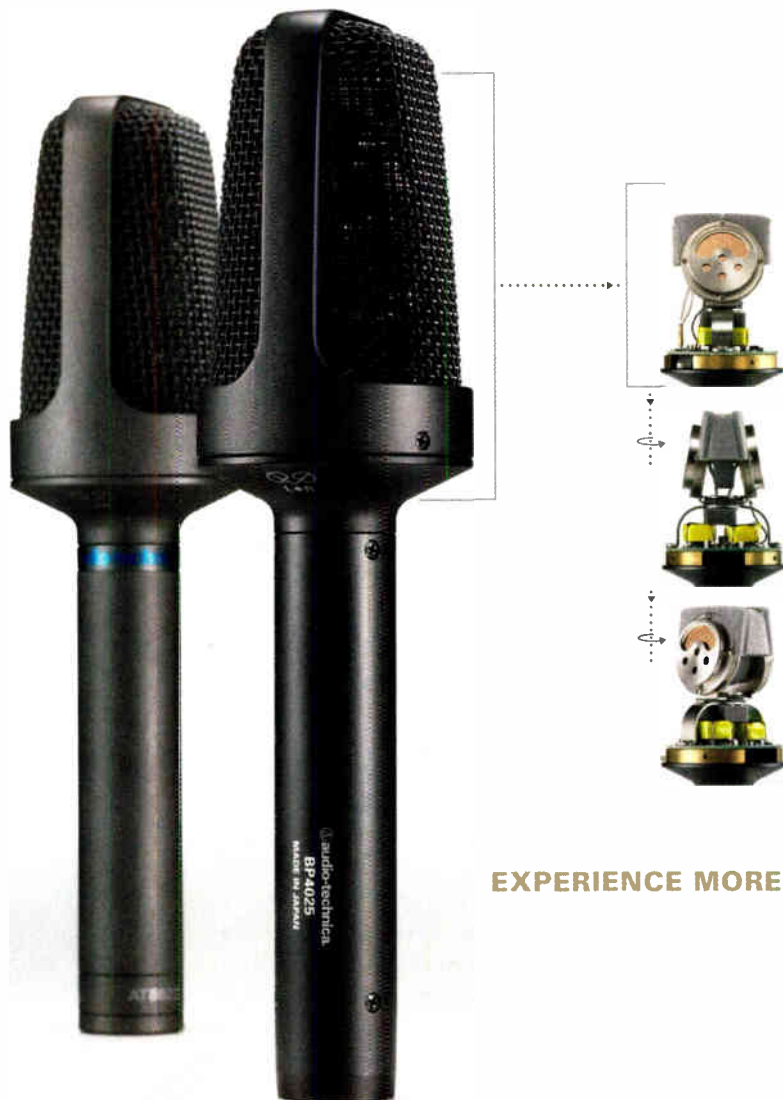
## From Here to There, Digitally

### AudioScience ASI5402 CobraNet PCI Soundcard

The AudioScience ([www.audio-science.com](http://www.audio-science.com)) ASI5402 (\$495) is a PCM-only soundcard providing CobraNet audio networking coupled with audio processing. The card can simultaneously record/play two channels of 24-bit audio over a 100Mbps Ethernet network, and includes AudioScience's MRX technology for routing/mixing of streams in different sample rates and formats. Drivers are provided for Windows XP, Server 2003 and Vista, as well as for Linux, with 64-bit drivers available for Vista and Linux. AudioScience's ASIControl app allows for making CobraNet routing connections between the ASI5402 and any other CobraNet-compliant device on the network. SDKs are available for Windows and Linux using either standard APIs such as DirectSound or ALSA, or the proprietary AudioScience HPI and ASX interfaces.







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**BP4025 FEATURES**

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**AT8022 FEATURES**

- Innovative coincident capsule configuration for X/Y stereo image in a compact housing
- Operates on battery or phantom power for use with pro or consumer equipment
- Includes balanced (XLR-type) & unbalanced (3.5mm TRS) cables
- Switchable low-frequency roll-off



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## Klein+Hummel O410 Monitors

**Mid-Fields Offer Superb Bass, Beefy Amps and Pinpoint Imaging**

Klein+Hummel's monitors have been a staple in high-end studios for more than four decades, and the company is now introducing the O410 mid-field monitors. Sporting three drivers powered by 800 watts peak of Class A/B amplification, the O410s replace K+H's older O400s as the manufacturer's answer for small- to mid-sized studios requiring more volume than near-fields, along with accurate, precise playback for detailed mixing and mastering tasks.

Given the high standards set for these monitors, I put them through their paces using a top-end signal chain with a Prism Orpheus interface and Zu Wylde cables. Over the course of a month, I spent a great deal of time simply listening to familiar material and completed a number of mastering projects with the O410s.

### Out of the Box

"Klein" means "small" in German, but as the delivery service wheeled two massive crates into my studio, I knew there was nothing tiny about the O410s. Each monitor packs 80 pounds of top-grade components into a frame that's 2 feet tall and 1.5 feet deep, so getting them up on stands was a two-person affair. Once in position, they cast an impressive—and somewhat imposing—shadow over my studio. I used them vertically; however, the mid driver/tweeter pod rotates 90 degrees to maintain phase coherence when used horizontally.

The rear panel has an analog XLR input and gain trim, along with three fixed high/

mid/low EQs and a single parametric for fine-tuning the 20 to 200Hz range. It's good to know these tools are available, but after auditioning the speakers freestanding in my room, I felt the flat settings hit the nail on the head. Positioning the monitors about three feet from the back wall provided the tightest bass response, and the stereo field came into sharper focus after toe'ing each unit in about 15 degrees.

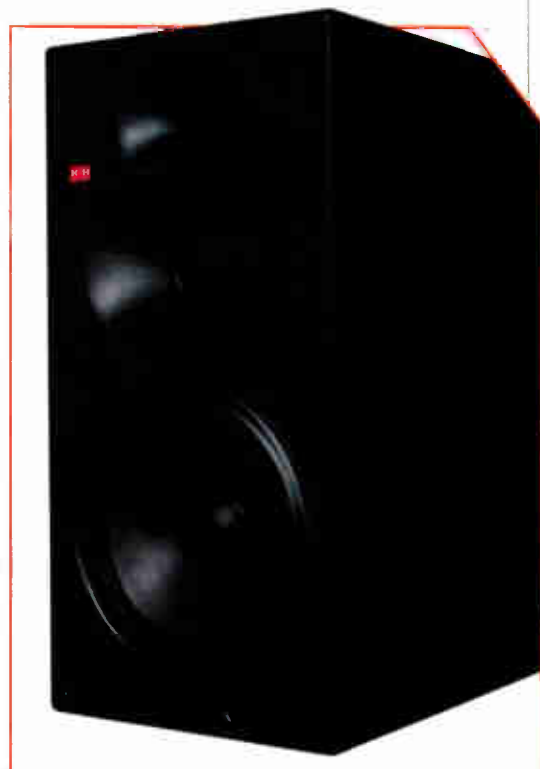
### First Impressions

Having used two-way PMC LBis with a Bryston amp and Tannoy subwoofer for quite some time, I was worried that I'd need more time than I could spare to adjust to this full-range, three-way system. Actually, the opposite was true—listening on the O410s was like slipping on a pair of comfortable shoes after running a marathon. I was struck by the O410s' capacity to fill my studio with balanced sound, far beyond the capacity of my much smaller LBis, while maintaining a clear, defined stereo field.

The O410s' 10-inch woofer and generously sized cabinet brought bass notes into focus, offering a level of clarity and resolution that my previous setup simply couldn't match in the lower registers. As a dance-music producer and remixer, I deal with hard-to-handle sub-bass on a daily basis, and finding monitors that accurately reproduce these frequencies has always been a challenge. In this area, the O410s knocked it out of the park without breaking a sweat. The woofer, backed by 400W of power, belts out deep bass that's phenomenally tight without any of the looseness or boominess sometimes attributed to bass-reflex designs.

### Plenty of Power

The O410s' capacity for accurate, high-SPL delivery was put to the test with Trentemøller's



The O410s' large cabinet and 10-inch woofer combine to offer a commanding presence in low frequencies.

"Take Me Into Your Skin" from *The Last Resort* album, a seven-minute electronic epic that opens with tightly gated percussion and crescendos into a sonic onslaught of drums and synths. The kick drum in this song is a slab of tight bass, and the O410s belted it out with authority, literally filling the room with thick low end that cut off sharply without boominess or resonance, leaving a sonic vacuum between beats that enabled other elements in the mix to shine through. Hi-hat and tweeky top-end percussion were crisp, almost syrupy, and never came across as unpleasantly sharp, nor were they painfully loud no matter how much I cranked the volume. Even in the thickest portions of the mix, individual elements in every frequency range were easy to spot, and the stereo field didn't feel cluttered or murky.

Aside from bass handling, the O410s' other impressive feature was the capacity to

### PRODUCT SUMMARY

**COMPANY:** KLEIN + HUMMEL

**WEB:** [www.klein-hummel.com](http://www.klein-hummel.com)

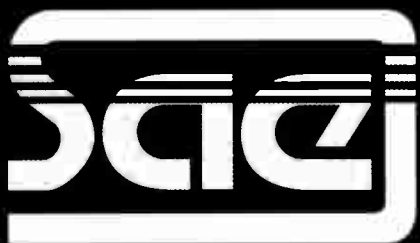
**PRODUCT:** O410

**PRICE:** \$13,996/pair

**PROS:** Extraordinary bass handling. Outstanding imaging. Rotatable tweeter/mid module. Generous amplification. Optional digital input module.

**CONS:** Expensive. Heavy.

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create a stereo image that's not just wide, but also thick with depth and texture. While auditioning tracks from the SACD remaster of Pink Floyd's *Dark Side of the Moon*, Roger Waters' vocals were solidly in the center of both monitors, with an added third dimension imparting an extra sense of tangibility, where elements of the mix hung not just between the speakers, but also behind them. The ability of these huge monitors to dissolve into a single cohesive soundstage is nothing short of amazing.

It's difficult to find fault with the O410s' remarkably balanced sound. I did, however, note a slightly forgiving aspect to the sound in the midrange registers between 1 and 3 kHz. While I was mastering a dense rock project with heavily distorted guitars, it was a little too easy to push EQ in this area, and the client called back, wondering if I could tone down the brashness somewhat. Chalk it up to the euphonic nature of the O410s—they don't misrepresent this area, but they simply sound so good that it takes a little practice to hone

in on their vibe. After realizing this characteristic, it was a snap to adjust my workflow accordingly, and subsequent masters had perfect balance.

### And the Winner Is...

Given their expensive pedigree, it's no surprise that the O410s are amazing speakers that admirably vindicate their stratospheric pricing. Imaging is superb; clarity and precision are extraordinary. While they are spec'd to handle LF only down to 30 Hz, their low-end accuracy is superb, making bass-heavy mixing—sans subwoofer—an absolute joy. Engineers involved in dance or urban music will be hopelessly in love with the O410s. These are a pleasure to work with, and a worthwhile investment for studios seeking a mid-field monitor that delivers serious volume while staying true to the music. III

*Jason Blum's current endeavors are focused on commercial mixing and mastering in his Los Angeles studio.*



Three fixed EQs and one parametric provide plenty of tools for shoehorning the O410s into any acoustic situation.

## Join The Elite.

## Sonnox ELITE

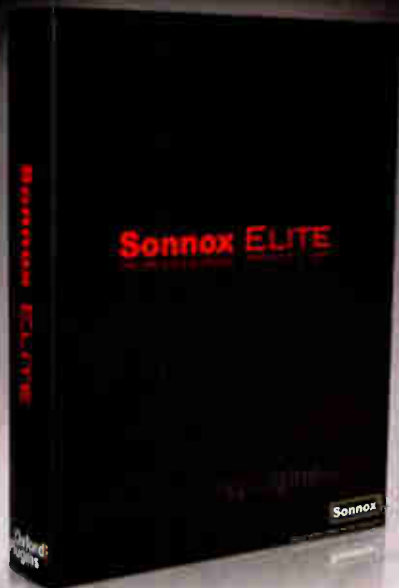
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## SPL Phonitor Headphone Monitoring Amp

### Clean, Revealing System Simulates a Speaker's Soundfield

Mixing with headphones is usually a losing game. It produces an unrealistically wide stereo effect and makes hard-panned tracks sound louder than they are when played over loudspeakers. The result? Mixes executed using headphones don't translate well to other systems.

SPL's Phonitor attempts to correct headphone monitoring problems so that mixes will translate well to loudspeakers. The unit's controls aim to re-create a loudspeaker-style soundfield while the user is listening to headphones. The system also offers a few other functions that are of great benefit during mixing and mastering.

#### Head Trip

More than just a pretty face with a sturdy body, Phonitor incorporates SPL's proprietary Supra OPs 120-volt discrete op amp technology, yielding 150dB dynamic range and almost immeasurable THD.

A typical setup is to route the "control room" outs from your console or DAW monitoring station to Phonitor's XLR inputs. Its XLR outs connect the system's pass-through signals to your powered monitors or power amp. A large volume control adjusts the output routed to the headphone jack. A Dim switch attenuates headphone-output level by 20 dB. Backlit left/right VU meters display switch-selectable VU or PPM output levels. Another switch reduces the meters' sensitivity by 6 dB to allow hotter input without pinning the meter needles. Other switches are provided for solo, left- or right-channel phase reverse, and to select stereo or mono monitoring.

Three six-position switches—labeled Cross-

feed, Speaker Angle and Center Level—adjust the soundfield to resemble speaker playback. Crossfeed adjusts the interaural level difference of left and right channels, essentially mixing a little signal from each channel into the other. Speaker Angle tweaks the interaural time differences of left/right channels to simulate monitors placed 15 to 75 degrees to the listener. As Crossfeed is increased and Speaker Angle is decreased, stereo width is decreased and the phantom center image gets louder. To compensate for this and restore balance, the Center Level control can attenuate the center image volume. Center Level has its own bypass switch, while Crossfeed and Speaker Angle can only be bypassed together.

#### Now Hear This

I connected Phonitor to my Yamaha 02R mixer and AKG K271 'phones and listened to various stereo mixes. With the Crossfeed, Speaker Angle and Center Level controls bypassed, the sound was extremely detailed and open, and the spectral balance very smooth. Headphone levels were plenty loud, even with the volume control attenuating the input 28 dB.

Increasing the Crossfeed made the sound more monophonic. Decreasing the Speaker Angle setting made the stereo image narrower but retained its stereo separation. Using these controls with the Center Level control, I could mitigate the 'phones' super-stereo effect and adjust the level balance of panned and center elements of the mix so it more closely resembled listening to my near-fields.

That said, the result didn't sound like listening to my monitors in a room. Most noticeably absent from Phonitor's reproduction was the sense of depth one

gets from listening to speakers in an acoustic space. And, of course, no system can possibly divine and re-create the unique coloration my specific reference monitors—and acoustic room treatments—impart. But Phonitor did put the levels of panned and center elements into proper perspective.

Out-of-phase LF elements in a mix (such as kick drum and bass guitar) are often the cause of thin-sounding mixes. Setting the Phonitor to mono, I could check the phase of center-panned elements of my mix by reversing the phase of the left or right channel. Such a setup monitors the "difference" signal (that which is not common to both channels). As long as all stereo effects are momentarily bypassed, any mono signal that is panned to dead-center should completely disappear in this setting, which should also reveal any distortion caused by A/D or D/A converters clipping.

#### Phone Home

If you must mix using headphones, Phonitor should decrease any balancing level mistakes. The system's mono, phase and solo functions make phase problems and distortion readily apparent in a mix. In fact, the unit's pristine sound is very revealing in all setups. While the price tag is somewhat steep, anyone who mixes or masters should find Phonitor a useful addition. III

Mix contributing editor Michael Cooper has written more than 300 articles about pro audio during the past 20 years.



Phonitor's Crossfeed, Speaker Angle and Center Level controls provide ways to simulate a speaker's interaction with a room.

#### PRODUCT SUMMARY

**COMPANY:** SOUND PERFORMANCE LAB (SPL)  
**WEB:** www.spl-usa.com  
**PRODUCT:** SPL Phonitor  
**PRICE:** \$2,149

**PROS:** Excellent sound quality. Solid construction. Helps avoid level imbalances when mixing with headphones. Reveals hidden phase problems and distortion.

**CONS:** No TRS I/O. Pricey.



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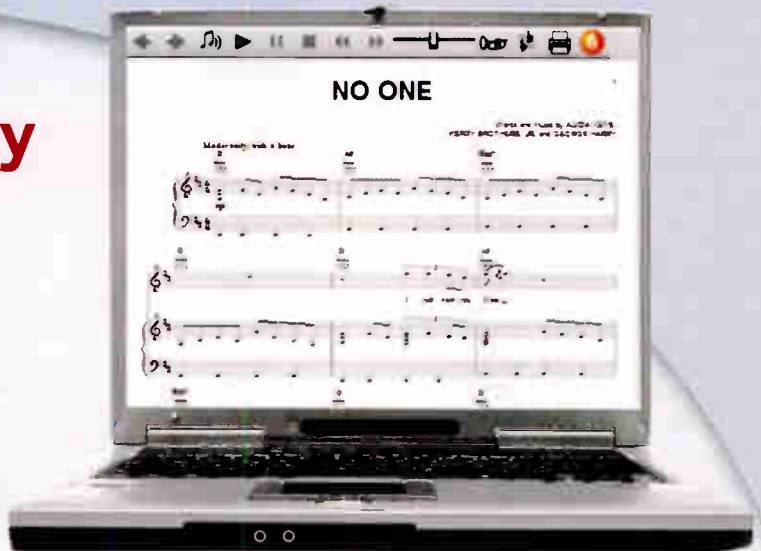
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## IK Multimedia StompIO

### Floor Controller/USB Interface for AmpliTube Modeling Software

Many DAW users are already familiar with IK Multimedia's AmpliTube™ software modeling plug-ins for processing guitar and bass. IK's new StompIO kicks it up a notch by offering a combo USB interface/controller that provides the flexibility and vast parameter control of these plug-ins to the performing or recording guitarist, as well as the project studio where space is scarce.

StompIO must be used with a Mac or PC host computer; it does not function as a stand-alone processor. StompIO comes with five "Powered by AmpliTube" modeling programs: AmpliTube 2, AmpliTube Jimi Hendrix, AmpliTube Metal, Ampeg SVX and AmpliTube X-Gear. When using StompIO, X-Gear provides more than 49 stomp boxes, 26 amps, 37 speaker cabs, 22 rack effects and 21 mic configurations on two separate guitar "rigs."

X-Gear is also required as the audio I/O manager, to and from the StompIO. The StompIO input is a single 1/4-inch jack for your guitar; outputs are stereo unbalanced -10dBV 1/4-inch and balanced +4dBu TRS for connecting to a balanced house system or an unbalanced on-stage guitar rig. Headphone outputs are provided, but there's no separate headphone volume control. A coaxial S/PDIF record output supports standard sample rates up to 96 kHz with



StompIO's interface supports up to six external controller inputs, including expression pedals and footswitches.

24-bit resolution. MIDI I/O jacks let the user control other MIDI devices via the StompIO or vice versa. Six external controller inputs accept expression pedals (one is included) or footswitches, all assignable to the user's preferred parameters. Wah, volume, rotary speed, chorus depth, echo time and echo feedback are just a sampling of what can be done simultaneously. A 1/4-inch, line-level direct output bypasses all effects for recording a dry signal directly to the DAW.

#### The Real Test

The real test in any guitar-oriented modeling system is the elusive "feel." Does it respond like cable directly going into an amp? For live performance, latency is simply not acceptable. The default setting for buffer size was 512 samples, which is far too much latency to be acceptable. I tried 256, 128 and 64, with 64 being the obvious choice. The system was stable at 128 and 256, but latency was subtle yet noticeable at the lower, and more so at the higher setting. I was pleasantly surprised to note the 64 setting's feel; it was quite good and very realistic in comparison to working the tubes of, say, a highly responsive amp like a Vox AC30.

I did have a couple of glitches. First of all, my system configuration was a dual 2.5GHz PPC Mac G5 (OS 10.4.11) with 4 GB of RAM. On initial launch, a deadly stream of digital noise emanated for apparently no reason. Luckily, I was listening at low volume. I quit, restarted and relaunched. After playing for about 10 minutes at the 64-sample buffer size, I got the dreaded "You must restart computer" screen. Okay. Restart—everything's fine. Ten minutes later, I got the same thing; the gray screen of Restart. Next time around and from then on there were no problems. IK Multimedia does state that "...only a very fast Mac with a perfectly optimized configuration will deliver a stable performance with such a small buffer size, so this value is not advisable during a live show."

IK Multimedia is pushing the envelope for guitarists, both as session players and recordists themselves. It comes with plenty of great sounding software and includes Mackie Traktion for the first-time DAW user. There's a definite learning curve involved. But if you want to move beyond the "put on that workshirt, pick up that guitar and tell it like it was" world of minimalism, then prepare to spend many, many hours with your newfound friend. III

*Bobby Fraiser is an engineer, consultant and guitar player for Beatles cover band Marmalade Skies.*

#### PRODUCT SUMMARY

**COMPANY:** IK MULTIMEDIA

**WEB:** www.ikmultimedia.com

**PRODUCT:** StompIO

**PRICE:** \$899

**PROS:** Unbelievable ability to adjust software parameters. Money-saving interface onboard. Cool accessories. Available as hardware only, if you already own the software. Mackie Traktion, Samplertank 2, 1-RackS EQ included.

**CONS:** Wall wart PSU. No separate volume control for headphones. Controller only, no internal software for stand-alone use. Only works with AmpliTube software.

# MIX NASHVILLE



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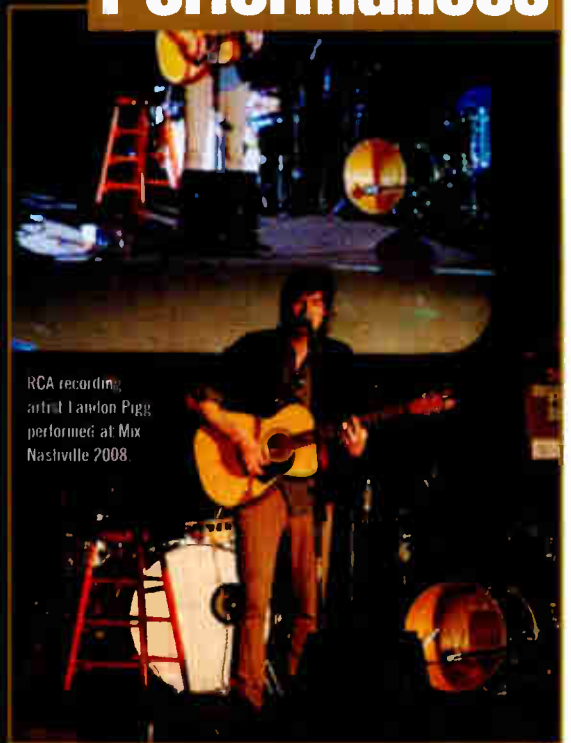
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## People



Grammy winners Chuck Ainlay and Lee Ann Womack participated on the *The Anatomy Of A Hit* panel at Mix Nashville 2008.

## Performances



RCA recording artist Landon Pigg performed at Mix Nashville 2008.

## Technology



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## McDSP FutzBox Plug-In

**Lo-Fi Distortion/Trasher Effect Offers a World of Noise**

Noise and distortion have become the sound producer/engineer's friends! Used in the proper context, distortion and noise can place a vocal or instrument track in a soundscape familiar to the listener. For film/TV work, post-production mixers often chain distortion/noise processors to tailor dialog to fit the scene's action, mood and location. And the right noise/distortion vocal treatment can reinforce the meaning, mood and presentation of a song's lyrics.

McDSP's FutzBox is an all-in-one distortion, noise generator, low-fidelity processor and speaker-sound modeler that accomplishes the work of several processors usually required for distortion/noise treatments. Available as TDM or RTAS format for Macs and PCs, FutzBox offers up to seven sections to create just the right amount of desired noise and distortion to otherwise perfectly good recordings.

### Seven Futz Sections

The seven Futz sections are fixed in order and follow the order of typical outboard chains used in post-production. The order is: Filter, Distortion, EQ/Filter, Simulated Impulse Responses, Gate and Lo-Fi. The Noise Generator signal is added before the SIM section, with the latter setting FutzBox's "mood" by processing the sound as if it were coming through your choice of more than 160 devices, such as home stereo speakers, car radios, guitar amps, telephones, pipes or tin cans.

The library of SIMs is organized into 13 banks: cell phones, containers (trash cans, buckets, etc.), ear buds, headphones, radios, small electronics (boom boxes), speakers, telephones, televisions, toys, vehicles, wireless (walkie-talk-



FutzBox offers a variety of controls for managing the noise generator, speaker modeler and other lo-fi effects.

ies and CB radios) and other (guitar amps, hoses and answering machines.) Each SIM is unique and a Tune control adjusts parts of its algorithm, resulting in different effects depending on the SIM—sounding sometimes like it's a phasing control and other times changing the resonance of a filter.

The Lo-Fi section downsamples audio. Three sliders control the sample rate: Down (as low as 1,336 Hz), Filtering (lowpass to roll off the aliasing noise—or not) and Bit Depth (24-bit down to horrible sounding 2-bit audio).

The Filter section has controls for two high- and lowpass resonant filters, both with 20 to 20k Hz ranges. There is a choice of 12 or 24dB/octave curves and variable Q values numbered from 0 (broadest) to 100 (sharpest). The shape of these filters' action is shown in a large display along with the separate input and output meters.

The EQ/Filter section has a Mode switch that changes it to a single-fre-

quency parametric, or high- or lowpass filter. You can boost/cut up to 12 dB with adjustable Q.

The Distortion section adds grunge and filth using ten different "modes" or presets with evocative names like Stun, Nuke and Clip. The Amount knob controls the level of distortion; Intensity changes tone; and Rectify "chops" off the negative-going part of the waveform in a controllable way. Rectify has the effect of reducing most of the low-frequency content, while adding more fizziness—sounding like a cheap fuzz pedal.

The Noise Generator section makes broadband continuous white noise and works together with the Gate section. NG adds background hiss to bolster realism for walkie-talkie or radio and space communication effects. You can "sculpt" the noise's spectral bandwidth with 20 to 20k Hz high- and lowpass filters. The shape of this filter is shown in a separate graphic below the Filter/EQ/Filter graphic.

The NG's Duck function causes the hiss to be reduced to any level (Range) whenever audio

### PRODUCT SUMMARY

**COMPANY:** McDSP  
**WEB:** www.mcdsp.com  
**PRODUCT:** McDSP FutzBox Lo-Fi Distortion Effects  
**PRICE:** \$495 downloadable from www.mcdsp.com

**PROS:** An all-in-one distortion/noise plug-in with seven processor sections that use minimal DSP resources. Exhibits low latency.  
**CONS:** Some controls are tiny and difficult to control with a mouse. No compressor section.

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passes through FutzBox. The user can control the threshold level (Duck Threshold) and how long it takes the noise to come back (Recovery) when audio throughput ceases.

The Gate section is a hyper-sensitive noise gate with Threshold, Range, Attack, Hold and Release controls. It's especially designed to imitate the choppy nature of static and signal dropouts common in cell phone or radio communication audio. The Gate works on FutzBox's entire audio output and reduces the overall noise floor (or not) for extremely noisy treatments.

### Let's Get Futzing

I installed FutzBox into my Pro Tools HD3 Accel rig with no problems; it also works in HD, 003, MBox and Venue D-Show systems. It runs in session up to 96 kHz, although it requires an Accel card to do it. It's iLok-authorized, and there are both stereo and mono versions. All the controls—including the Wet/Dry control—are automatable, so transitioning into a Futz'd treatment can be as smooth as you want. Auditioning is fast; the different SIMs come up instantly

with no waiting time to load impulses.

While mixing a rock record, the producer I was working with asked if I could make the lead vocal sound like it was coming over a bad two-way radio. I used Antique Tube Radio 1 SIM, set the HP/LP filter to 150 Hz and 8 kHz, and the Distortion mode was Sat 2 with good levels of Amount, Intensity and Rectification. The EQ/Filter added "squawkiness" at 1.13 kHz, and the Noise Generator and Gate sections were set so there was constant noise "riding" along with, but just under, the vocal and cutting off when the singer stopped. Adjusting parameters is instant, although the faders for the SIM Tune and the LoFi section are small and a little hard to adjust.

I next trashed a fine drum sound using the Distortion section (Amount at 10.6; Intensity at 37.8), 70Hz highpass filter and a 3.3dB boost at 1 kHz with broad Q. The drum sound went from clean and punchy to sounding to like an overloaded boom box recording.

I liked using the Large Studio Monitor SIM (Tune at 155) to process a direct bass guitar track. I added Distortion (Sat 1 with Amount 5.9, In-

tensity 100 and no Rectify) and a 1.9dB boost at 120 Hz. My direct bass recording got an amp and cabinet—clean and real sounding.

FutzBox provided a credible guitar sound from a direct guitar recording using SIM Guitar Amp 2 (Tune at 122); a 6kHz roll-off in the Filter; Distortion on Nuke with an 89.9 Amount/83 Intensity/11.1 Rectify; and the EQ/Filter set to boost 3.6 dB at 3.4 kHz with Q set to 31. I added McDSP's CompressorBank 1 compressor plug afterward, as FutzBox has no compressor section.

### Noisy Go-To Processor

Destined to be very popular with post-production mixers and sound designers, FutzBox is also a worthwhile addition to any music mixer's plug-in folder. It was perfect for adding analog grease, dirt and vibe to any clean and clear guitar, drum, vocal and bass guitar recording. It's become my go-to plug when I'm stumped—when a track needs something but I'm not sure what. III

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



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## Arsenal Audio By API EQ-R24

### A 1970s-Era Equalizer is Reborn

For a few years in the 1970s, API sales catalogs included equalizers designed and manufactured by APSI, a console manufacturer. APSI eventually folded, but the popularity of its Model 562

power switch and associated jewel lamp conveniently reside on the front panel. Large U-shaped handles are included on the unit's face to aid in transporting the EQ-R24. I/O connec-

at +23 dBu, as my review unit had no trouble handling +26dBu input from my console's mix bus. On full mixes, the EQ-R24's high end once again sounded much sweeter than most other



The Arsenal Audio EQ-R24 offers four bands of equalization modeled after the classic APSI model 562 EQ.

solid-state equalizer endured. API has resurrected the 562's vintage design in the EQ-R24, a new dual-channel equalizer released under the brand name Arsenal Audio.

The EQ-R24's control layout is straightforward and identical for both of its channels. Each channel has four overlapping bands of bell-curve equalization. Separate continuously variable rotary controls for center-frequency selection and boost/cut serve each band. The EQ bands include lows (20 to 200 Hz); low-mids (100 to 1k Hz); high-mids (500 to 5k Hz); and highs (2k to 20k Hz). Up to  $\pm 12$ dB boost/cut is available to each band. The Q for each band is fixed at roughly 0.6 to 0.85 (approximately two octaves), making the R-24 suitable for broad tonal shaping but not for surgical tweaks. None of the rotary controls are detented.

A bypass switch is provided for each channel but not for individual bands. A heavy-duty

power switch and associated jewel lamp conveniently reside on the front panel. Large U-shaped handles are included on the unit's face to aid in transporting the EQ-R24. I/O connec-

### In the Studio

On an acoustic guitar miked with a spaced pair of Neumann KM184s, using the EQ-R24 to boost at 10 kHz and cut at 200 Hz yielded superb results. The high end was remarkably sweet sounding. High-frequency boost on acoustic piano yielded equally impressive results.

I got good results pumping up the low end on kick drum and bass tracks. But the omission of a low-frequency shelving filter thwarted my attempts to get a completely even response down to the very bottom of the spectrum. On pop-rock vocals, cutting heavily at 20 Hz was a good substitute for shelving cut at a higher frequency, cleaning up bottom-end mud. Boosting around 175 Hz and at 3.5 kHz produced a huge, round, sweet vocal sound.

On fiddle, a 6dB cut at 20 kHz reached down to lower frequencies to reduce scratchy highs and was the best proxy for a high-shelving cut at a lower corner frequency.

The EQ-R24's specification for maximum level seems conservatively rated

equalizers I've heard. That said, I missed having Q controls to zero-in on narrow frequency bands, a highpass filter to remove rumble, and high- and low-shelving filters for the most even treatment at each end of the spectrum. The omission of output gain controls also forced me to recalibrate downstream A/Ds to obtain optimal levels. But such a minimalist design is no doubt partly responsible for the EQ-R24's pristine sound.

I found the EQ-R24 to be most adept at sculpting the tone of individual tracks, but good results can also be obtained processing full mixes. Having four overlapping bands of bell-curve filters per channel and swept frequency controls promise great flexibility. But the omission of shelving, lowpass and high-pass filters and Q controls makes it harder to fine-tune the sound of tracks needing subtle adjustments. Despite these practical limitations, the EQ-R24 is a great tool for broad tonal-shaping purposes. You'll be hard-pressed to find an equalizer with such a sweet-sounding high end at this price. ■

Mix contributing editor Michael Cooper is the owner of Michael Cooper Recording in Sisters, Ore. Visit him at [www.myspace.com/michaelcooperrecording](http://www.myspace.com/michaelcooperrecording).

### PRODUCT SUMMARY

**COMPANY:** ARSENAL AUDIO BY API

**WEB:** [www.arsenalaudio.com](http://www.arsenalaudio.com)

**PRODUCT:** EQ-R24

**PRICE:** \$1,195

**PROS:** Exceptionally sweet high end. Four overlapping bands. Continuously variable frequency selection. Channel bypass switches. Reasonably priced.

**CONS:** Only bell-curve filters are offered. No Q controls. No individual band bypasses.

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## Tape Echo Revisited

May the (Magnetic) Force Be With You

A year ago in this space, I mentioned two tape-based delay units: a Roland Space Echo and a solid-state Echoplex. Both rely on something in rare supply these days: magnetic recording tape—and not just any tape will do.

Back when professional tape was plentiful, I confess to replacing Space Echo endless loops with whatever was readily available at the time—Ampex 456 or 3M 250. My logic wasn't exactly sound. What's good for a pro machine will initially work in a tape-delay box, but over time there are consequences, like friction that accelerates head wear and causes drag on the capstan and pinch roller. Pro audio tape is thicker and less flexible than the thinner, more specialized version used to get that authentic "Be-Bop-a-Lula" tone: 1-mil thickness compared to 1.5 mils (1 mil = 0.001 inches).

The RE-301 Space Echo has six heads (erase, record and four staggered playback heads) so a little additional friction per head adds up—each head will wear more than the one before it. For example, 1.5-mil tape exits the bin at 0.5 ounces of tension (that's before playback head PB-4 in the figure below) vs. 1.9 ounces of tension after PB-3. Contrast this with 0.2 ounces



stantly moving against each other—a graphite back-coating was added. The same magic made 8-track cartridges possible. The Echoplex Sireko and subsequent Space Echo models employed the more forgiving "bin loop" alternative that eliminated tape-to-tape friction, but all relied on a felt pad to maintain tension for consistent tape path and tape-to-head contact.

You'll know that friction took its toll on the heads when performance becomes inconsistent (drop-outs) or exhibits diminished high-end response. The radius or curved contour of the head face becomes flattened over time, reducing the tape-to-head contact pressure.

Head contour can be restored by "politely" sanding away the non-worn areas until they're level with the worn area, after which the radius can be restored. Called "lapping," the process begins with fine sandpaper—like 500 or 1,000 grit—followed by successively finer grades of "lapping film" that end up more like the texture of paper than sand for polishing.

### Cinque Terre

When working on *any* tape machine, the first step is demagnetizing all tools that will be in contact with the head assembly and surrounding areas. As the machine in question had head-height issues, I ballparked the height *first*, before disassembly. As you can see in the figure, three screws on each head mount allow head movement in every plane—front and rear height adjustments affect "zenith" (front-to-back tilt), azimuth sets the side-to-side tilt. All playback head gaps must match the azimuth of the record head. And the erase, record and playback heads are application-specific and are not interchangeable.

In an ideal world, a set of mechanical reference blocks and a test tape would be used to set the mechanical parameters. In lieu of such tools, note the pair of brass stand-offs that fit under the head-mounting plate (in the figure, to the right, under PB-4). The distance from deck top to plate bottom is a wee bit more than 0.185 inches. With the stand-offs as reference, getting the lapped heads back into position should require only minor tweaking.

Wires exit the rear of Echoplex heads and must be unsoldered at their destination. Space Echo heads have terminals to which wires are tack-soldered. After the heads are disconnected, their mounting plates can be re-

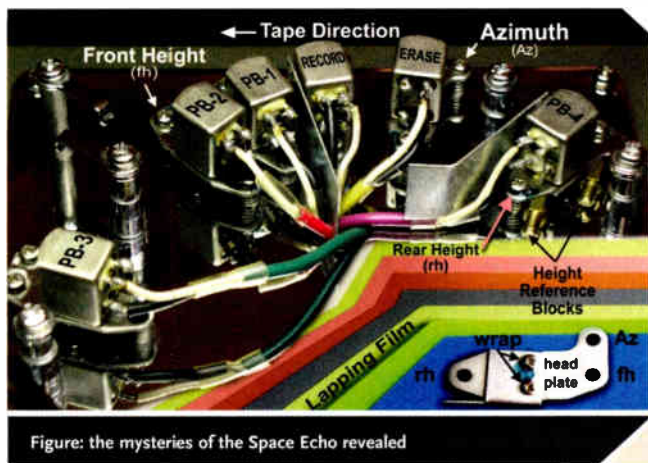


Figure: the mysteries of the Space Echo revealed

of tension pre-PB-4 and 0.4 ounces post-PB-3 for 1-mil lubricated tape. To a tape head, that's a huge life extension. Compound the excess tension of 1.5-mil tape with the inappropriate use of a screwdriver, and you've got a head assembly with multiple wear patterns.

### A Lá Cart

There are two basic types of endless loop tape systems: cartridge and bin. All but one Echoplex model used the former, as did the first-generation Space Echo. To reduce the friction of tape against tape—all layers con-

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moved from the deck (lower-right corner of the figure) and the head unscrewed from the plate. These two screws also affect head wrap—centering the head's gap at the point of contact to optimize high-frequency output. I used a Sharpie® to outline the head position before removing it from the plate. If the heads are not centered, observing the wear pattern can guide in the process of ballparking the new head position.

After the heads were made smooth, the steps were all reversed, with the figure serving as the wiring reference. To confirm the coarse mechanical alignment, the head face is "painted" with a Sharpie ink that will be worn away by tape travel, revealing whether the zenith is correct and how well the head gaps and height are centered.

Once the mechanics were ballparked, an azimuth test tape was made on a calibrated 2-track deck, recording pink noise at 7.5 ips. The tape was then spliced into a loop. (Note that the erase and record heads were left disconnected so the playback heads could be adjusted. The Space Echo's Mode switch allows monitoring each playback head separately.) Assuming all other mechanicals are correct, getting the azi-

## AUDIO SCIENCE

### CALCULATING DELAY TIME

Tape-delay devices can add some creativity to your productions. It's also easy to make single-delay effects using any pro analog recorder—a great way to put an old 2-track to use. But what's the delay time? If there's a 2-inch spacing between the record and play heads and the tape speed is 7.5 ips, then the delay is equal to 2 divided by 7.5 inches/sec = 0.266 sec or 266 milliseconds. At 15 ips, that amount would be halved for 130 ms. For more variations, use the varispeed control to increase/decrease the delay time. And for more outré regeneration effects, try mixing a small amount of the delayed signal back into the record input.

—Eddie Ciletti

imuth right is as easy as adjusting for the brightest pink noise. There's only one right way and it will be obvious. After the playback heads were tweaked, the record and erase heads were connected, and pink noise was injected so the record azimuth could be adjusted.

Optimizing a tape machine poses a fun set of challenges that minimize the negative aspects of working with analog tape so you can enjoy the positives. It's not just the sound of tape and saturation or speed variations that create

a subtle chorus effect, but the ability to infuse emotion into an effect in real time. For some reason, digital versions of analog effects rarely have knobs. And while the precision of increment/decrement and the ability to recall and automate are awesome, the power of a simple, real-time human interface is an important part of the emotional equation. III

For more Eddie Ciletti, visit [www.tangible-technology.com](http://www.tangible-technology.com).

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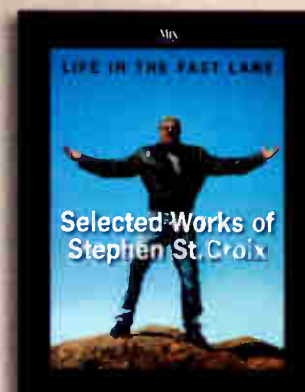
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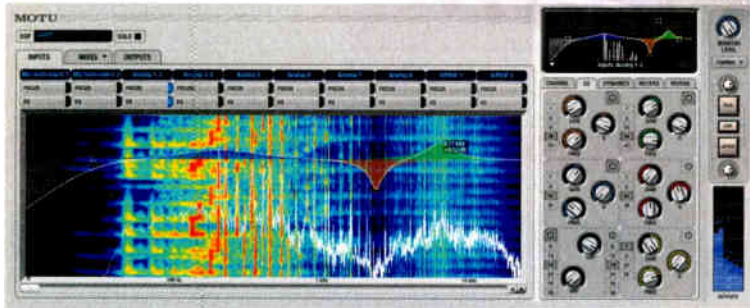
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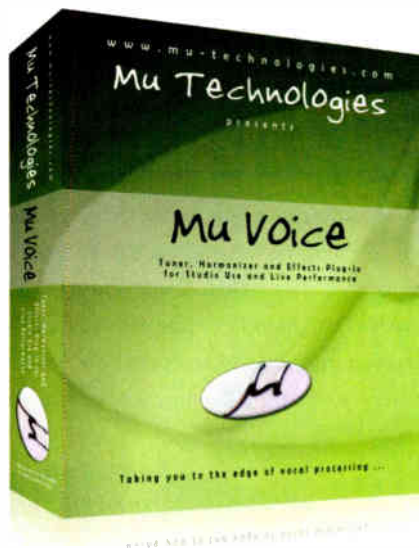


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## Shure KSM 44 Multi-pattern condenser mic

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



## Dangerous Music D-Box Killer analog summing & monitor management

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







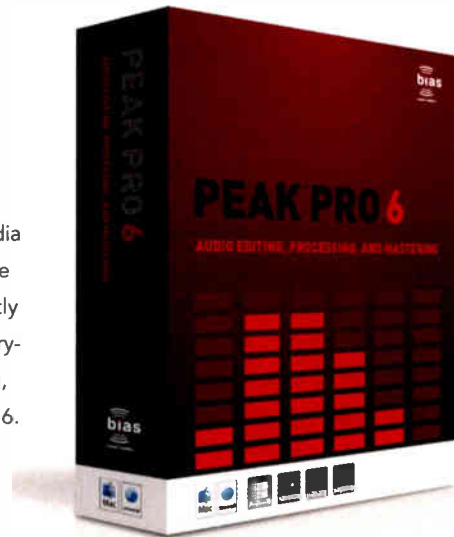
## Ocean Way Drums from Sonic Reality The premiere virtual drum instrument

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

## BIAS Peak Pro 6

### Evolution of an award-winning standard

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



## MOTU MachFive 2

### Crossgrade offer for GigaStudio Owners

With unmatched sound library compatibility, industry-leading features and award-winning design, MachFive 2 is the universal sampler of choice for professionals worldwide. If you are an owner of GigaStudio, Kontakt, Structure, SampleTank or other eligible virtual sampler product, you can now upgrade to MachFive 2 for only \$295. Call Sweetwater today for details.

## PreSonus Studio Channel

### Channel strip with class A vacuum tube preamp

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



# Enhance your MOTU desktop studio experience

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



## Mackie Control Universal Pro

The most complete control surface for Digital Performer

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

## Mackie HR824mk2 Active Studio Monitors

Premium performance to perfect your mix

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



**Sweetwater**

Music Instruments & Pro Audio



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World Radio History

## Roy Clair

Semi-retired audio fanatic Roy Clair started out experimenting with sound in his garage and went on to co-found one of the world's largest sound reinforcement companies, Clair Bros. (now Clair Global).

**What was it like for you starting Clair back in the '60s?**

Back in those days, there wasn't a [sound reinforcement] industry. People didn't do tours; they just did buildings. So if you had five or six colleges, etc., close to you, you did sound for those facilities. And then in 1966, the Four Seasons took my brother [Gene Clair] and me on the road with them, and that was the beginning of our business as a touring sound company. [That experience] was surreal—we kept pinching ourselves because we didn't think anyone could have this good of a time working. As the slogan goes, it certainly didn't seem like work. If one could turn their hobby into their occupation, it really helps because you're doing something you really want to do. And then working for entertainers is exciting, gratifying!

**After more than four decades in the biz, you've seen some incredible changes. What has been the most striking?**

In the financial area, where it got very businesslike about 15, 20 years ago. The groups more or less gave control to the accountants and that changed business somewhat. Instead of selecting companies because they may be better, perhaps it could have been about the price. Production managers are usually making the decisions and they have a lot of experience in the business so it doesn't all translate into a per-week price, because in some instances some companies take less time to get in, get up, get out. Production managers

know who they can rely on as far as saving money while touring. So what comes in as a per-weekly isn't always the overall consideration. Sometimes it translates into production managers' knowledge of who can save them the most money by taking less space and going up faster and getting out quicker.

We're extremely lucky because we're positioned globally—there were times when groups didn't like the fact that they had to ship their gear from one country to another. Now, most companies have satellites and offices abroad, so we're saving money by virtue of having equipment on all continents. Everyone takes that for granted, but it happened rather quickly and went unnoticed. Smaller, more powerful amplifiers increased sound system wattage, and speaker manufacturers increased the power handling capability of the transducers, allowing greater power in a smaller area.

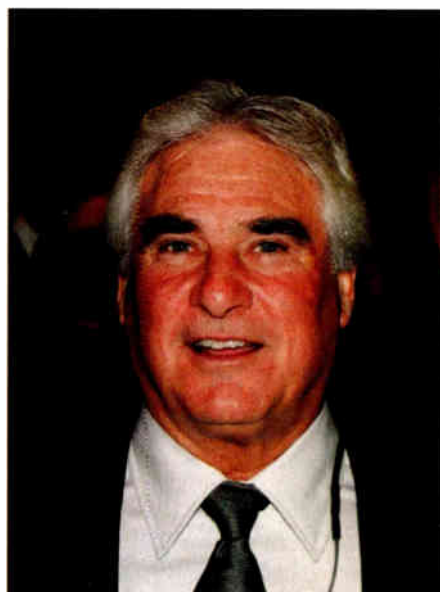
The line array was a big change, going from large hanging arrays to line arrays. I think it helped and was a good change. "Smaller, more powerful" seems to work better because it doesn't take as much trucking. The industry is very sophisticated with its trucking, its busing, catering, lighting, sound and video. Obviously, the industry has gotten better because of technology.

**Lately, the biggest issue in live sound concerns wireless technology and the use of white spaces. What are your thoughts on this?**

Well, it's going to affect everyone so it's not like one of us is in the wrong boat. As always, there is a Plan B. In some cases, wireless is very popular, but if a problem arises, I'm sure cable can come back into play without creating a catastrophe. For Broadway, it's a bit more critical, but for rock 'n' roll, entertainers used to use cables, so there's no reason why they can't go back to cables in the event that wireless is out. Obviously, everyone's going to have to adjust. There's always Plan B—whatever that is.

**Now that you're semi-retired from Clair, how do you keep your love of audio alive?**

Years ago, Clair Bros. started another com-



pany—Clair Bros Install division—to allow employees who'd come off the road after "X" amount of years and started families to stay in the sound business by installing sound equipment in facilities. I'm at the age where I don't want to travel either, so this lends itself to being able to stay at home and engineer for an install. What we've been doing over the last 42 years [at Clair, touring] is translatable to the install business, with the capability of getting the system in quickly. The expectation we've had over the years in setting up equipment quickly translates into an install business where those people don't want to spend a lot of money or time installing equipment, so we're developing equipment that cuts down on time to get it in. I've been having fun helping that division. Am I not lucky?!

**After all these years in the business, what piece of advice would you give to up-and-coming engineers?**

I'll make it simple: Don't think about money, just do the job. I know that sounds trite, but nevertheless it works. The money will come, just do the job. III

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



# STUDIO SOVEREIGNTY

The m906 is our remarkably full featured 5.1 or stereo monitor controller. With transparent, musical performance, the m906 reveals even the most subtle, critical sonic details to empower you with total control over your mix.

Ultra-precision D/A converters ensure incoming digital signals are perfectly rendered to analog, while purist analog circuitry handles all signals with audiophile accuracy, resulting in a perfect translation of your mix to the monitors.

The m906's full complement of I/O can be completely user calibrated, and elegant digital and mechanical ergonomics ensure an effortless work flow and seamless integration into any audio production environment. Recording, mastering, film, broadcast or post—the m906 is in control.



for complete details, please visit [WWW.GRACEDESIGN.COM](http://WWW.GRACEDESIGN.COM)



# TRAVELER<sub>mk3</sub>

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



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



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

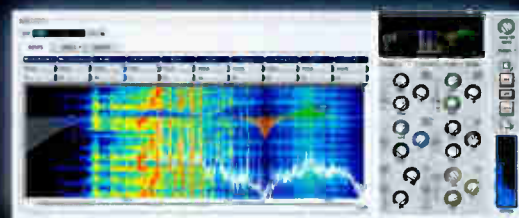
- **Flexible operation** — equally well-suited for studio, stage and remote locations, with or without a computer.
- **Overload protection** — Four combo jacks provide true hi-Z 1/4-inch guitar input or low-Z XLR mic input with 48V phantom power, pad, gain and hardware limiter to prevent clipping
- **28 x 16 digital mixer with vintage effects** — Includes reverb with sends, plus EQ & compression on all ins/outs.
- **Flexible digital I/O** — AES/EBU, S/PDIF and configurable optical I/O: 16 channels of ADAT lightpipe, 8 channels of SMUX (96 kHz) or 2 stereo TOSLink (mix/match formats).
- **SMPTE and MIDI time code sync** — no separate synchronizer needed.
- **Stand-alone operation** — a complete mixer with effects. Adjust any setting quickly with intuitive LCD menus.
- **Drivers for Mac and Windows** — Works great with your favorite software.



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



Comprehensive metering with accurate ballistics.



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

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

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