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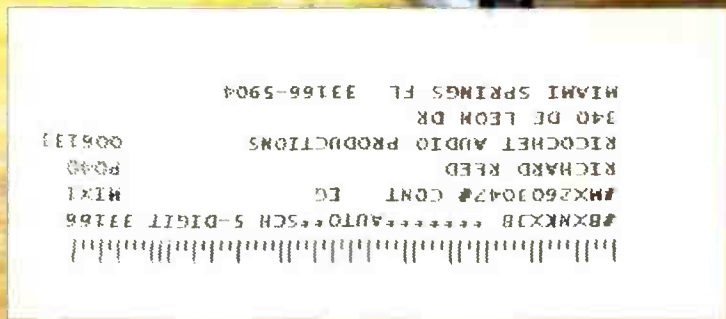
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## Spinal Tap

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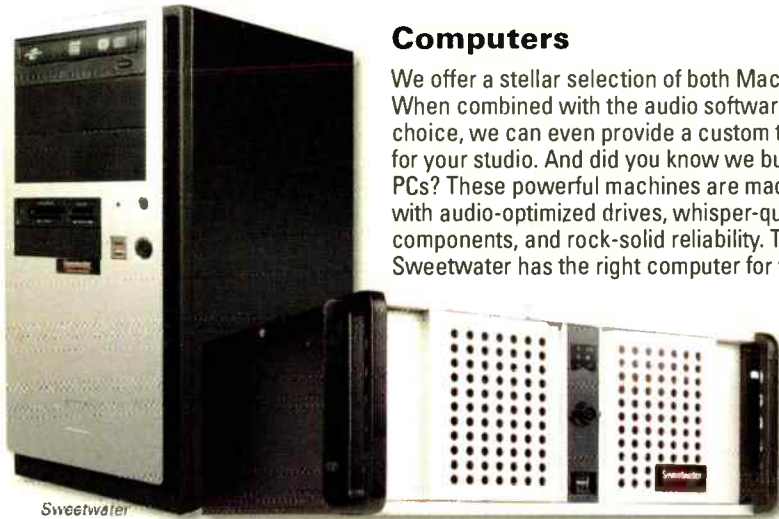
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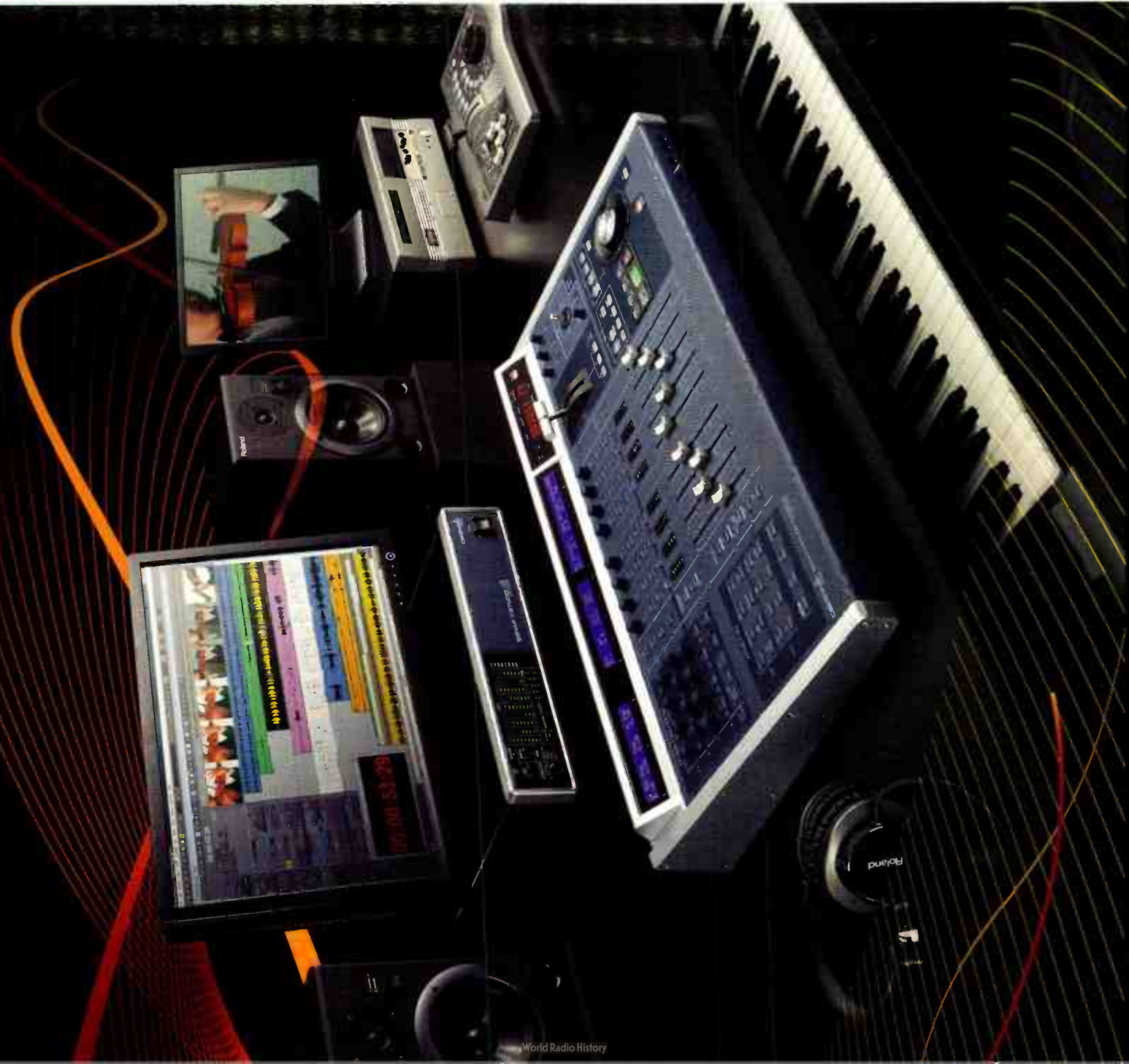
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## Community Involvement

“ Spinal Tap played the Ryman last night. How messed up is that?” producer CJ Vanston says with a laugh, driving over to Blackbird Studios on one of his many Nashville stops to see old friends. “It was a sign of the Apocalypse! Tap at the Ryman? Think about it. Just too bizarre, but it felt perfectly right.”

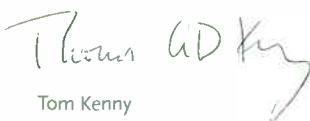
Okay, so it wasn't Spinal Tap. It was Christopher Guest, Michael McKean and Harry Shearer—Unwiggled and Unplugged—performing the material a generation came to know and love, along with some new tracks from this month's release, *Back From the Dead*. You can read all about the making of the album in this month's pages, and you can watch some exclusive material at [mixonline.com](http://mixonline.com). As you do, think about these guys—much as their characters might dispute it—as the embodiment of today's music industry. They are living what we talk about.

There's a tour leading the way, they're '80s rock stars reborn, there's a record release and cross-country promotion. There's big, loud guitars and quiet, acoustic emotion. There's a 25-year anniversary, and there's even a drummer who might last the year. And then behind the scenes, there is an intelligent, well-laid-out plan to distribute the music, the message and the goods. While we're not exactly expecting a Spinal Tap videogame for the holidays, it wouldn't surprise anyone to soon hear “Big Bottom,” “Stonehenge” or “Sex Farm” screaming—loudly!—out of *Rock Band* dens or *Guitar Hero* garages in the not-too-distant future.

And then talk about built-in community—the province of Facebook, MySpace and Twitter—the Tap has it in spades. So when it came time to seek financing, rather than fall back on the conventional label route, the members of the band self-financed the production and struck forward-thinking deals for their label imprint, The Label Industry Records, most notably with A2M (Artist to Market) for physical distribution and INgrooves for digital distribution and marketing across any and all digital media platforms, including mobile.

Of course, there's a deluxe physical version due out June 19 in diorama form, complete with bonus video commentary on each song, pop-up action figures and a proportionally sized Stonehenge. There will be radio performances and late-night TV, probably even a morning show or two. The traditional routes. But the real action will be watching the social networks and the digital downloads during the next few months. While Tap's existing community may not include the 16- to 24-year-old demographic we so often associate with viral marketing, it's important to remember that last month, Facebook announced that its fastest-growing segment by far in 2009 is men and women ages 35 to 54—a tailor-made demographic for the band. And who wouldn't sign up for Tap Twitter?

In the rush for new music-business models to counteract declining physical sales, the industry needs to take into consideration that not all acts are created equal. Established artists with established community may have a leg up on emerging artists, but that doesn't mean they can sit back and simply do things as they've always done. By pushing forward and making deals where they may not have looked before, Tap got the word. Let's see how it works out.



Tom Kenny  
Editorial Director

## MIX

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## Sign O' the Times

Just got my May issue of *Mix*! Amazing to see such full disclosure in the editorial page ("From the Editor: Who Has the Answers?") describing the departure of editor Sarah Jones.

It's a real shocker to see someone actually come out and say it—in print at that. What a bold move.

The interview with [*Wired* editor] Chris Anderson was dead-on, although nothing anyone didn't know already—just surprising to see it in print, laid bare for anyone who still hasn't gotten the memo. I too am part of the "long-tail" experience. Many of my clients have been with me for more than a decade now (some longer) and it works in a similar way for me. Nobody sells a lot of stuff, but I have their archives, their recent stuff and, for most of them, their entire CD catalog. They come back as they need to, a bit at a time, when they need stuff. For the choirs and orchestras, it's safety in numbers. One local client, now all but retired, is working on his "box set," as we call it. He comes in every few weeks and works on his archives, putting stuff onto CD, cleaning it up, etc. He won't be done for

years at the rate he's working.

I know *Mix*'s thrust is more at the high-end "pro" level, but if you ever want to do a story on life in the trenches, at the grass roots level of classical, jazz, opera and choral music, I've got it all here.

Joe Hannigan  
Weston Sound  
Philadelphia, Pa.



## The Value of Free

The *Mix* May 2009 feature "Getting the Music Noticed" concludes by asking, "Have any of your projects benefited from the model of giving music away as a 'freemium'?"

I liked your article on this topic. I give away my single, "Song for Free," which is about being a free song ([www.ToddLerner.com](http://www.ToddLerner.com)). This works to my advantage in that this song and others on the album have been played on podcasts worldwide.

Here's a link to a four-minute sampling of my songs played on podcasts in Japan, England, Sweden, Germany, Alaska to Hawaii, New York to Vegas, New Zealand, Poland and Jordan: [www.songforfree.com/todd\\_played\\_worldwide.mp3](http://www.songforfree.com/todd_played_worldwide.mp3).

Todd Lerner

The "freemium" has enabled

me to increase my database of names and e-mail addresses to help me market my music to more listeners. I am beginning to take in revenue as the people in my database become paying fans.

A track that I produced, entitled "You Already Know" by David Rush of Universal Republic Records, was recently placed on MTV's *Rob Dyrdek's Fantasy Factory*. My database of fans started purchasing the track for \$1 from my Website ([www.ElieMaman.com](http://www.ElieMaman.com)). Not only am I generating income for the track, at the same time, my fan base/database is growing as I gather all of the name/e-mail addresses. I have already sold a couple hundred downloads within only a two-week period.

Elie Maman  
Elie Maman Productions

## Shall I Compare Thee

In *Mix*'s May 2009 issue, we

asked readers to tell us how they listen and A/B their tracks to get the most translatable recordings.

I mix primarily on a pair of JBL LSR4326Ps. The fact that they have the built-in RMC (Room Mode Correction) function serves to help even out some bumps in my otherwise pretty well-tuned project studio. While I use the JBLs as the primary monitors for mixing, I have several other speakers connected for making comparisons.

I track most often using a pair of Mackie HR624s, and I also use them as another mixdown reference. I'll engage a subwoofer sparingly to see what's going on with the low end. From there it

gets interesting.

I flip my mixdown monitoring around once I get things pretty solid on the JBLs and Mackies and start checking the mix on a pair of older JBL Control One speakers. I also spend some time listening through a pair of Bose satellite speakers (the little ones where the top section can swivel for dispersion). I really like the Bose speakers because they give me a more accurate idea of the sound coming through an average television. As I do a lot of music for TV background material, having the small speakers helps me ensure that the critical elements can be heard in my mixes. I occasionally check on a pair of Yamaha tower home-stereo speakers to get a picture of how the sound will be through the home-stereo environment. Finally, I kick up the mixdown through a small P.A. system comprising two speakers, each with a 15-inch driver and piezo tweeter element.

It sounds like a lot but I can access all monitors with the flip of a switch or two, and since I began using this combination I've had much greater success in mixes that translate into the world. There may be easier ways to accomplish all of this, but I've found that each of the main speakers (the JBL, Mackie and Bose speakers) have their own elements that make them well-suited to hearing what I need to get a good, balanced mix.

John (JD) Stefan  
Catwerk Music III



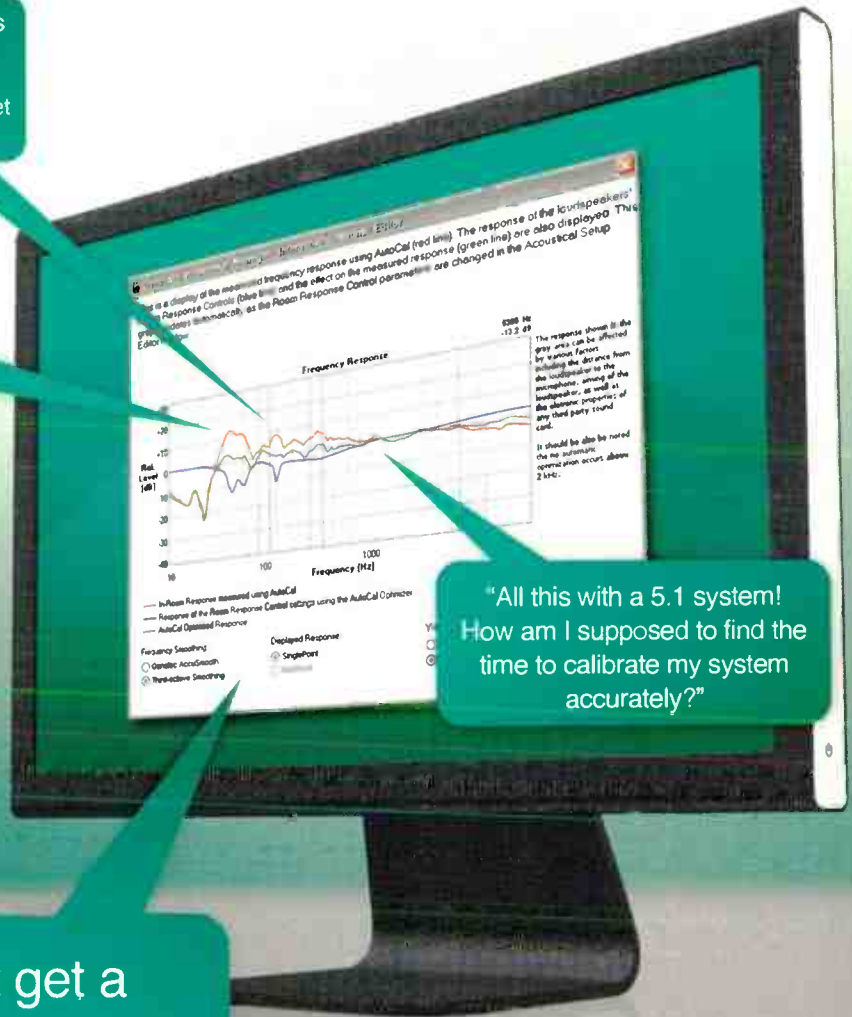
Next month, *Mix* delves into the sound reinforcement world, profiling sold-out summer tours and recently opened mid-sized venues. In your opinion, why are "big" systems going into not-so-big halls?

E-mail us at [mixeditorial@mixonline.com](mailto:mixeditorial@mixonline.com).

# Some Questions are Easy to Answer

"Where do these lumps in the lower midrange come from? Should I move my furniture or get a smaller display?"

"How can I add more bass trapping in my small room to avoid this boominess?"



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# CURRENT

Compiled by Sarah Benzilly

## Oklahoma Pumps Up Music Education



The Academy of Contemporary Music at the University of Central Oklahoma (ACM@UCO, [acm-uco.com](http://acm-uco.com)) will open its doors in August 2009. Confirmed master-class instructors include Lily Allen, producer Greg Kurstin, Tom Biery (Warner Bros.) and Oklahomans the Flaming Lips. Classes will be held at the Oklahoma Warehouse Building off Flaming Lips Alley in Oklahoma City's Bricktown district.


Scott Booker, CEO of ACM@UCO, also heads Hellfire Enterprises, the artist-management company he founded in 1990 whose roster includes three-

time Grammy winners the Flaming Lips. Booker worked with university and state officials to bring the school to Oklahoma City by partnering with the UK's Academy of Contemporary Music.

ACM@UCO is fully accredited by the Oklahoma State Regents for Higher Education and will offer Associate of Applied Science degrees in five areas of study: performance in guitar, bass, drums or vocal, and music production.

Expanded courses of study and a four-year degree program will be offered beginning in 2011.

9.1 million units



—Lil Wayne's "Lollipop," the top-selling digital single of 2008, IFPI Digital Music Report 2009

## NAMM'S Best Communities For Music Education



The 2009 Web-based survey, which took place between January 15 and March 13, asked U.S. education districts questions pertaining to funding, graduation requirements, music class participation, instruction time, facilities, support for the music program and other information relevant to a community's music education program. Responses were verified by district officials, and advisory organizations reviewed the data. Find a full list of schools at [namm.org](http://namm.org).

## seen & heard



*"The music they create appeals to me because it mirrors my own taste. We all lean toward being a little more catchy, but still experimental."*

—Toshi Kasai, engineer/producer *in working with The Melvins*



## GRADUATION!

"Having attended the school for my graduate and post-graduate degrees, I am acutely aware of the depth of talent that passes through the University's halls. It's a great privilege to join Chi-Ming Chang, James A. Edmiston, Shelby Johnson and J. G. Soules as a 2009 Distinguished Engineer Award recipient."

—Harman CEO  
Blake Augsburger on



being a recipient of Texas Tech University's Edward E. Whitacre Jr. College of Engineering Distinguished Engineer Award

*"All I can say to you guys is, whatever gift you have, wherever you got it from, really respect it. Take it and run with it."*

—Stanley Clarké address to graduating students as he accepted an honorary Doctor of Music degree from Musicians Institute (Los Angeles)



**Pete Milbery**  
Neutrik managing director

**Main Responsibilities:** inventory management, quality control, sales and marketing, and overseeing distributors and reps.

**Previous Lives:**

- 1990-2005, various roles at Newark Electronics
- 2005-present, Neutrik Western regional sales manager

**The one thing in my office that best represents my personality is...** right now, there's not much in my office, except an iPod stereo docking station and my laptop.

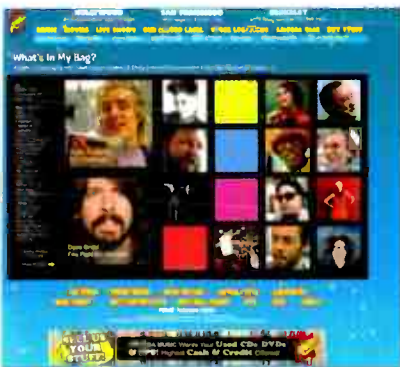
**Currently in my iPod:** Everything. I just checked my hard drive and I have 182 gigs, which is about 32,704 songs.

**When I'm not in the office, you can find me:** likely on a motorcycle or with my dog in the jeep somewhere very remote.



## THAT IS MY BAG

Ever wonder what your favorite artist is listening to? Well, here's one place to find out: [www.amoeba.com/whats-in-my-bag](http://www.amoeba.com/whats-in-my-bag). West Coast music retailer Amoeba's Website shows what musicians, DJs, etc., have recently picked up at the store.



## Industry News

Lab.gruppen (Kungsbacka, Sweden) appointed Ulf Larson to the CEO position...Andrew Duafala is Euphonix's (Palo Alto, CA) new VP of global channel sales; in other news, Audio Agent (Western U.S.) will distribute the company's Artist Series media controllers...News from Loud Technologies (Woodinville, WA): Paul Yue, director of procurement, and Kevin Mahoney, director

of operations, Asia...Paul Tillman and Dave Weidenhoffer, both former L-Acoustics (Oxnard, CA) reps, have come in-house to serve in the newly created regional sales manager positions. In other company news, Jan Nguyen is now sales and marketing coordinator and Annette Bilous joins as administrative assistant and receptionist...New sales rep for HME's (San Diego) Pro Au-

dio division is Darcey Meddings...Greg McVeigh is sales manager for Heil Sound's (Fairview Heights, IL) Pro Audio division. In addition, the company has added Tandem Sales & Marketing (Southern California) and AVA Audio Video Associates (Kansas, Missouri, Iowa and Nebraska) to its rep force...



Andrew Duafala

Darcey Meddings

Ulf Larson

New distribution deals: Midas/Klark Teknik (Burnsville, MN) named Mega Audio for Germany, and Fingerprint Audio (North and South Americas) was tapped by sE Electronics (Dunstable, UK).

# SESSIONS

## Brotheryn Studios—Projects Abound in Bucolic Setting



Brotheryn Studios partners (from left) Jesse Siebenberg, Todd Hannigan and Jason Mariani in Studio B.

PHOTO: DAVID SANCHEZ

niche market.”

Hannigan eventually teamed with an aspiring filmmaker whose father owns a cattle ranch in the hills adjacent to Lake Casitas in Ojai, Calif. The ranch owner supported the fledgling production company by converting an emu barn into a studio—and thus began Brotheryn

Studios ([www.brotherynstudios.com](http://www.brotherynstudios.com)), which today

has five tracking rooms and two control rooms. Brotheryn offers recording, scoring, mixing, mastering and post services in scenic, pastoral surroundings.

When Hannigan's original business partner moved on, he found two new partners: Jesse Siebenberg, a multi-instrumentalist and producer, and engineer Jason Mariani. Brotheryn also employs engineer Justina Powell. “They

made it into more of a professional studio,” Hannigan says, adding that Brotheryn's clients are “an even mix of local musicians to some big international acts.”

Each of Brotheryn's control rooms houses a quad-core Mac Pro and a Pro Tools HD3 Accel system. Monitoring is via Auratones, an EMES Owl System, Genelec 1031As with subwoofer, Dynaudio BM5As, Tannoy System 155, and Yamaha NS-10Ms and NS-500Ms. Its mic closet offers models from AKG, Audix, beyerdynamic, Blue Microphones, Neumann, RØDE, Sennheiser, Shure and more. Outboard gear includes units from Universal Audio, Manley Labs, Millennia, Summit Audio and more.

“We sum when we mix, using a Manley 16x2 and 16 channels of Mytek conversion in our A room,” Mariani says. “Our B room has an Amek Driver in a Box, with a resistor network added to make it a summing amplifier so we can sum in that room, as well. We're looking to upgrade our A room with an SSL

AWS900+ SE. There are 26 tielines between our two mix rooms.”

“Luckily, there's no [outside] noise,” Hannigan adds. “There are thousands of acres around us, so we really didn't have to worry about making it quiet.”

Hannigan produced both of his solo albums, *Volume 1* and *Volume 2: Courtside for the Apocalypse*, at Brotheryn and is working on *Volume 3*. Siebenberg recently co-produced Kenry Loggins' forthcoming release for Walt Disney Records, a children's album called *All Join In*.

“Todd has just produced records for Timmy Curran and Rey Fresco,” Siebenberg says. “Ventura is a hotbed of musical activity right now, and I think it's only going to get better. There's a great pool of talent here, a great management company—the Fitzgerald Hartley Company—and some great music venues. So the stage is set. I'm really happy to be a part of that.”

—Matt Gallagher

# project studio

## Menza Music

Composer/sound designer/engineer Mark Menza had a good thing going when his studio was embedded in DNA Productions, the animation company behind *Jimmy Neutron: Boy Genius*, *The Ant Bully* and more. “But then the partners, John Davis and Keith Alcorn, decided to downsize so I needed to find other studio space here in Dallas,” Menza says.

Menza entered into a co-op-type arrangement with some picture editors who purchased an 8,500-square-foot warehouse and built their own studios, as well as shared kitchen and lounge spaces. To design his setup, Menza retained Mark Genfan of Acoustic Spaces.

“We came up with the arrangement of two medium-sized control rooms that share a cutting room,” Genfan says. “It's in a warehouse district, so there are trucks outside, as well as train tracks down the street. So all three rooms are fully floated and decoupled. We also concentrated on ergonomics and

Mark Menza's new recording/composition studio was designed by Mark Genfan of Acoustic Spaces.

PHOTO: MARK HUNST

## ●● Making Music, Making Change



Engineers Stephen Marsh (left) and Mark Johnson

Me" and "Don't Worry," were mastered by Stephen Marsh in his Hollywood studio. Marsh, who works on a custom tube/discrete hybrid console developed with Steve Firlotte of Inward Connections, says, "I'm honored to really be a very tiny spoke on this project. I get to be part of something that can do a really greater good. It's amazing that they were able to pool resources all the way, literally, from the grass roots of folk music in

Africa all the way up to corporate

sponsorship to marry music from disparate parts of the world." Learn more about Mark Johnson and *Playing for Change* at [mixonline.com](http://mixonline.com).



Johnson recording Tenzin Jigmé in Dharamsala, India, for *Playing for Change*

## Track Sheet ::

Assembly Line Studios is completing construction of a new 7,200-square-foot recording studio in Sterling, VA. Pictured below are members of O.A.R., who recorded "Love Is Worth

the Fall" for the *Twilight* soundtrack at Assembly Line...Berkeley Sound Artists' (Berkeley, CA) James LeBrecht restored and mixed video performances by Little Anthony & The Imperials and Wanda Jackson for the 2009 Rock and Roll Hall of Fame induction ceremony...The Bodeans' Sammy Llanas mixed a solo release at GTLabs (Milwaukee) with producer/engineer Gary Tanin...Recent sessions at Sear Sound (NYC) include Sean Lennon and Yuka Honda producing a new album for

Yoko Ono: Chris Allen engineered and David Schoenwetter assisted. Lee Konitz recorded and mixed a new album with producer Dan Tepfer, engineer Allen and assistant Schoenwetter...James Cruz opened a new mastering facility, *Zeitgeist Sound Studio*, in the Long Island City neighborhood of Queens, N.Y. Equipped with gear from Sequoia, Algorithmix, Pristin, Z-Systems and SSL, the studio has already been home to projects from Beyonce and Latin Grammy winners Calle 13.

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



From left: Richard On, Marc Roberge and Kevin "131" Gutierrez at Assembly Line Studios

by Barbara Schultz

workflow because Mark Menza is a composer, as well as a mixer. He needs to move easily from composing to overdubbing to mixing."

Genfan designed a cockpit-style arrangement in the main control room, where Menza's keyboards and a Sony DMX-R100 console rest within rolling racks. Genfan says that aesthetically, acoustically and technically, Menza Music is a "high-level build-out," made possible in part because Menza contributed his own sweat equity.

"A musician friend of mine is a professional carpenter, and I got him to do the woodwork, but I said, 'It will save me money if I can be your grunt.'" Menza says. He personally installed seven pallets of insulation in the studio, which, he laughingly recalls, "really sucked. I would call up Mark [Genfan], and say, 'It needs to be solid, right, not a cavity?' and he would say, 'Solid insulation;

don't call me back till it's done.'"

Menza also designed the rear-wall woven-wood diffusers based on an Oriental room divider he'd seen in an art gallery. "I pitched the idea to Genfan on the back of a napkin," he says, "and I think he was afraid it might be rattle-y, but it's very solid. It's great acoustically and visually."

Genfan and Mike "Spunky" Brunone of gear provider Audio Dawg helped Menza audition speakers; they settled on Genelec 5.1 monitoring: 8050As L/R/C and 8040s for surrounds. Projects completed by Menza since the studio went online last fall include ad music for United Regional Hospital, Pier 1 and the YMCA, and audio branding for local energy provider Oncor

Menza designed his own woven-wood diffuser panels.



Electric. "This morning, I mixed a piece of music that I wrote for ukulele, of all things, for a Pier 1 spot. Then we added sound effects, recorded the VO via ISDN from L.A. and mixed the thing with clients here in the room." III

**C**an something be massively complex in its minimalism? Absolutely. Audio merged with conceptual art in New York City this spring, embodying this dichotomy in the epic exhibition *One Million Years* by artist On Kawara.



Scott Fulmer (left) and Neil Benezra focus on *One Million Years*.

Neil Benezra of Brooklyn Sound Society ([www.brooklynssound.com](http://www.brooklynssound.com)) oversaw a deceptively simple audio installation in this latest portion of the show, which took place in the wide, white expanse of Manhattan's David Zwirner gallery. Now get your head around this: *One Million Years* is a 20-volume collection, comprising *One Million Years [Past]*—created in 1969 and containing a list of the years 998,031 B.C. through 1969 A.D.—and *One Million Years [Future]*, created in 1981 and containing the years 1996 A.D. to 1,001,995 A.D. Together, these volumes make up 2 million years.

Multiple audio presentation/recordings of the volumes have taken place since 1993. For the first time at the David Zwirner gallery, the reading of the *One Million Years* was recorded live while visitors were able to view the process of CD production.

"For On Kawara, it's absolutely no different from making a painting—he just chose to do this artwork with audio," says Benezra, whose experience in audio post, live sound recording, art installations and studio work won him the project. "His work is very static and minimal, and I try to match that with the sound."

*Step One: Build a free-standing recording booth in the middle of the gallery, where a large pane of glass allows visitors to watch male/female pairs of volunteer readers read the latest volume, year by year, changing readers every two hours, five days a week for five consecutive weeks.*

Armed with a budget of \$10,000 and the free 3-D design program Google SketchUp, Benezra constructed a VO booth that had to sound good and keep out noise and vibrations from the building construction across the street. "The best way to build a soundproof room is a lot of separation," he states. "If you build an exterior box and an interior box, the vibration won't pass through."

According to Benezra, clear communication between designer and client trumps all other factors when you're soundproofing on a budget. "I present the best-case scenario. I say, 'This is what we should do for the best possible outcome.' If the client decides it's not

in the budget, I make it clear that if we take away ventilation, people will very well become uncomfortable; if we take away the floated floor, there will be vibrations."

*Step Two: Execute an excellent, error-free live CD production process as gallery visitors observe and interact with you.*

Benezra and engineer Scott Fulmer recorded each pair of readers' Audio-Technica AT4040 mics at a table 25 feet from the booth. A Digidesign Pro Tools 002 rig captured every additional year read from the *One Million Years* volume at 16-bit/44.1kHz. With both engineers and readers monitoring on headphones, a Mackie Big Knob facilitated talkback. Meanwhile, an array of JBL speakers around the gallery allowed visitors to hear the years recorded live in a trade-off sequence: "71,469 A.D., 71,470 A.D., 71,471 A.D."

"The big challenge was dealing with two people in a VO booth, every two hours for five weeks, many of whom had never been in front of a microphone before," Benezra says. "The big thing is making someone comfortable in this situation."

Benezra's people skills also paid off in his choice of co-pilot Fulmer. "The engineer has to be prepared to answer questions from the public," he says. "Scott had to watch every number, because people would often mistakenly jump 10 years and he'd have to catch it. He had to keep the sound consistent, keeping people focused and close to the mic."

*Step 3: Edit, edit till you drop. Edit, edit never stop.*

"In my Brooklyn studio, I cut out every number that was repeated, plus every cough, sneeze and microphone bump, and adjusted for phasing between the two mics," Benezra says. "There was two to three hours of editing per recorded hour, equaling 300 hours of editing for this 100-total-hours show box set of 100 CDs."

It is believed 2,700 CDs will be needed to complete the readings of *One Million Years [Past]* and *One Million Years [Future]*. That means that, on average, if 27 CDs are produced yearly, the entire project will take 100 years to complete.

Recording of *One Million Years* took place live in the David Zwirner gallery.

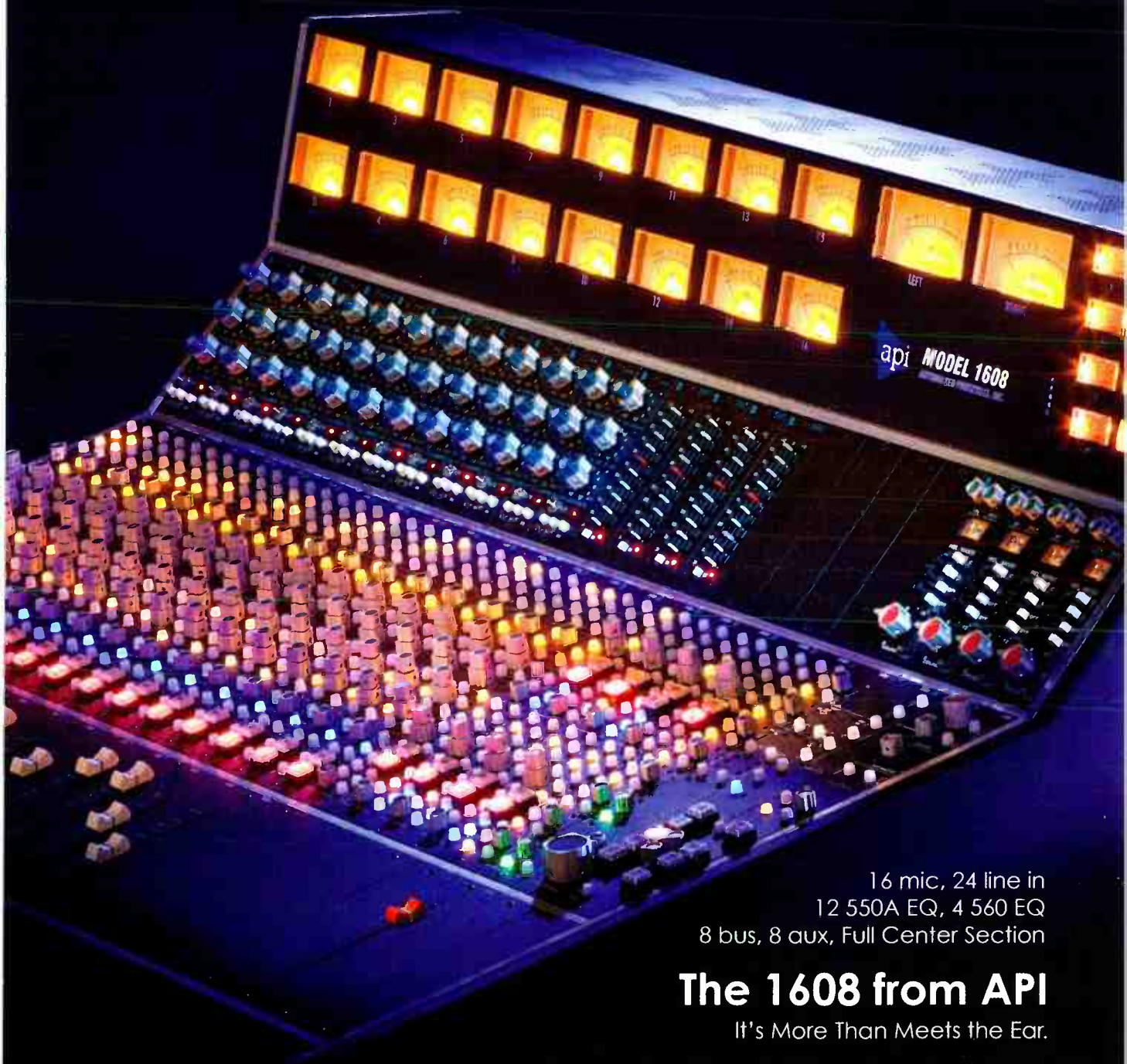


PHOTO: CATHY CARVER

Benezra further maximized the recording quality in a number of ways, such as matching different EQs to the variety of voices he encountered. "I always have the same background, but I'm working with hundreds of different voices," he says. "So I could focus 100 percent on a voice, and that's how I keep things interesting. I always find something to take out of a situation."

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

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# NASHVILLE Skyline

by Peter Cooper

**T**he Trident and the Studer were under blankets, taking up space in Patty Griffin's Austin home. "She called me, and said, 'I want this stuff out of my house,'" says Doug Lancio, who plays guitar for Griffin, John Hiatt and others, and has produced works for Griffin, Matthew Ryan, Todd Snider, Gretchen Peters and more. "I said, 'Hey, I want it out of your house, too.'"

And so, Lancio and friend Bruce Mackay flew out of Nashville

baby might be sleeping upstairs. That's because the baby was sleeping upstairs. And now he's bigger, and it's less and less possible to record that way. So this new place is also about getting out of the house. I see myself working more with bands now. In the house, it was primarily singer/songwriters."

The "new place," as yet unnamed, shares a roof with the studio owned by Larry Hanson, longtime member of the band Alabama, whose daughter, Jennifer Hanson, has become a well-known country singer. When Larry Hanson isn't working, he offers up his three Hammond organs and his space, doubling the size of Lancio and Griffin's music lair.

Even without the Hanson add-ons, Lancio's studio has three isolation booths and an ambient tracking room with a 25-foot ceiling. He tracks through the Trident—a John Oram-made model of recent vintage—often recording vocals on a 1952 Neumann M49 that he calls "fat and warm." And, while he says there's always room to experiment, Lancio often uses a few tricks he's discovered.

"I've got a way I like to record drums, really old school," he says. "Only three mics: a Coles ribbon centered above the kit about seven feet up, a Shure SM57 set about 10 inches below the snare and pointed up, and a bass drum miked on the outside of the head. I stole this from Hiatt, and he stole it from The Beatles.

"I also like to use a bass drum with no front head and a second bass drum with both heads in front of the drum being played," Lancio continues. "Just throw a blanket over both drums and place the mic inside the second drums, and it helps to create an airy, big, cushy sound. The top mic on the kit will have all the attack, 'toppy' stuff. It works very well with a light touch on the foot: more tone."

Lancio also has a preferred method for recording harmony vocals.

"I get the background singer or singers to step away from the mic," he says. "Try positioning any singers you add while overdubbing as if the singer who sang previously is still standing there at the mic. Remember how great those records sound where it had to be done live, around one or two mics? I try to mike things from a distance that I'd like to have them in the mix. The same theory applies to capturing your main picture of the drums from one or two mics—the drummer winds up controlling the mix of his instrument."

Griffin has first dibs on recording at the studio, though her Austin locale means that Lancio often records others in the just-opened space. He tours with Griffin and in Hiatt's band, but there is plenty of off-time and he fills it with sessions. Though the Studer is up and running, he also records through the Trident to digital.

"I don't have a Website or anything, but I do have a lot of people who find me," he says. "I'm not sure how they find me, but they do."

Anyone interested in finding out more about Lancio and his new studio June e-mail him at [lanciodoug@yahoo.com](mailto:lanciodoug@yahoo.com).

Reach Nashville Skyline by e-mailing [peter@petercoopermusic.com](mailto:peter@petercoopermusic.com).



Guitarist/producer Doug Lancio at his new East Nashville studio

on New Year's Eve of 2008, rented a truck, drove to Griffin's house, loaded gear into the truck and drove back to Nashville. By 10 a.m. on the first day of 2009, Lancio had the pieces to complete the studio that he was opening. He and Griffin had gone in together on some property on Chapel Avenue in East Nashville, down the street from the spot where Townes Van Zandt wrote "If I Needed You," and now there was a Trident 324 board and a Studer A827 analog tape machine and two Telefunken V76 preamps and some other niceties for the new place.

"I had a home studio that I've now moved out of the house, and now there's Patty's home studio that she had in her house," Lancio says. "We found a room, and we put our gear together, and now it's at the next level."

Lancio's history involves taking things to the next level. He recorded Griffin's *1000 Kisses* album on a 16-track Roland digital studio-in-a-box, and mixed most of it in the box, as well. Lancio became interested in producing and engineering shortly after his first major band, The Questioners, somehow spent more than \$300,000 on a debut record. A four-piece rock band, they recorded drums one at a time: snare at once, then kick at once, then a floor tom, then a ride cymbal, etc. Lancio figured there might be a better way, and he wound up building a basement studio where he recorded music for Griffin, Snider, Robinella, The Greencards and a slew of others.

"Well, that was until my boy, Rufus, turned 2," he notes. "If you listen to those records, they all sound really quiet, like the

# Innovation, not imitation.



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# L.A. Grapevine

by Bud Scoppa

**M**any moons ago, when I was the West Coast A&R rep for Clive Davis' Arista Records, I made regular visits to Hollywood's Allen Zentz Recording, where producer Harry Maslin worked, often with chief engineer/studio manager John Van Nest. In 1983, Maslin and Van Nest would buy the place and rename it Image Recording, operating together at that location until December 2004. But this was two years earlier, and Maslin was working with Air Supply, a group I'd made Davis aware of (no, my job didn't necessarily reflect my own taste) during the Aussie duo's

that was different from the typical studio—more contemporary, in terms of both environment and functionality," he explains.

The interior has been completely opened up, including the arched, beamed ceiling, with lounges, seating areas filled with coffee-table books and a large central space complete with baby grand piano surrounding the two studios, which loom in the expanse like free-standing bungalows. Their sheet-metal exteriors are decorated with vinyl albums, each held in place by powerful magnets. Albums are everywhere: in rows of metal bins, in translucent shelving units, by the toilet in one of the bathrooms. The other bathroom has a chic portable record player and a stack of vintage singles. The albums turn out to be the bulk of Van Nest's collection, which he transported from his house, to his wife's great relief.

Studio A is a traditional analog mixing/overdubbing suite, built around the 1986 SSL 4000E console that had been the centerpiece of Image, surrounded by the typical complement of outboard equipment from Neve, UREI, Lexicon, AMS, etc. Chris Lord-Alge mixed hundreds of records on the console between 1989 and 2004, and when Van Nest moved it to resonate, the mix master followed. Using A as his home base, Lord-Alge mixed projects from the likes of U2, Green Day, Daughtry and Celine Dion until last year, when he finally moved to be closer to home. Recent clients include breakthrough act Kevin Rudolf, Alice in Chains, producers Toby Wright and Phil Vanali, Demi Lovato, the upcoming Fox TV series *Glee* and *American Idol* contestant Paul Kim.

Studio B is a hybrid Pro Tools mixing/overdubbing suite, outfitted with a Digidesign D-Control worksurface that interfaces with movable racks of vintage analog gear from Pultec, Neve, Manley and Pendulum, and 5.1 monitoring by Westlake. It was here that Van Nest edited Leonard Cohen's *Live in London* and an upcoming DVD of Madonna's *Hard Candy* tour; painstakingly re-created—by ear—the mixes for Mötley Crüe's 1989 LP *Dr. Feelgood for Rock Band*; and cut vocals on the initial project of 17-year-old Filipina singer Charice, a David Foster discovery. Additionally, the room has been the site of a considerable amount of work for various Disney artists (including Miley, Vanessa, Ashley and Zac), and the upcoming *Chipmunks* movie.

"The big question," says Van Nest, "is how does a modern-day studio interface with all these artists and engineers who work at home? This room was my attempt to bridge the gap. Clients just bring their Pro Tools drive over, their mix comes right up on the ICON, they can choose a great vocal chain with all this gear and a mic from our collection, and when they're done, they pull the drive out and go home. We get a fair amount of business that way, primarily through word of mouth. You have to change with the times."

On the way out, I take another look at Van Nest's credo. It ends with these words: "Your life has brought you here to this place at this time. Make something of it! Your audience is counting on you. And I am, too. So get to it. Make your own promise."

That's precisely what he's done here. It's great to reconnect with a onetime colleague so many years later to find him still doing what he loves and doing it well.

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



resonate owner John Van Nest and studio manager Terri Wong-Swanston

run of seven straight Top 10 singles, all but the first produced by Maslin at Zentz/Image.

I recently got an e-mail from Van Nest—our first contact in 28 years—informing me he'd opened his own two-room Burbank facility, which he'd named "resonate" (with a lower-case "r") in January 2005. He invited me to take a look at the place, and I headed to Burbank's Media Center on a glorious spring afternoon. The studio was hard to miss: The 1920s building—once a Nash dealership—has been renovated in the industrial-modern style, with lots of glass and exposed brick.

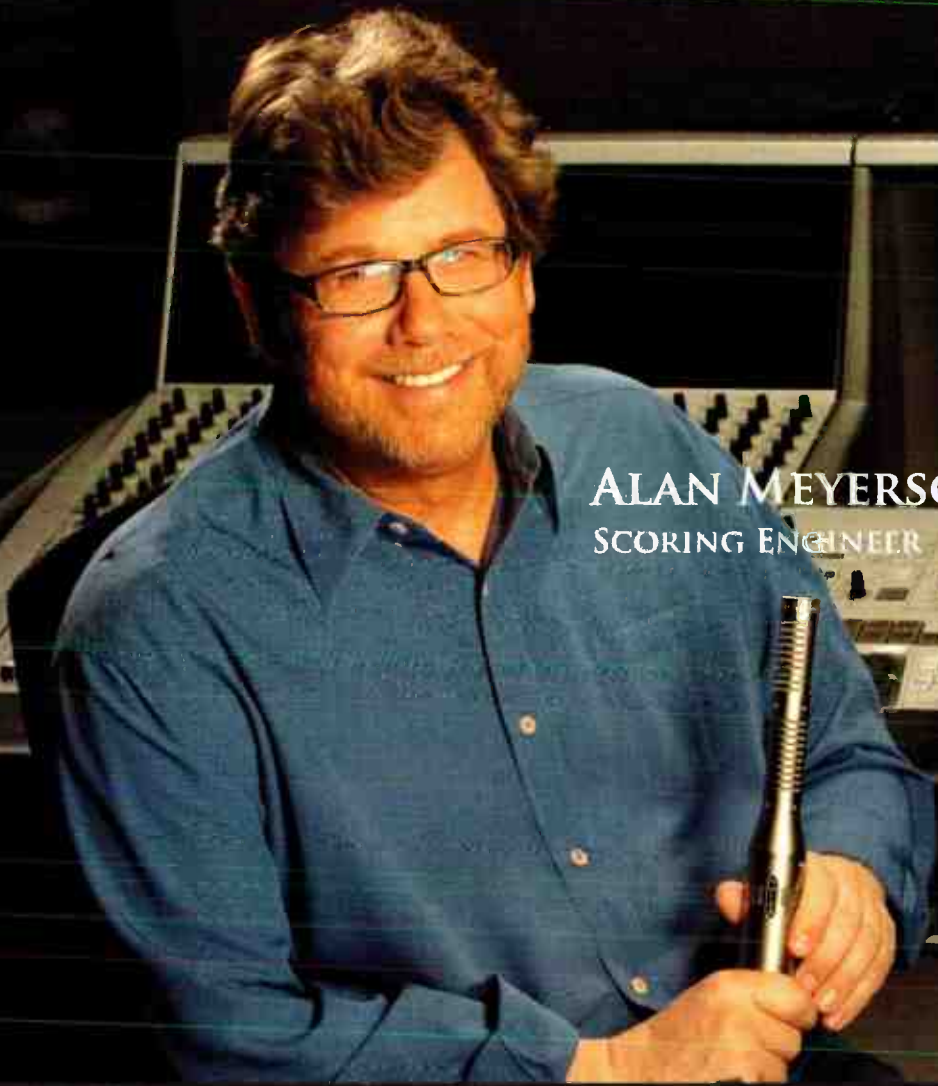
Enter resonate and the first thing that catches the eye is a block of text on the frosted-glass left wall of the waiting area. It turns out to be a credo Van Nest had written for the studio's opening, which begins with a reference to The Beatles' historic appearance on *The Ed Sullivan Show* on February 9, 1964. "The Beatles' promise was that music could mean *so much to so many*," it reads in part. "That music could resonate so very deeply in our hearts and our minds." Projected nonstop onto the glass is footage of their performance that night. What a cool way to inspire those who enter to make music.

Van Nest enters the foyer through a diaphanous curtain. We immediately recognize each other despite the passage of nearly three decades, which we both find reassuring, for obvious reasons. He gives me a tour of the space. An architect drew up the blueprints from his detailed plans, and George Augspurger lent his expertise in the wall design of the studios and control rooms. Otherwise, it was all Van Nest's doing, and he's understandably proud—the place is inviting and comfortable. "I really wanted to create something





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"I've used Royers on every score I've recorded since 1999. My four R-122V's are critical to my work and the latest addition to their tube ribbons, the SF-24V stereo, is astonishing. I'm currently recording the score for the new Transformers movie with an SF-24V on the French horns. Unbelievable sound – superb imaging! Royer has hit another home run with the SF-24V."

**Alan Meyerson**

Scoring Engineer, Grammy winner (Angels & Demons, The Dark Knight, Frost/Nixon, Iron Man, Pirates of the Caribbean: Dead Man's Chest)

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# THE CLASS OF 2009

Mix Presents This Year's Coolest New Studios

## On the Cover: L.A. Sound Gallery BURBANK, CALIF

Producer/composer Matt Salazar's projects had outgrown his small SSL G+-equipped production studio, and he was looking to acquire a facility big enough to fit a new SSL Duality console. "I demo'ed the Duality and really liked its open sound and the workflow, but there was nowhere to put it," he says.

He found plenty of room all right. As of September '08, Salazar has relocated to the former Evergreen Studios space, which includes a 4,000-square-foot scoring stage that received its last major building redesign in 1998. For several years, the studio had been barely touched, and according to Lee Bartolomei, who handled the technical redesign in '97/'98, it was rarely ever used for its intended purpose. Salazar and his partner and brother, Jason Salazar, opened up the walls and completely replaced the studio's wiring/infrastructure. "There had always been a studio going on here since the late '70s, and improvements had been made gradually since that time, but the wiring was very disorganized. We

replaced it with Mogami 110-ohm digital cabling, and the studio now operates at a much higher spec," Matt Salazar says.

The new owners retained much of the late-'90s design—including the unique, diamond-shaped diffusers, George Augspurger 5.1 monitoring setup and all of the control room treatments—but judiciously employed additional baffling in the live room to "soften" the acoustics. "The shape of the room is conducive to having a big cathedral-esque sound," Salazar explains. "We tuned the high end and the decay for clarity because we didn't want to lose the depth of the room. We just tried to soften the upper-midrange frequencies so that, if you have a 30-piece string section, for example, and then you bring brass in, the brass won't ring within the room and overpower what the strings are doing. It's very balanced."

Salazar, whose own projects have included original music for the *Hannah Montana* show and artist development for Warner Bros. and Interscope, consulted with veteran film sound mixers Dan Wallin and Armin Steiner on the implementation of the redesign, and the reworked studio has been booked solid with film and TV gigs. Recent projects have included music for Fox-TV series *Fringe*, *The Simpsons*, *Family Guy* and *King of the Hill*; live source Source Connect sessions with composer Mark Isham and producer Mutt Lange; and the featured title for the upcoming Tim Allen/Alisha Cuthbert film *My Dad's Six Wives*, arranged and produced by Salazar.

However, now that L.A. Sound Gallery is running full-speed, it's not always easy for Salazar to get time in his own studio. So, he's adding a B room with a Digidesign ICON console. "Even when I work on film soundtracks, it's more in the pop genre," Salazar says. "The B room will have eight channels of everything that's on our SSL Duality, in X Racks, along with a healthy amount of outboard inspired by our A room's selection. This will suit most of my production needs, and we'll be able to bounce back and forth seamlessly."



PHOTO: ED CHELIER



PHOTO: MICHAEL WOODS/DE

Every year, we receive photos of more great designs than we can print. Find more photos of these and other new facilities at [www.mixonline.com](http://www.mixonline.com).

## Alvernia Studios ALVERNIA, POLAND

Andy Munro of Munro Acoustics (London) designed Poland's first full-scale film production facility. This fantastical, futuristic-looking complex features a scoring stage large enough to accommodate a 100-piece orchestra, and a flown "pine cone" that opens out for variable absorptive/reflective acoustics. The scoring studio offers a 72-fader Neve 88R console; Munro Acoustics M4+P; Westlake and Yamaha monitoring; Pro Tools systems; a Studer 2-inch 24-track machine; and more. The post-production studios employ two AMS-Neve MMC 300 boards, as well as Genelec stereo and Dynaudio 5.1 monitoring. Alvernia also has a dubbing theater equipped with a 96-fader Neve DFC console.



## Downtown Music NEW YORK CITY

The studios at Downtown Music are part of a larger one-stop business that includes music production, as well as a record label, music publishing and licensing. Pilchner Schoustal International (Toronto, Ontario) designed the 3,500-square-foot studio facilities. Pictured here is the live room connected to Studio A, which is centered around a Digidesign D-Command linking Pro Tools HD and Logic 8, and Tannoy DMT-215 main monitors powered by mono-bridged Bryston 4Bs. Acoustical treatments in the A room include custom Canadian maple diffusers and fabric-covered flutter-free panels. Studio B—which employs D-Command, a Pro Tools HD3 rig and 16 channels of Apogee conversion—was designed with a Balinese motif featuring a custom ceiling-mounted rosewood diffuser and hand-carved reflective woodwork.

PHOTO: SHICHO MIYATA

## Shock City ST LOUIS, MO

Shock City serves as the home base for production company Shock City Music Works, operated by musician/co-owners Doug Firley and Chris Loesch. Kurt Kerns of the Lawrence Group (St. Louis) designed the studio around an SSL 6060 G/G+ console, Pro Tools 8 and Augspurger main monitors. The wall of windows in the live room is broken into small panes that serve as diffusers, all angled for varying pitches and depths. Custom tunable panels attached below the window wall can be removed from the wall and used as acoustic scrims. A 22x23-foot control room includes RPG Omnidiffusers and Goltzman & Sabo acoustic panels.



PHOTO: ALPHE O'BRIEN



PHOTO: PHILIP JENSEN-MARTIN

### audioEngine NEW YORK CITY

Pictured is Studio E, one of two new audioEngine Studios designed by John Storyk of the Walters Storyk Design Group (Highland, N.Y.). Based around a Digidesign D-Command working on an Apple Mac Pro and self-powered KRK V4 near-fields, this 29x17-foot studio is dedicated to 5.1 theatrical/advertising sound mixing. Studio F features dark, rough-hewn wood flooring, exposed wood walls and a stone "fireplace" (with a 65-inch Sharp flat-screen display in place of a hearth) designed to create a log-cabin feel.



PHOTO: LUC JOHNSON

### Clatter & Din SEATTLE

The Russ Berger Design Group (Addison, Texas) designed several rooms for this 6,000-square-foot music/audio/post-production facility. Two 5.1 surround recording/monitoring studios connect to a large live room and two iso booths. These studios were relocated to the top floor of a century-old brick building. Installed improvements include floating floors and space for wire management. SpaceCouplers by pArtScience provide overhead diffusion in the control room, which features Pro Tools 8, Digidesign C24s and Genelec 1031/7070 monitors.



PHOTO: TARA ATKINS

### Pressburger Theatre, Pinewood Studios

BUCKINGHAMSHIRE, UK

The refurbished Pressburger Theatre at Pinewood Studios was redesigned by Andy Munro of Munro Acoustics. After reopening last spring, this prestigious room hosted Richard Pryke and Ian Tapp's Academy Award-winning sound mixes of Best Picture winner *Slumdog Millionaire*. The studio is equipped with a Euphonix System 5 EuCon Hybrid console, 35mm and large-screen video projection and Pro Tools.

### Nettleingham Audio

VANCOUVER, WASH

Busy recording/mixing/mastering engineer Kevin Nettleingham has moved his studio operations into a new ground-up facility designed by Chris Pelonis of Pelonis Sound and Acoustics (Santa Barbara, Calif.). The live room features a large, exposed-brick wall diffuser with 18-foot modified cathedral ceiling; there's also a vocal booth just off of the control room. The control room is equipped with Pro Tools HD3, extensive Crane Song gear, Digidesign D-Command and Pelonis' Signature Series PSS110 monitoring with PSS212 subwoofer.



PHOTO: RICHARD WELLES

## Vanquish Studios DAVIE, FLA

Situated just outside Fort Lauderdale, Vanquish was designed by Horacio Malvicino of the Malvicino Design Group (New York City) with assistance from the Blank Design Group (San Francisco, CA) to accommodate hip-hop, R&B, jazz, alternative and remix projects. Variable acoustics allow for a 0.6 to 1.2-second reverb time; treatments include ceiling clouds with RPG Flutter-Free moldings. The studio is equipped with an SSL Duality 48-input console, ADAM S-5VA Mk2 main monitors, an Apogee Symphony system and Pro Tools HD3.



PHOTO BY GEMER



## Odds On Recording LAS VEGAS

As Las Vegas continues to grow as an entertainment Mecca, the owners of Odds On Records & Studios have made the most of opportunities in their market by adding a top-flight recording studio to their audio production/duplication operations. Designed by Carl Yanchar of Yanchar Design and Consulting (Foothill Ranch, Calif.), three new rooms include Studio A, which boasts a 96-input SSL Duality board, Pro Tools HD, Studer A827 tape machine and Ocean Way main monitors. Its large B and C rooms include SSL 9000 K and Matrix boards, respectively, as well as Pro Tools rigs. Situated 15 minutes from the Strip and McCarran Airport, Odds On Recording caters to both visiting and local artists.

## Night Sky Sound SAN DIEGO, CALIF.

Longtime New York-based engineer/studio owner Steve Donato re-located his studio business to a Mediterranean-style estate in sunny San Diego last October. The facility was designed by Frank Perez-Perez of Dauntless Designs and the late Louis Altuna. The 800-square-foot Grand Live Room features a nonparallel design with 17-foot vaulted ceilings, custom woodwork, tile flooring and views of the rolling hills of San Diego County. A second, 450-square-foot live room includes custom fabric panels and bass traps, and stage-style lighting. Equipment includes a custom Allen & Heath Sigma console; Dynaudio Air 25 5.1 monitoring; vintage Neve, UREI and dbx processing; a large collection of vintage synths; and more in a control room that features floating floors, custom absorptive panels, bass traps and diffuser arrays, and the studio's trademark starry "sky."



PHOTO BY JOSHUA PEREZ-PEREZ AND STEVE DONATO

### Rocking Horse Studio PITTSFIELD, N.H.

Designed by Michael Blackmer of Blackmer Sound (Cambridge, Mass.), Rocking Horse centers on a Trident Series 80B console and Pro Tools HD3. Monitoring is via ADAM S3As, Genelec 7070As and Yamaha NS-10s. Acoustical room features include Brazilian koa hardwood over floating floors, birch-panel spatial deflectors, broadband frequency absorbers and 20-foot cathedral ceilings. Among the studio's big attractions are its large live room and collection of vintage keys (Mellotron, Hammond A100 with Leslie, Optigan, Wurli, etc.). The studio also offers B&B accommodations in an 18th-century farmhouse.

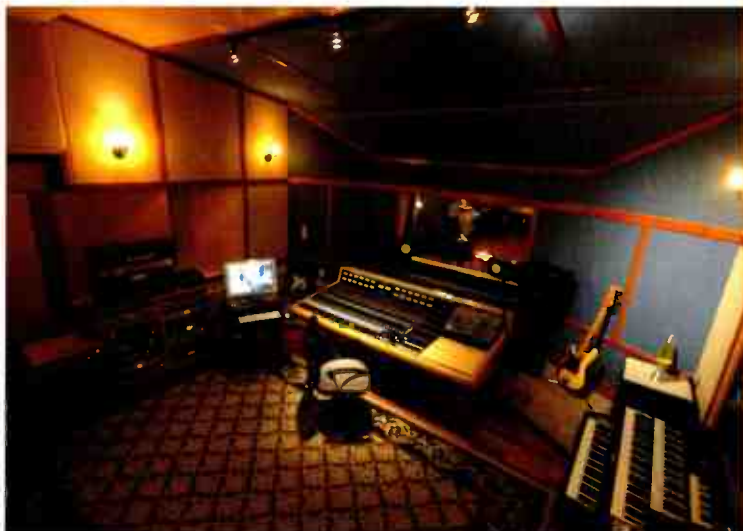


PHOTO: LARRY E. HEDGECOCK III FOR PROUDIO

### Alexis Records

KAWARTHA LAKES, ONTARIO

This production studio is owned by indie label Alexis Records (Toronto, Ontario). Designed by Marco Re sendes and Chris Tedesco of Rectech Rooms Inc., the facility includes a stereo control room,



PHOTO: DANIELA DE LUIGI FOR PROUDIO

machine room, iso booth, tracking room and residential accommodations. Acoustical treatments include fabric panels to complement natural stone and wood sections, and a large diffuser wall in the high-ceiling live room. Alexis is equipped with an SSL 4056 G/G+ console, Pro Tools HD, custom Kranis K12 main monitors and Yamaha near-fields powered by Bryston amps.



PHOTO: MARCO DEL BENE

### Life Studios ROME, ITALY

GGD Productions and recording artist Gigi D'Alessio own Life Studios, which was designed by Francis Manzella of FM Design. The live room is suitable for recording string sections and pop ensembles, and includes three iso areas with differing acoustic signatures. The control room is set up for 5.1 mixing with a custom Griffin monitor installation and projection system, as well as an SSL Duality console and Pro Tools HD.

The rear of the control room also looks outdoors through a custom, clear acrylic RPG Diffuser.



World Radio History

### Lime Studio South

SANTA MONICA, CALIF

Hanson Hsu of Delta H Design Inc. designed the latest addition to one of Santa Monica's favorite post-production facilities catering to the film, television and advertising industries. Adjacent to the large, theatrical-style control room is an ADR/Foley booth as well as a visually appealing screening room for clientele. The 2,200-square-foot addition centers around the latest gear from Digidesign, Mackie and Genelec. III



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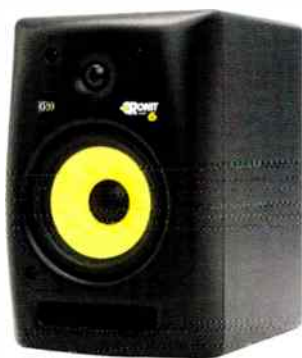
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# Up Close and Personal With **REFERENCE**

## NEW STUDIO NEAR-FIELDS

By Kevin Becka



HRK Systems Rokit Powered RP6 G2



M-Audio Studiophile CX8



Mackie MR 8

In what seems like the distant past, most recording studios were considered the “cathedrals of audio” and built with top-level acoustic treatment and great attention to design and isolation from the noisy secular world outside. Due to the changes in gear, budgets and production styles, many of these rooms have closed or are now out of reach for everyday use. We’ve adjusted by moving at least some of our work to home spaces, offices or other nonpurpose-built environments.

Audio pioneer Ed Long debuted the concept of the near-field monitor more than three decades ago, offering a compact transducer that could accurately portray the tracks, processing and mix decisions we’ve made—even in poor acoustical settings. Such speakers are ideal for audio pros working in a variety of spaces; they provide a consistent reference for the traveling engineer who must quickly adapt to various rooms. For these reasons, solidly constructed, two- and three-way systems with woofers between six and 10 inches have become the weapon of choice for the discerning engineer.

### New Ideas, New Approaches

Manufacturers have responded with products that address this new reality. This can be as simple as innovative baffling inside the speaker to increase low-end response, newly de-

signed wave guides that increase the sweet spot, onboard amplification and more. And many of the products listed in our buyer’s guide feature some type of room correction in the form of high/mid/low-frequency shelving controls, sweepable EQ or boundary controls. These can be helpful when your monitors are placed on a desktop or atop a meter bridge, free-field or in close proximity to rear/side walls or other boundaries.

While rotary trim controls and DIP switches with fixed boost/cut amounts provide some control over our listening environments on a trial-and-error basis, DSP can take the process up a notch by adding computer analysis and control over acoustics. As one example, Equator Audio offers correction software to control its Q8 and Q10 models. The user can let the software make up for any issues by entering the room’s dimensions from which the system will correct for three standing waves (front to back wall, left to right wall, and floor to ceiling). And by entering the speaker’s placement in the room, the software can compensate for  $\pi$  space and boundary/placement anomalies.

### Options and Add-Ons

If your near-fields don’t go low enough for your needs, you may consider a subwoofer. However, simply adding a sub



# MONITORS



Event Opal



Klein + Hummel O 410



Dynaudio Acoustics AIR 12

to a stereo or larger system can introduce a range of problems, including intermodulation distortion, resulting in a confused bottom end. This is especially true in smaller spaces. In this case, a matched sub with bass management is preferable and a few of the systems in our roundup offer this option. Bass management works by capturing frequencies below a user-defined cut-off from your main monitors, routing this signal directly to the subwoofer. The resulting control of low frequencies can improve full-range monitoring in a tight space.

On the simpler side, some of these products increase placement options by offering users the ability to rotate the tweeter, making it easy to orient the speakers horizontally or vertically. Features such as rock-solid cabinet construction to minimize resonance and the ability to mount the units in a number of different ways have carried through most new lines, as well. This ensures the listener will be hearing an accurate representation of the audio without any distracting rattles, hums or vibrations.

Networking options and compatibility with other products can be helpful when the user is trying to mix and match front, back and center speakers and a sub in a multichannel setup. Dynaudio, a manufacturer that is familiar with networked systems, offers the AIR 12, featuring solo, mute and

calibrated levels, and compatibility with other AIR products to allow for the use of smaller and diffused surrounds with larger front speakers—another space-saver.

## Getting Started

The chart on the following page details recent product releases (during the past 18 months) with woofers ranging from six to 10 inches. We should emphasize that the chart represents a slice in time. Therefore, it doesn't include existing models that fall outside the one-and-a-half-year window, from either the companies listed or other near-field manufacturers, such as ADAM Audio, Edirol, Hosa, iKey, PMC, ProAc, Queded, SLS, Westlake, Wharfedale Pro and Yamaha—to name a few. Also, if you're considering models outside the six to 10-inch range, check out our report on mini-monitors in the March 2009 issue, or for that really big sound look up the article highlighting large main systems in the November 2007 *Mix*.

So whether you need a system you can grow, change or EQ, or one that offers DSP or other digital options, hopefully you'll find it in our buyer's guide. This should get you started on your search for products that are compatible with your own workspace. Happy hunting. III

*Kevin Becka is Mix's technical editor.*

Company, Website	Model	Drivers/ Amplifiers	Inputs	Dimensions (HxWxD)	Max SPL	Frequency Response	Weight, Each	List Price, Each	Notes
Alesis, www.alesis.com	M1Active 620	6.5"/1"; 65+30W	XLR, TRS	15x8.5x10.25"	90 dB	49 - 20k	21 lbs.	\$599	LF density switch for acoustic space adjustment; HF/MF/LF EQ switches
ATC, www.transaudiogroup.com	SCM16A	6"/1"; 200+50W	XLR	17.5x10.5x12.25"	108 dB	80 - 17k, ±2 dB	38 lbs.	\$1,750	aluminium cabinet; 20dB input sensitivity trim; +6dB @ 50Hz LF EQ
Barefoot, www.vintageking.com	Micro-Main27	2x10"/2x5"/1"; 500+250+60W	XLR	20.5x9.5x15.25"	128 dB	38 - 20k, ±1.5 dB	71 lbs.	\$3,497	dual integrated force-canceling subs; sealed enclosure; shallow 12dB/octave LF roll-off
Behringer, www.behringer.com	B3030A	6.75"/2" ribbon; 150+75W	XLR, TRS	12.5x8.4x8.33"	113 dB	50 - 24k	22 lbs.	\$489	Kevlar woofer; 2" velocity ribbon tweeter; room controls; subwoofer options
Behringer	B3031A	8.75"/2" ribbon; 150+75W	XLR, TRS	15.75x9.8x11.4"	116 dB	50 - 24k	33 lbs.	\$589	Kevlar woofer; 2" velocity ribbon tweeter; room controls; subwoofer options
Blue Sky, www.abluesky.com	Sat 8	8"/4"/1"; 100+100+100W	XLR	21x11.25x11.6"	115 dB	80 - 20k	46 lbs.	\$1,750	optional 212 subwoofer
Dynaudio Acoustics, www.dynaudioacoustics.com	Air 12	8"/1.1"; 200+200W	XLR	15.4x9.5x15"	128 dB	37 - 22k	28.4 lbs.	\$2,495	remote offers control of solo, mute and calibrated levels; can network with other AIR products to enable smaller and diffused surrounds with larger front speakers
Equator Audio, www.equatoraudio.com	Q8	10"/1"; 200+200W	XLR, TRS, USB	13x13x13"	110 dB	38 - 22k	34 lbs.	\$1,500	coaxial design; automated correction of standing wave, room boundary and secondary reflection
Equator Audio	Q10	10"/1"; 200+200W	XLR, TRS, USB	15x15x15"	112 dB	32 - 22k	54 lbs.	\$2,000	coaxial design; automated correction of standing wave, room boundary and secondary reflection
Event, www.eventelectronics.com	Opal	7.1"/1"; 270+50W	XLR, TRS	17.7x11.6x10.8"	114 dB	35 - 22k	46 lbs.	\$1,999	front EQ controls; free StudioEQ measurement and calibration software; rotatable waveguide for horizontal mounting
Focal Professional, www.focalprofessional.com	CMS65	6.5"/1"; 100+60W	XLR, RCA	14.1x9.5x9.1"	108 dB	45 - 28k	23 lbs.	\$950	die-cast aluminum cabinet; LF/HF shelving; desktop notch filter; rubber decoupling platform
Genelec, www.genelec.com	1038CF	2x8"/5"/1"; 180+120+120W	XLR	24x18x9.25"	124dB	57 - 20k, ±2.5 dB	87 lbs.	N/A	rotatable MF/HF waveguide; amps can be removed outside enclosures for soffit-mounting.
Griffin Audio, www.griffin.audiosa.com	G2B	2x8"/4" ribbon; 250+250W	XLR	24x16x19"	114 dB	33 - 22k	70 lbs.	\$3,950	available in variety of wood finishes, as well as black-textured finish
Hot House Professional, www.hothousepro.com	PRM 165 MkII	6.5"/1"; passive	Binding Post	12.5x8.5x13"	N/A	58 - 20.5k	25 lbs.	\$700	hand-wired crossover; "Hyper-Shielded" version is \$50 extra; Hot House amps optional
JBL Professional, www.jblpro.com/lsr	LSR2328P	8"/1"; 95+70W	XLR, TRS, RCA	15.6x10x13.2"	104 dB	37 - 20k	28 lbs.	\$439	detented level control; LF and HF controls to tailor response for preference or room acoustics
Klein + Hummel, www.klein-hummel.com	O 410	10"/3"/1"; 340+180+160W	XLR	25.4x13x17.5"	120 dB	30 - 24k, ±3 dB	79.4 lbs.	\$6,998	onboard acoustic controls and parametric EQ; optional digital input card; rotatable horn driver; curved front panel for enhanced imaging
KRK Systems, www.krksys.com	VXT8	8"/1"; 120+60W	XLR, TRS	17.25x12.5x11.9"	107 dB	37 - 22k, ±1.5 dB	41 lbs.	\$799	curved front panel for enhanced imaging
KRK Systems	R6	6"/1"; passive	Binding Post	13x10x10.9"	107 dB	49 - 20k, ±2 dB	20 lbs.	\$149	curved front panel for enhanced imaging; front-ported design
KRK Systems	Rokit Powered RP6 G2	6"/1"; 50+18W	XLR, TRS, RCA	12.7x8.9x11.5"	106 dB	49 - 20k	23 lbs.	\$399	front porting; new speaker voicing offers more accurate frequency response
KRK Systems	Rokit Powered RP8 G2	8"/1"; 70+20W	XLR, TRS, RCA	15x10.4x13"	106 dB	45 - 20k	30 lbs.	\$499	curved front plate design reduces diffraction distortion; waveguide for improved imaging
KRK Systems	VXT6	6"/1"; 60+30W	XLR, TRS	14.5x10.3x9.6"	107 dB	49 - 22k, ±1.5 dB	27 lbs.	\$599	curved front panel for enhanced imaging
KRK Systems	Rokit 6	6"/1"; 50+18W	XLR, TRS, RCA	12.7x8.9x11.5"	106 dB	49 - 20k	23 lbs.	\$199	front-ported design with curved baffle
M-Audio, www.m-audio.com	Studio-ophile CX8	8"/1"; 80+40W	XLR, TRS, RCA	13x11x17"	109 dB	38 - 30k	22.1 lbs.	\$499	acoustic space controls; Kevlar woofers; OptImage IV waveguide
M-Audio	Studio-ophile DSM1	6.5"/1"; 100+80W	XLR, TRS, S/PDIF, AES/EBU	12.8x9x10.3"	110 dB	49 - 27k	16.5 lbs.	\$649	onboard DSP-based digital crossover and EQ controls; up to 192kHz digital inputs
M-Audio	Studio-ophile DSM2	8"/1"; 100+80W	XLR, TRS, S/PDIF, AES/EBU	15.2x10.6x10.1"	111 dB	42 - 27k	20 lbs.	\$749	DSP-based crossover and EQ controls; up to 192kHz digital inputs
M-Audio	Studio-ophile DSM3	2x6.5"/1"; 100+80W	XLR, TRS, S/PDIF, AES/EBU	10.6x16x10.3"	111 dB	37 - 27k	23.7 lbs.	\$899	onboard DSP-based digital crossover and EQ controls; up to 192kHz digital inputs; hybrid mid-woofer/tweeter/midwoofer (MTM) configuration
Mackie, www.mackie.com	MR 8	8"/1"; 100+50W	XLR, TRS, RCA	15.75x10.85x13.6"	116 dB	40 - 20k	27.6 lbs.	\$359	molded baffle for even dispersion
MK Sound, www.mksoundsystem.com	MPS1611P	6.5"/1"; 100+50W	XLR, TRS, RCA	12.6x8.4x12.13"	110 dB	45 - 20k	21 lbs.	\$1,199	removable port plug for full-range or satellite operation with subwoofer
Oram-Sonodyne, www.johnoram.com	SM150	6.5"/1"; 80+40W	XLR, TRS	13.2x9x11.8"	109dB	60 - 22k, ±3 dB	23 lbs.	\$1,035	front-mounted volume controls; EQ Magic™ LF parametric for room correction
Samson Technologies, www.samsontech.com	Resolv A8 Active	8"/1.25"; 75+25W	XLR, TRS, RCA	12x16x11.25"	106 dB	30 - 27k	25 lbs.	\$559	HF lift control; rear panel volume; carbon-fiber woofer; silk-dome tweeter
Samson Technologies	Resolv A6 Active	6.5"/1.25"; 75+25W	XLR, TRS, RCA	9.25x12.75x9.85"	106 dB	40 - 27k	18 lbs.	\$499	HF lift control; rear panel volume; carbon-fiber woofer; silk-dome tweeter

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World Radio History

# ARTHUR KELM

## A WELL-GROUNDED APPROACH TO AC POWER PROBLEMS

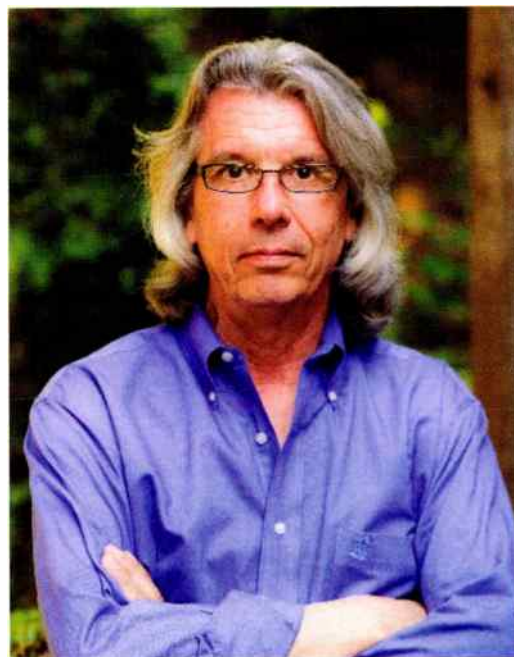
By George Petersen

**E**lectrical power, like the air, is something most of us take for granted. Live or studio, AC power and grounding remain one of the great enduring mysteries in audio systems. Hum, ground loops and intermittent buzzes seem to be prevalent in studios everywhere, and there are few guitarists who haven't encountered the guitar-to-mic "kiss" stemming from improperly wired outlets in clubs or rehearsal spaces.

Solid information about power and grounding in audio is sketchy at best and shrouded in folklore, myths and the ever popular "I read this somewhere on the Net, so it's gotta work." However, one person who's taken an empirical approach to the subject is Arthur Kelm, studio designer and CEO of Ground One AV Inc., a consulting firm that addresses the specific power and grounding requirements of pro recording facilities and high-end home theater installs.

Kelm's audio roots run deep. After getting his EE degree, he worked on satellite communications systems and then left to create custom wireless rigs for (and toured with) Debbie Reynolds. Coming off the road, he was chief tech for Chateau Recorders in North Hollywood and designed Broad Recording Studios for Hawaiian artist Al Harrington with the help from his mentor, legendary studio architect Jack Edwards. Returning to L.A., he spent days as a tech at Canyon Recorders and nights at Record One Studios. This was followed by a couple years doing engineering and tech work for Laura Nyro (for whom he designed a studio), Toto and Ocean Way Studios. In 1987, Greg Ladanyi and George Massenberg asked Kelm to be general manager/chief engineer of The Complex, and he remained there for four years.

Kelm then provided freelance tech/design services and



consulting for companies such as Walt Disney Imagineering, and was director of engineering for The Record Plant Studios. After a year as chief engineer at Skywalker Sound, Kelm focused his energies full time on studio design and creating solutions for AC power problems.

Today, Kelm's company offers consulting services and manufactures AC distribution, voltage conditioning, power isolation and filtering products. He also still takes on the occasional studio design project and graciously set aside time to discuss some design/construction/installation and grounding issues.

### *What's your design philosophy?*

It's first determining the artist's needs and then making that artist's favorite speakers work in that room design. I learned studio design from hands-on experience creating a lot of rooms, seeing what worked and what didn't work. Being a technician helped me see *all* the elements that go into a good room design—it's not just architecture.

You can design a room entirely from drawings and computer models, but that's no guarantee the room will sound good. And one room might sound good with certain speakers but not with other monitors. And 90 percent of the time, that's the issue—the wrong speakers in the wrong room. A good room should sound good—period—

but the wrong speakers can make a great room sound bad and the speaker/amplifier combination is critical. There's no such thing as a perfect monitor.

**Why do people think AC power is so complicated?**

It's only complicated because of grounding. If it's not done correctly, there are a lot of red herrings. People will begin troubleshooting a hum or buzz and start looking in the wrong place to fix a problem. Then when things start interacting with each other, it begins a downward spiral when you may "fix" one problem only to have it move somewhere else, which screws people up. I take an analytical approach to solving power issues. People try all sorts of odd remedies, when sometimes the problem can be traced to poor installation by the electrician.

Some techs feel power and grounding is a lot of black magic that doesn't make sense, but to me it's not that complicated, especially with only three, four or six wires. I was recently working on a few home installations where they had problems. I found sump pumps, washer/dryers and air-conditioning units on the same panel board as their sensitive electronics and computer gear!

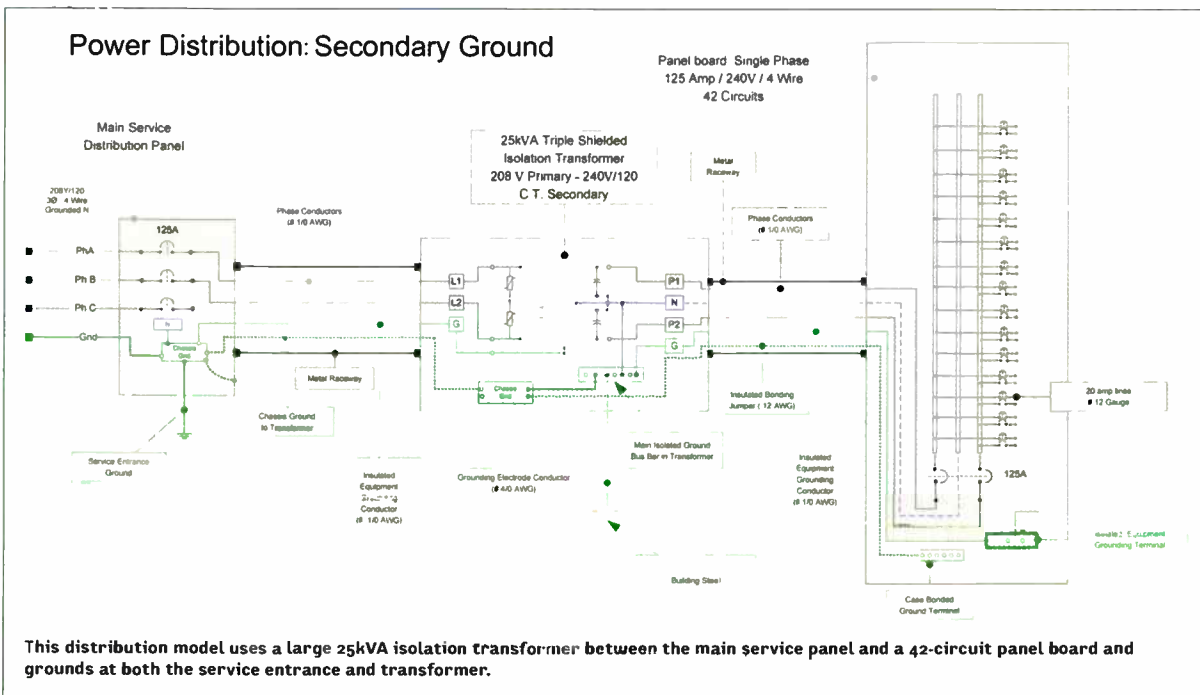
In studios, I've seen just about every type of home-brew solution, like people driving ground rods under consoles. Then I hear comments like, "The system works, but some

days it buzzes and other days it doesn't." It comes down to trying to use the audio chain to compensate for something that wasn't done properly in the electrical chain. For years, I didn't look at the electrical side when trying to solve hum and buzz problems; I only looked at my world. I'd use a whole box of Band-Aids, gum and baling wire—lifting a ground here or inserting fiber washers under the rack screws to isolate a piece of gear somewhere else—to get problems to stop.

Eventually, I decided to reverse-engineer the process. Once I read more and talked to people in telecommunications about power and grounding, I got a good understanding of it. I bought my first Fluke 43 [power-quality analyzer] for \$4,500, worked with it and a light went on inside me. Testing and test equipment actually works with power systems, and if you do it right and follow the NEC [National Electric Code] book, it ends up quiet and clean.

**What's your approach to studio grounding?**

I use a star grounding technique, but to me an isolation transformer is mandatory. The key to what I do is re-bonding the neutral and ground on the secondary of the isolation transformer. That feeds your panel board, and the panel board feeds all the outlets in your studio. When you re-bond neutral and ground on the secondary of the transformer, you are actually, in terms of the electrical code, creating a new



service, and 90 percent of your noise—click and pops and other disturbances—comes from voltages between the neutral and ground. So once you've re-bonded neutral and ground, you're off to a new start.

I do soil-resistivity testing to determine what kind of ground reference I have. I shoot for under 5 ohms path-to-ground, and in some cases it's necessary to drive a secondary ground rod. The code is 25 ohms for a service entrance, where the electrical service enters the building and where they bond neutral and ground. The 25-ohm figure is for life safety, but you want to be under 5 ohms for a low-noise ground.

If I don't have a great ground at the service entrance, I'll do a supplementary secondary ground after the isolation transformer. The ground from the service entrance comes to the transformer, goes to a bus bar, the neutral jumpers over to the bus bar and then I'll go from that out to a brand-new ground rod or rods—to get under 5 ohms.

That becomes our new point source for ground. It goes from that point up to the sub-panel, and the sub-panel has an IG [isolated ground] bus in it and an isolated digital bus in it. Then all the neutrals and green wires from the recep-

tacles come back to that point—you never daisy-chain anything. It's a star system from that aspect. Each receptacle or quad box has a dedicated run back to the panel and to its own breaker. That approach has worked flawlessly for me for the past 10 years.

*In terms of the ground rod itself, is a standard Home Depot-type, 5/8-inch copper-clad steel rod okay?*

Maybe, but you have to make measurements. Ideally, I like to use an ionic electrode [chemical] ground rod, like the Lyncole XIT. It's a 2-inch-diameter tube with weep holes drilled into it and it's filled with a rock-salt material. You core a 6-inch hole, place the rod in the center and back-fill it with Bentonite clay/soil conditioner, which you mix into a slurry with the thickness of pancake batter. The Bentonite creates a high-conductivity/low-corrosive mixture.

It's all got to be calculated. I go out to the site, pound stakes into the ground and make Wenner soil-resistivity measurements in 5-foot increments, from five through 20 feet. From that I make a soils profile based on the continuity of the soil and can calculate the required length of the ground rod to have a 5-ohm path-to-ground. This can vary from a single 10-foot chemrod to two or three 15-foot chemrods. When I did O'Henry

Studios [Burbank, Calif.], I needed two 20-foot chemrods to achieve five ohms. The facility was in the [San Fernando] valley in very sandy soil, so we needed to go that extra mile. Also, when ground rods are placed too close to each other, they act as one—rather than separate—ground rods. If you're installing 10-foot rods and need two, you need to place them 20 feet apart so they don't interact with one another.

If you have the money, go for a chemrod—they're expensive but last 28 years. The alternative is driven-steel rods, but they lose their effectiveness after about 10 years as they rust away. For all intents and purposes, they're just pieces of copper-plated rebar, and that copper coating wears away as the rod is pounded into the ground. Once the copper's gone, the bar starts rusting.

Ground maintenance is also important. You need to check your ground every few years with a clamp-on meter. Only about 10 percent of the ground systems I've checked even met the code—which is 25 ohms—and most measure somewhere between 35 to 600 ohms.

Oddly enough, if electrical inspectors see a water pipe ground and a driven ground rod, they won't even bother to measure it, saying, "That's good enough." It can change with time



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and soil conditions. Moisture can help, but the quality of the ground is based on the soil's mineral content.

Once you have a good grounding system established, it's amazing how much better things are. It really works and it's not rocket science.

*So if humans can fly to the moon, why can't I get the huzzing out of my Strat?*

Blame it on the Earth's magnetism. [Laughs] Actually, it's not the Earth's magnetism, but unless you get way out in the country—like out at Neil Young's ranch—you're constantly being inundated with magnetic fields. And single-coil pickups are the most sensitive device we have in the audio business. If there's a hum or magnetic field out there, they'll find it. Concrete/steel rod-reinforced buildings are huge Faraday cages—they actually radiate, bringing hum into a system. They're giant 60Hz antennas.

In some outboard devices like AMS units and Harmonizers, their power supplies throw off a huge [EMF] field, which you can prove by putting your guitar close to them. I have a single-coil pickup and Danelectro Honeytone battery-powered amp I can turn on and move around inside buildings and track down hums. When I design a room, I try to place all electrical within steel conduit and twist the hot and neutral wires together to cut down on EMF fields.

Lighting dimmers can be culprits, and APC UPS [Uninterruptible Power Supply] units can back-feed noise into the electrical system.

*What advice do you have for the budget home studio?*

Always have a single source for your audio power. In most bedroom/home studio conversions, one of the biggest issues is having two separate circuits that are daisy-chained back to the panel through some other rooms. Here, you're destined to have a hum or buzz if you wind up leaving two paths back to the panel board of varying length, with different things plugged in along the way. Most small rooms will have a single 20-amp circuit, so go from that to power strips and avoid plugging audio gear into different outlets around the room.

If you need to go beyond a 20-amp capacity, you should call an electrician in to pull in a separate circuit—or two dedicated circuits in that room. Going slightly more upscale, have an electrician run a 240-volt circuit to the room and go from that to my rackmount isolation transformer, which splits it to six 20-amp breakers. Here, the isolation transformer separates you from the house, creating your own small service.

*You can designate certain circuits in a room as "dirty" and use those for lighting and non-audio gear.*

Exactly. If you have three 20-amp breakers feed-

ing a room and put all your audio gear on one breaker and everything else on another, you're already miles ahead of where you were.

*Any surprises you've learned along the way?*

Just because you've hired a good chief electrician doesn't mean the workers on the job pulling wire and putting in plugs are as good. I had this situation doing Don Henley's studio installing an old API console, which was quiet. After putting in three pieces of outboard gear, the noise floor started moving up. I turned off the power, went to the main panel board, pulled all the green wires off the IG ground bus

and started testing them back to the utility and found four shorts. On the neutral bus I found the same thing—five more shorts, shorted to utility. I called the electricians and told them there were shorts on the IG outlets. They begrudgingly came out and fixed the shorts, and everything was dead-quiet. Oddly enough, these faulted outlets were in other parts of the studio I wasn't using. Never assume anything with electricians. ■

*George Petersen is the executive editor of Mix and runs a small record label at www.jenpet.com.*

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# NAB 2009



The Zoom R16 recorder features battery operation for field use.

## UPSIDES AND DOWNSIDES IN A TOUGH MARKET

By the Mix Staff

**N**AB 2009, which took place April 18-23 in Las Vegas, had a lot of the old feel from years past, as well as a few changes you'd expect during a down economy. For instance, the usual craziness of the South Lower Hall (pictured above) was in evidence with packed booths and lots of buzz around the more glitzy video-oriented demos and gear. In the North and Central Halls, however, traffic was down considerably—some estimating as much as 40 percent.

On the upside, many attendees took advantage of bargain hotel room rates, while the airport, monorail and cab lines seemed shorter than usual. Most manufacturers seemed unfazed by the economic situation, as there was no shortage of new gear debuts, most stressing cost-saving solutions for broadcast and post users. For product-demo videos, visit [mixonline.com/video](http://mixonline.com/video).

### Consoles

Calrec Audio's ([www.calrec.com](http://www.calrec.com)) Apollo console offers more than double the processing power of the company's Alpha platform—a channel count that sets a new industry benchmark—and includes a new, highly responsive, user-configurable control surface. At 48 kHz, Apollo's Bluefin2 provides up to 1,020 channel processing paths, 128 program buses, 96 IFB/track outputs and 48 auxes—or half of those numbers at 96 kHz.

Solid State Logic ([www.solid-state-logic.com](http://www.solid-state-logic.com)) had a

strong showing. Its C10 HD digital audio console comes in 24x8 or 32x8 frame sizes, with scalable DSP and I/O options. For mixing inside the box, SSL's new MX4 combines three central system elements: high-channel-count/high-quality audio interface, a versatile software mixer and DSP-powered plug-ins providing legendary SSL audio characteristics. SSL also unveiled The X-Desk, a desktop/rackmount unit with 16 mixdown channels, eight channel inserts, stereo and mono aux sends, talkback, two monitor outs, two stereo effects returns and inserts on the stereo bus.

New broadcast enhancements for Euphonix's ([www.euphonix.com](http://www.euphonix.com)) System 5-B/BP and Max Air digital audio mixing systems include the SH624 router, which integrates those digital consoles with facility routers using the ES-Switch Protocol. The SH624 has 24 MADI ins and outs for a maximum of 1,536x1,536 signal paths at 48 kHz, doubling the size of the current SH612 router.

Studer ([www.studer.ch](http://www.studer.ch)) announced its new RELINK (Resource Linking) I/O sharing system, which extends audio capabilities and can link numerous consoles in a facility's various locations for audio source and control data sharing across a wide network.

Tascam ([www.tascam.com](http://www.tascam.com)) introduced its slick, miniature M-164UF analog mixer, with six mic inputs, EQ and built-in meter bridge, plus onboard digital effects. Its built-in USB 2 can deliver all 16 outputs to a Mac or PC for live or studio recording. Other features include 16-channel mixing, onboard RIAA phono preamp, sub and main output buses, and two aux sends.

Intended for broadcast applications, Yamaha's ([www.yamaha.com](http://www.yamaha.com)) MY8-SDI-D enables the input of HD-SDI-embedded audio signals directly to a host Yamaha digital console or DME (Digital Mix Engine). It features one HD-SDI input with one HD-SDI thru output, and can replace the need for conventional converters previously used to directly feed Yamaha digital mixing products.



Genelec 1038CF monitor system



Calrec Apollo console

### Monitoring

Genelec's ([www.genelec.com](http://www.genelec.com)) 1038CF tri-amplified active monitoring system features a slim enclosure (only 9.25 inches deep!), dual long-throw 8-inch woofers, 5-inch midrange driver and 1-inch dome tweeter. Based on the 1038B monitor, it has 420 watts of onboard power.



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JBL Pro's ([www.jblpro.com](http://www.jblpro.com)) LSR2300 Series monitors come in 5- or 8-inch versions (LSR2325P or LSR2328P, respectively), with an optional 10-inch sub to take the system down to 28 Hz.

The all-digital StudioComm 76DB/77B surround monitoring system from Studio Technologies ([www.studiotechnologies.com](http://www.studiotechnologies.com)) offers simple, effective monitoring of 5.1 surround and stereo audio material. Comprising a Model 76DB Central Controller and a Model 77B Control Console, the system is well suited for use with digital-input loudspeakers.

The Reference Monitor from Sonifex ([www.sonifex.com](http://www.sonifex.com)) is a single-rackspace audio monitor with Dolby decoding. The RM-4C8-HDE1 can decode a Dolby E or Dolby Digital audio stream, letting users visually monitor eight (or 5.1) audio channels and select any two for listening.

The Headzone PRO XT from Beyerdynamic ([www.beyerdynamic.com](http://www.beyerdynamic.com)) is an updated version of the company's innovative Headzone system that uses DSP technology to provide headphone-based 5.1 surround sound reproduction using a patented ultrasonic Head-Tracking system, which locates the orientation of the listener's head with respect to the source material and adjusts the audio accordingly.

### Mics, Mics, Mics

AKG ([www.ake.com](http://www.ake.com)) brought new life to its classic C 747 and C 3000 mics. The updated C

## CERTIFIED HITS

### Mix's Top 10 Product Picks From NAB

Even with this more subdued NAB expo, there were lots of innovative audio products. Picking the show's Top 10 debuts wasn't easy, but here are our *Mix* Certified Hits from NAB, listed alphabetically.



- Audio-Technica BP896 lavalier mic
- Calrec Audio Apollo console
- Dolby Laboratories Dolby Pulse
- Genelec 1038CF tri-amplified active monitoring system
- JBL Professional LSR2300 Series monitors
- Samson R16 recorder/interface/controller
- SmartSound FCP (Final Cut Plug-In)
- Solid State Logic C10 HD digital audio console
- Sony Creative Software Vegas Pro 9
- Studio Technologies StudioComm 76DB/77B surround monitoring system

747 V11 maintains its predecessor's operational excellence, while the new C 3000 retains the characteristics of the popular original but with a sleek finish.

The Sennheiser ([www.sennheiserusa.com](http://www.sennheiserusa.com)) 2000 Series is a professional, entry-level wireless mic system, with handheld or bodypack transmitters. For monitoring, users can combine the diversity receivers of the series with single or twin monitor transmitters.

Audio-Technica's ([www.audio-technica.com](http://www.audio-technica.com)) smallest lavalier mic offering to date, the BP896



Sony Creative Software's Vegas Pro 9 HD video/audio-editing software

subminiature omnidirectional condenser has a capsule measuring a mere 2.5 mm in diameter, making it ideal for applications requiring minimum visibility.

Hosa ([www.hosatech.com](http://www.hosatech.com)) is distributing Da-Cappo shotgun mics from Australia. The Location Pack bundles three shotgun mics—a 14-inch mini for on-camera, and medium (17.4-inch) and 22-inch long bodies for boom use—all in a travel case with power supply.

The CL-2 Boom Pole Remote Fader from Sound Devices ([www.sounddevices.com](http://www.sounddevices.com)) offers convenient control over its 788T multi-track field recorder. Connecting to the 788T's proprietary C.Link port, the CL-2 offers a single fader that can be programmed to control any input or track on the 788T. Two user-programmable switches on the remote unit can operate several critical functions on the 788T, including remote-record activation.

### Studio Essentials

Dolby ([www.dolby.com](http://www.dolby.com)) bowed Dolby Pulse, the newest solution for online, mobile and broadcast markets. This lets broadcasters deliver stereo and 5.1-channel audio at the lowest bandwidth rates while maintaining high audio quality. As it includes Dolby metadata, Dolby Pulse is the one HE-AAC solution that eliminates the need for a stereo simulcast within a 5.1 broadcast, further reducing bandwidth.

Sony Creative Software ([www.sonycreative.com](http://www.sonycreative.com)) showed its Vegas Pro 9 software, the latest version of the HD audio/video-editing application. Vegas Pro 9's customizable interface offers optimized viewing and enhanced usability, as well as significant improvements for pro video editors, including direct browsing and import of Sony XDCAM EX footage, native file support for the Red One camera, compress to MXF file format during capture from SD/HD-SDI sources, a scalable 4k workflow, and powerful new effects and enhancements.

SurCode for DTS-HD from Minnetonka Audio Software ([minnetonkaaudio.com](http://minnetonkaaudio.com)) comprises an encoder and decoder plug-in pair: SurCode Encoder for DTS-HD for Compressor and SurCode Decoder for DTS-HD for QuickTime.

Lexicon's ([www.lexiconpro.com](http://www.lexiconpro.com)) PCM96 surround reverb/effects processor delivers 50 new Lexicon reverbs, delays and modulation effects, along with more presets, configuration options and additional I/Os. The PCM96 Surround can function as a control-only insert or FireWire streaming audio plug-in inside any Mac VST or Audio Units software.

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The FCP (Final Cut Plug-In) from Smart-Sound ([www.smartsound.com](http://www.smartsound.com)), creators of the Sonicfire Pro 5 plug-in, provides interoperability between Final Cut Pro and Sonicfire Pro 5. This lets users set markers in Final Cut, which enables Sonicfire to calculate the exact amount of music needed.

Mac networking expert Small Tree Communications ([www.small-tree.com](http://www.small-tree.com)) offers scalable hard drive solutions for facilities running Final Cut Pro and Pro Tools. The affordable new 600MB/s GraniteStor solution works with the Apple Xserve and offers editing of FCP video across the network in DV24, DV50, DVCPROHD and ProRes formats.

The R16 recorder/interface/controller from Zoom ([www.samsontech.com](http://www.samsontech.com)) offers 24-bit/48kHz linear PCM recording, up to 32 GB of recording on inexpensive SDHC cards and simultaneous 8-track recording. It also features



Solid State Logic's C10 HD digital audio console is available in 24x8 or 32x8 frame sizes.

battery operation for field recording, eight mic inputs, 100 onboard effects, Mackie control emulation and more at a \$399 street price.

The PMD661 handheld digital recorder from D&M Professional ([www.d-mpro.com](http://www.d-mpro.com)) offers a streamlined form factor, upgraded feature set and the use of SD Flash media. Features include improved mic preamps, mic/line in on XLRs and included editing software.

VocalBooth ([www.vocalbooth.com](http://www.vocalbooth.com)) touted its VB Mobile Studios. The largest unit, the 53-foot VB Mobile Studio, is housed in a full 18-wheeler truck trailer with a slide-out feature that includes a VocalBooth, mini-bar, lounge, restroom, control room and performance space.

### More to Come

We'll present other products and updates (including video coverage from the show floor) at [mixonline.com](http://mixonline.com). NAB returns to Las Vegas April 10 to 15, 2010. III

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#### Purple Audio TAV 10 Band Inductor EQ

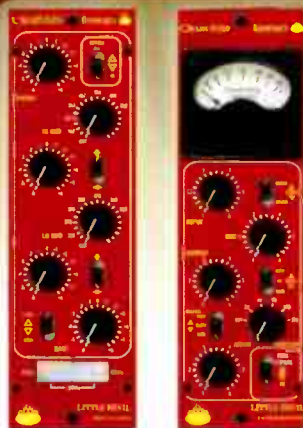
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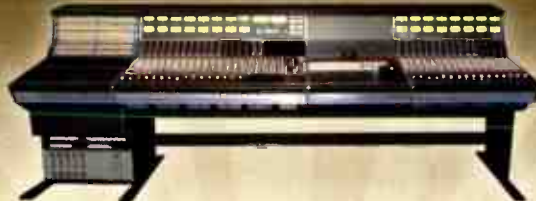
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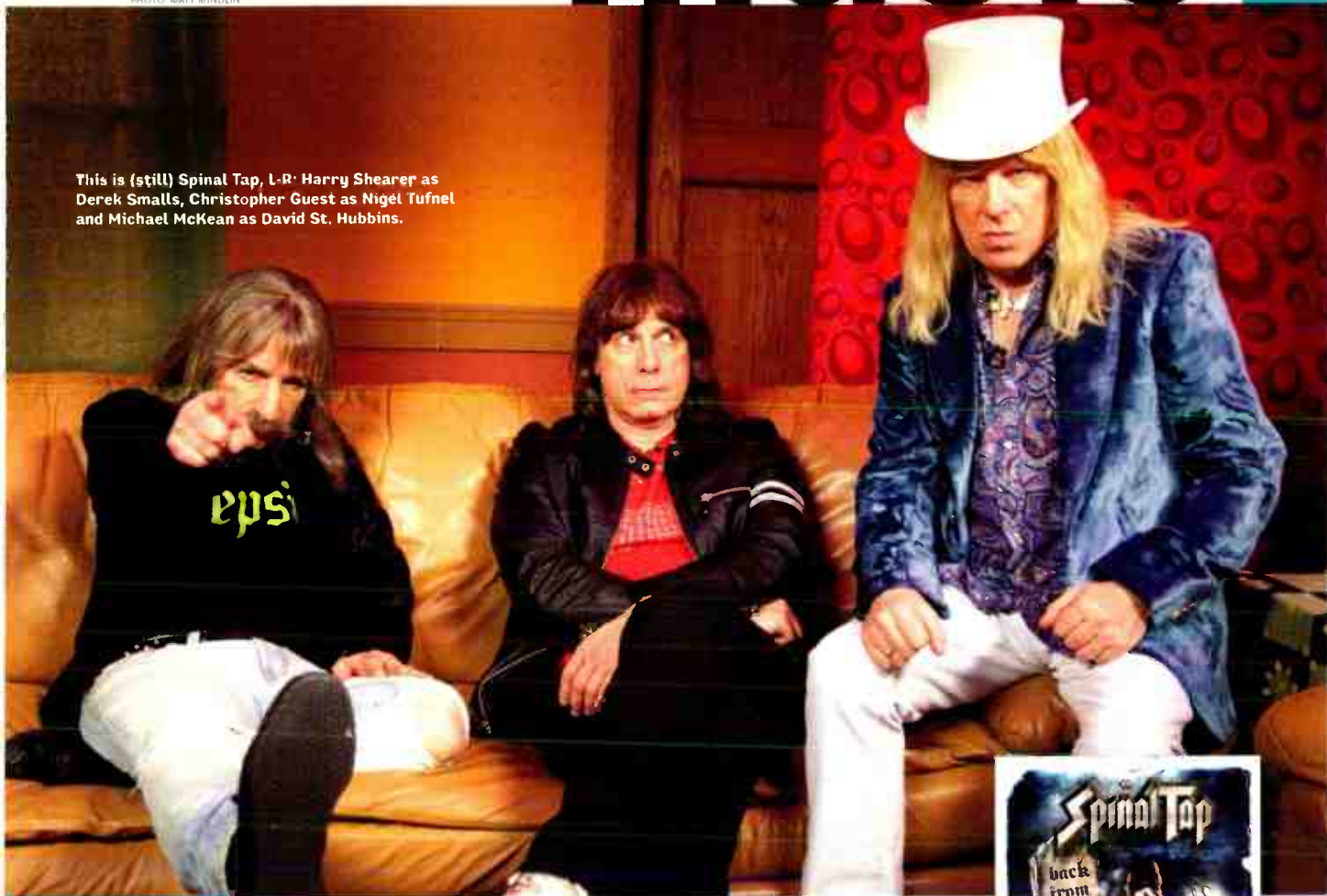
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PHOTO: WATT MINDLIN

This is (still) Spinal Tap, L-R: Harry Shearer as Derek Smalls, Christopher Guest as Nigel Tufnel and Michael McKean as David St. Hubbins.



By Mr. Bonzai

## Spinal Tap

### DOCUMENTARY STARS ARE 'BACK FROM THE DEAD'

During this 25th anniversary of the film and album *This is Spinal Tap*, the band has reunited to set the record straight, once and for all. What a stupendous relief for the countless fans who empathized with Tap's well-documented fall from grace and money. All of the original album has been re-recorded, along with much anticipated never-released material for a total of 19 tracks. The release, out June 16, also includes

a one-hour DVD and a pop-up diorama package that unveils three 12-inch action figures of the band and a proportionally sized Stonehenge.

Tracking for *Back from the Dead* took place at The Village in L.A. with engineer Ed Cherney and longtime Tap collaborator CJ Vanston producing. Guest artists include Phil Collen of Def Leppard, John Mayer, Keith Emerson and Steve Vai.

Cherney mixed half of the thunderous new album at his Studio Ed at The Village, while Vanston mixed the ear-splitting remainder at his studio, The Treehouse. Mastering was done by Gavin Lurssen with publicist Bobbi Fleckman peering over his shoulder.

Vanston explains, "Spinal Tap is re-recording the entire first album because they thought the original album was a hatchet job, just like the movie." With

worldwide attention focused on Tap's triumphant independent release of *Back From the Dead* on The Label Industry Records, a *Rock Band 2* music videogame in the works and a one-stop world tour planned for London's Wembley Stadium, this is surely one of the most anticipated juggernauts of comic/tragic music mayhem ever conceived and/or executed.

And now, join me at The Village with the blond and effervescent David St. Hubbins, the master of the big-bottom bass, Derek Smalls, the moody yet severely gifted Nigel Tufnel, and natty tweakster CJ Vanston.

### Catching Up With the Guys

*We're going to dig under the surface and try to find out a little bit more about this new recording.*

St. Hubbins: We don't care if you dig under the surface, just as long as you sterilize the instrument first.

Smalls: And find the surface buried underneath. *Rumor has it that this was the most difficult Spinal Tap album to record. Is that true?*

St. Hubbins: I wouldn't say that it was the most difficult. We had a good time. We did a lot of the old songs. It was sort of like old wine in, well, not new bottles—the bottles were old, as well—but they are packed in a really high-impact space-age plastic carrying thing.

Smalls: New labels. No corks.

*A lot has happened in the...*

Smalls: Not really.

*No, not really, but some things have happened since the first album.*

St. Hubbins: Oh, yeah.

*And now we have all this digital manipulation. I just wondered if you guys resorted to any of that Auto-Tuning trickery.*

St. Hubbins: Technological jiggery-pokery, is that what you're saying? Oh, yes, we love it. Especially CJ Vanston. We just look over, and there is CJ fiddling with something. We say, "Put that away and get started on the music," and then he starts doing all this digital stuff. He's explaining it to us, but we don't understand half of it. But we know that when he tweaks it, it stays tweaked.

*Ed Cherney had something to do with recording this album. I believe he recorded the tracks. Ed's really known for his work with many, many artists, especially Bonnie Raitt. Do you think that there's a Bonnie Raitt intimacy with this new album?*

Smalls: There's a cut-rate intimacy with this album.

St. Hubbins: I wish Bonnie had shown up. She's always pleasant to have around. You know, she was off waltzing with Castro. She's very politically involved.

Smalls: Which Castro would that be?

St. Hubbins: Fidel.

Smalls: He's dead.

St. Hubbins: No, he's not.

Vanston: Lenny Castro, the percussionist.

St. Hubbins: I think that Ed does bring that chummy quality. Very true.

Smalls: There was chum in the studio every day.

St. Hubbins: That's right, throwing out the chum for us sharks.

*I am interested in what you guys think about the rampant digital bootlegging and ripping off of all the material you worked on for so many years. How do you deal with that?*

St. Hubbins: Listen, we've been ripped off as much as anyone. Some of the basic licks, some of the stuff that Nigel comes up with—wait for five minutes and somebody has ripped it off.

Smalls: We've been ripped off by almost everyone.

St. Hubbins: By the best.

Smalls: By the best, by the f\*\*\*ing best, by every major...

St. Hubbins: That's how they got to be the best.

Smalls: That's how they got their lifestyle, how they got their fancy cars, their great homes in the Hollywood Hills. So now it's the punter's turn. Now everybody can act like a record executive.

*We're really looking forward to hearing the new Spinal Tap material.*

Smalls: We're very proud of "Warmer Than Hell," which has never been recorded, and "Short and Sweet," and our legendary long jam is coming out on this record: "Jazz Odyssey."

St. Hubbins: A couple of the re-dos, as well: "Funky Sex Farm," "Reggae Flower People."

### A Few Words From CJ Vanston

*When did you first work with Spinal Tap?*

Vanston: I played a concert with them in 1991 at the Disneyland Hotel. Dweezil Zappa and Steve Lukather sat in, and it was an amazing night. Drum legend Russ Kunkel was responsible for that, and I'll never forgive him.

*What do you do for Spinal Tap?*

Vanston: I have multiple functions with Tap, ranging from being their producer, keyboard player, musical director, photographer and archivist, et cetera. I also find Chinese restaurants in each city that still use MSG. Hard to find these days, but the boys love their MSG.

*Why do you call your studio The Treehouse?*

Vanston: It's my hideout, my sanctuary, and until recently there were no girls allowed.

*Primary equipment?*

Vanston: The studio definitely centers around Logic 8 and my Macs. Every day I shake my head in astonishment at Logic. It is infinitely customizable—I have dozens of templates for working in video, live mixing, mastering, et cetera. Sometimes I think back to how we used to work and wonder how we got it done. The biggest advantage to today's technology is the ability to jump around from song to song. Since I am an "in-the-box" guy, there are no knobs to recall when switching projects or songs.

I couldn't live without my Mackie Control. That changed my life. To be able to grab a fader and do a quick duck or ride means that every move I do is moving me closer to the finished product. The fact that it's so small is a huge plus for a guy like me, who does most of his own engineering, allowing it to sit to my side instead of gobbling up valuable real estate.

I also have a vintage keyboard room that is full of tasty artifacts from the era of analog synths. There is nothing like these old beasts. They shake the room while the plug-ins lie limp. My Oberheim 4-voice is all over this new Spinal Tap record, as is my Jupiter-8 and Yamaha TX816s. I also use the Alesis Andromeda, a more recent analog synth—I don't know how it ever got made as it is an expensive tool for a small market. Kind of like this band. I am also absolutely loving my ZenDrum! David Haney came up with a superior trigger technology to make drum programming fun and creative.

*How do you get the group's massive drum sound?*

Vanston: We have a massive drummer, Skippy Skuffleton [aka Gregg Bissonette]. We really tried to fatten him up for this record. He lives in a motor home that he parks outside the studio, and we send Mexican food out to him at regimented intervals. Of course, it takes a special engineer to



PHOTO: CJ VANSTON

At Wembley Stadium, London, 2007, left to right: Smalls, Judith Owen, Skippy Skuffleton, Rob Reiner, Tufnel, Annette O'Toole, St. Hubbins, CJ Vanston, Ricky Gervais

capture the sheer violence when Skippy is trying to finish the track to make a run for the loo. That would be Ed Cherney, the only guy Skippy will let closer than 10 feet to his drums.

Blue Microphones sent over some very expensive mics for us to use. The big ones are called Blue Bottles, and I think Skipper Wise at Blue wanted us to try them on vocals. I shied away from this because the guys have a bad track record with mic stands. They're actually rather clumsy and can't be trusted with expensive equipment. So we used the Blue Bottles as overheads, out of harm's way. They sounded fantastic.

#### **How do you get that huge bass sound?**

**Vanston:** Derek has an amp that has tubes from a Russian fighter jet in it. Some guy in Latvia built the electronics. The speaker cones are actually woven by hand, although we recently discovered that those hands were children's hands in China. After a long deliberation, we decided that only enhanced the childish innocence that Derek brings to the band. Ed also uses some Tube-Tech multi-band compressor on it to rein in the terror that is Derek's bass part.

#### **How do you get that breathtaking guitar sound?**

**Vanston:** What is interesting is how well David St. Hubbins and Nigel Tufnel complement each other's guitar sounds. Nigel, as you know, has his amps built special—at least the knobs are special—but David is happy with whatever happens to be in the studio. We used amp boxes to keep the leakage to a minimum. The Village has a really great studio [D] that has lots of nooks and crannies to put all the extra cabinets that Nigel and David use. But when it comes down to it, it's the sheer rage that they both play with. I put down a ban on all therapy during the making of this record. The last thing we want is a bunch of happy guys playing all la-la rainbows and daisies.

#### **How do you get those superhuman vocals?**

**Vanston:** Well, I insist on cutting them live, all three guys in the room, no tricks. Then we comp them, tune them, compress them, fix the timing issues, use special de-essers that take the natural harshness out of their voices, fly all the choruses and re-cut whatever isn't working. All in all, we try and keep it natural and live.

#### **What parts do you play and why?**

**Vanston:** I lean toward simple parts that speak above the din. That can be a challenge with a band this loud. Plus, nobody really wants to hear the keyboards. I think that is Viv Savage's fault; he really ruined it for me, he painted in broad swaths. I will say that there are literally hundreds of subliminal parts lurking below the

surface for the true fans. Keith Emerson was a huge influence on me, yet I'm unable to use any of that influence for this band on this record. There is just no room. So I tend to distort things so the guys think they are guitar sounds, thus they stay on the record.

### **More From the Lads**

**Derek, you and your bass. How do you stay ahead?**

**St. Hubbins:** He's usually a bit behind, actually.

**Smalls:** Behind is where you want to be. You don't want to be ahead. The pocket is behind. Where are the pockets on your trousers? Behind. It's a clue.

**St. Hubbins:** You've done some work on your bass sound over the years.

**Smalls:** Oh yeah, fattened it up.

**St. Hubbins:** Thickened it up.

**How?**

**Smalls:** Oh, just working with different pickups and different kinds of strings.

**Tufnel:** Mainly, his fingers are fatter now. That helps. Chubby fingers.

**Smalls:** It's true. Hard to get fatter than these fingers.

**St. Hubbins:** Squat little bastards.

**Smalls:** Sausages.

**Like a farmer.**

**St. Hubbins:** Like a Sex Farmer.

**David, you have such an incredible singing voice.**

**Did you have training as a boy?**

**Tufnel:** He had training as a boy...

**Smalls:** But it didn't take.

**St. Hubbins:** I had training with a boy. I don't discuss that much. I was going to say that I used to sing with the choir in church. I didn't. I sang along with the choir.

**Smalls:** You were outside the church.

**St. Hubbins:** I was outside the church having a smoke and I heard them and I was inspired and I would sing along. But I never sang publicly until I became a rock 'n' roller.

**Tufnel:** We used to be outside and the choirmaster used to come out, and say, "Hubbins, get in here." He said, "No, I'm not doing it." He used to take a drag and then flick his cigarette away. Always a rebel, even then. Nine years old. Beautiful voice, even as a child.

**St. Hubbins:** Thank you very much. Actually, my mum was thinking of having me castrated to keep that nice falsetto.

**Vanston:** Castrati.

**St. Hubbins:** I talked her out of it.

**Smalls:** What didja tell her?

**St. Hubbins:** I said, "Put down that knife mum."

**Tufnel:** It was actually a carrot peeler. Horrible thought.



**Producer CJ Vanston (seated) with engineer Ed Cherney in Studio Ed**

### **Vanston and Cherney Together**

*The sound is as big and bad as any heavy metal out there. Were you trying to surpass all the metal competition?*

**Cherney:** Well, the sound comes from the musicians. That is what Spinal Tap sounds like. If you can capture that by putting some microphones up and opening them up, that's what you get. Big, big and more big.

**Vanston:** And angry.

**Cherney:** Bitter. They're not very nice anymore. *Yes, I noticed. One of them told me to f\*\*\* myself during my interview with them.*

**Cherney:** Only one told you that? All of them told me that. You want to know the truth about recording Spinal Tap? They are really good musicians, and some people might not know that. Basically, you set them up in a room and they are all sitting together and they can see each other and they play the songs. That is the secret. Put some microphones up and capture their performance.

**Was much improvisation done in the studio?**

**Vanston:** No, we rehearsed for a week before we came in here and played the songs. There's not a whole lot of wizardry going on. You are hearing live tracks of what we cut in the room. There might be a little overdub solo here and there, and we did all the background vocals separately. But the band plays great. They rock.

**Cherney:** And then we come in here and make it just a little bigger than life so that it sounds good on your iPod.

**Did you record the original tracks digitally?**

**Cherney:** We recorded through an analog console, but we recorded to digital for convenience. We did it mostly because of "Jazz Odyssey," which was over 40 minutes long. If we had used tape, we would have lost three-fourths of the performance.

**Vanston:** Which could have been a good thing. Maybe we should have recorded analog. One in-

interesting thing about Studio Ed is that he uses a combination of Pro Tools with a console, the Yamaha DM2000—a hybrid setup that enables him to use outside compressors like this monstrous Tube-Tech multiband compressor. He's got a Dimension D here, he's got the Publison...

**Cherney:** Here at Studio Ed I have set it up to have the best of both worlds. The big compromise, you might say. In the world we work in now, you have to have a room like this that costs about \$150k, but in the old days it would have cost \$5 million.

You have to work affordably. I would rather be in a big studio, with a big console, but I built this place so I can accommodate the budgets that are the reality of our fabulous business today. I was able to make the compromise between mixing in the box and being totally digital, to being able to come outside the box and add some iron, some tubes, and get more warmth and depth and weight to the music.

**CJ brought in his arsenal of vintage synthesizers and keyboards for tracking this Tap album. Was that like a step back in time?**

**Cherney:** I don't think CJ has ever really gotten out of 1978, to tell you the truth.

**Vanston:** That's why I work with Ed—he brings me into the '80s.

**Studio Ed is up here on the third floor of The Village. Does that lend itself to using the big rooms downstairs when you need them?**

**Cherney:** Absolutely. These days, just about everyone has a studio at home. I certainly did and it gets lonely. And when people come over, you have to clean up. At a studio like this, there are people who would like to become engineers and they take care of that cleaning up for me. It's a lot better than asking my wife.

**And you began cleaning toilets at the studio before you began working with Bruce Swedien.**

**Cherney:** Yes, and I remember my first promotion was a brush.

### Some Last Thoughts From Tap

**What is the true source of all of the angst, the sturm und drang of the band?**

**Tufnel:** I don't know what you're talking about.

**St. Hubbins:** He's talking about what we're so pissed off about. We're not really. It's aggression, but it's a theatrical aggression, really. I'm a fairly happy bloke myself. These two? Who cares! I don't really have an aggressive bone in my body.

**Smalls:** Or any other kind.

**St. Hubbins:** No aggressive organ. I think it's mostly a pose. It's what works. If we were doing

"Singing in the Rain," it would be less aggressive. **Tufnel:** You don't see happy-go-lucky rockers usually, do you? It doesn't fit the image. You like to see a scowl.

**Smalls:** A lot of black.

**St. Hubbins:** Buddy Holly would be the last one to be having a good time. Our style of music—you gotta be a bit aggressive. Don't look for the real sturm or the real drang. You'll be disappointed.

**Tufnel:** Occasionally, it even happens in classical music. Segovia had that: "What the f\*\*\* are you doin'?" Rare for a classical guitarist, but he was just in everyone's face.

**St. Hubbins:** For a couple of years there he would smash the guitar at the end of the act.

**Tufnel:** Yeah, beautiful guitars.

**St. Hubbins:** Cost hundreds of thousands of dollars and he'd smash them on the stage.

**Tufnel:** And then he'd say, "What are you lookin' at? What the f\*\*\* are you lookin' at?" People would just back off, ya know? And he was a small guy, an old man, eventually.

**St. Hubbins:** Always. He was born at the age of 47.

**Smalls:** Don't mess with Segovia.

**St. Hubbins:** No, don't screw with Segovia.

**Smalls:** Give him a wide berth. III

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# FAIRLIGHT

## STIMULATES THE MIX

L to R: Becky Stark, Shara Worden, Chris Funk, Colin Meloy, John Moen, Nate Query, Jenny Conlee

# The Decemberists

## CONCEPT ALBUM STRETCHES PORTLAND BAND

By Chris J. Walker

In an era when attention spans are short, songs are often dominated by repeated samples and the album format is becoming a relic, Portland-based band The Decemberists are a distinct anomaly: a group dedicated to the long form. *The Crane's Wife*, their 2006 major-label debut for Capitol (after a few indie releases), was an hour-long, late-'60s/early '70s English folk/rock-style piece inspired by a Japanese folk tale. It clearly wasn't suitable for Top 40 or so called "modern rock" radio, yet it made it as high as Number 35 on the *Billboard* Top 200 album chart and was voted the favorite album of the year by NPR listeners.

Now comes *The Hazards of Love*, singer/leader Colin Meloy's challenging and dynamic 17-song fantasy Brit-folk/rock suite about a girl named Margaret and various strange characters and places. Meloy and guest vocalists Becky Stark and Shara Worden sing the parts of three characters in the work, which Meloy originally conceived as a musical. The other four Decemberists are keyboardist Jenny Conlee, guitarist Chris Funk, bassist Nate Query and drummer John Moen—and all of them added a multitude of instrumental textures to this music.

By phone from the Portland studio where he does much of his work, *Hazards* producer Tucker Martine—who also co-produced *Crane* with Death Cab for Cutie's Christopher Walla—recalls his initial reactions to Meloy's latest: "I braced myself for a big-time commitment and cleared

out a lot of my schedule. I knew it was going to be perhaps the most ambitious undertaking I've been a part of in terms of record-making."

Martine feels that although *Crane* had several songs that tied together, *Hazards* is a more true "concept record," because if any one of the songs on *Hazards* were removed, the recording wouldn't be coherent. "That was also a little bit of a new challenge," he notes. "Typically, when you're working on an album, if a song is giving you too much trouble and you've tried everything, there's a point where you might decide to drop that song from the record. We weren't afforded that luxury, and I found it very exciting."

From August through October 2008, Martine recorded the band at Kung Fu Bakery Studio in Portland, the same facility used for *Crane*. The producer/engineer cut all the basic tracks with as many musicians playing together as possible to tape—a Studer 820 2-inch deck at 15 ips through an SSL G Series console.

"Bands don't really care about room sound and all that stuff studio people put money into," Chris Funk, the band's lead guitarist, points out after a rehearsal. "We've recorded in many places, such as an old church, and have learned that a good environment is a proper and comfortable studio, because it always comes up to go to a castle in Ireland or try to find a cool place. Instead, we said, 'Let's just go somewhere by our house, with a burrito cart

close by and we can go home at night.'

"As a band, we were arranging, rewriting, and learning the material in the studio," Funk continues. "We played everything live and kept some drum takes from the initial arranging period. But it was a lot of sifting through material to figure out what went where.

It ended up being a lot of overdubbing once we got into the fluid storyline." Due to an enormous amount of editing required for *Hazards*, especially for the song transitions, everything was later transferred to Pro Tools. Martine kept the sound warm

by using API, Neve and Millennia preamps for the extensive array of old ribbons and other mics used. For Meloy, Stark and Worden's vocals, Wunder Audio CM-7s were put into action.

In addition to playing electric and acoustic guitars, Funk also contributed parts on pedal steel, banjo, piano, drums, hammered dulcimer, percussion, synthesizer, mandolin, autoharp, marxophone, hurdy-gurdy and bouzouki. "You can get carried away," he says wryly, "and for a while The Decemberists were into 'instrument novelty.' But now we've gotten really good at arranging and writing parts that make them sound like they're supposed to be in the songs.

"We've become obsessed with British folk and folk-revival music, including Fairport Convention and Richard Thompson, along with Gentle Giant and prog-bands. The song 'The Hazards of Love 1' is like a straight-up Pentangle rip-off in my mind," he says with a laugh.

Mixing was done at Supernatural (located on the outskirts of Portland) during late October 2008. Martine chose the studio because it has an API Legacy that sounds great and had enough inputs for *Hazards'* densely layered songs (some of which also feature strings). "It took me about two-and-a-half weeks to mix it," Martine says. "The other bandmembers came out a couple times, but I mostly talked with Colin over the phone and e-mailed him mixes before he signed off on them.

"[The CD] made more and more sense each day we worked on it, even up to the last mix. For real fans of music and albums, this type of record isn't being made much anymore." ■





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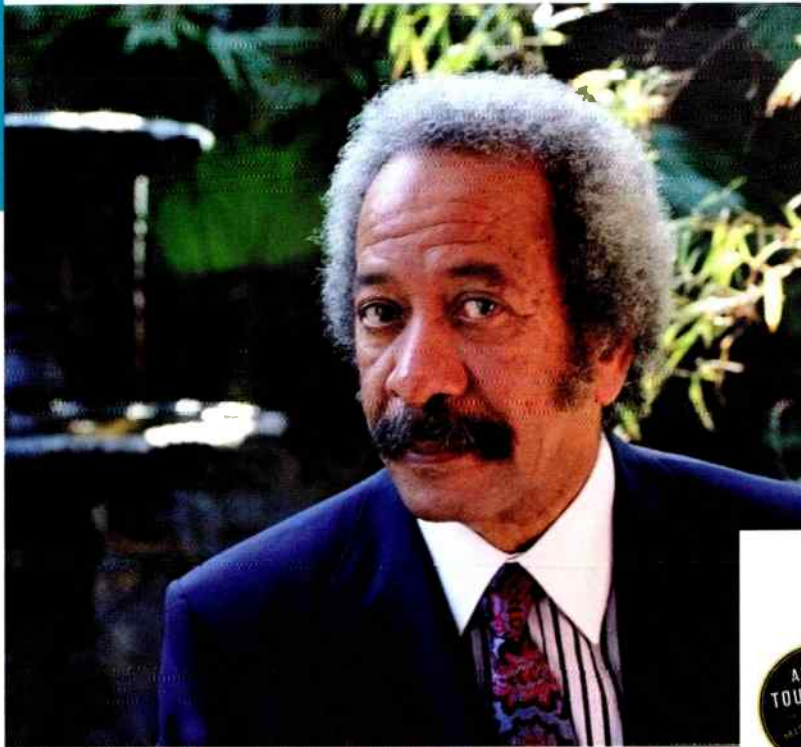
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# Allen Toussaint

NOLA LEGEND EXPLORES EARLY JAZZ, BLUES

By Chris J. Walker

Allen Toussaint has long been one of New Orleans' most revered artists: a quintuple threat as songwriter, arranger, producer, pianist and singer. The 71-year-old is probably still best known as the writer of such Crescent City classics as "Workin' in a Coal Mine," "Ya-Ya," "Everything I Do Gohn Be Funky," "Yes We Can Can" and "Java," but his arranging and production work has transcended city and state borders.

Even before Hurricane Katrina forced him out of New Orleans—exiling him to New York—Toussaint frequently worked outside of his hometown. In fact, just prior to Katrina, he and a number of other top singers—including Ann Peebles, Billy Preston, Mavis Staples and Irma Thomas—recorded the emotion-packed album *I Believe to My Soul* at Capitol Studios in Hollywood. That disc was produced by roots-oriented singer/songwriter Joe Henry, and then after Katrina, while Toussaint was in New York, he also contributed songs to the superb anthology *Our New Orleans*, also produced by Henry. In 2006, Toussaint and Henry teamed up with Elvis Costello to make the well-received *River in Reverse* CD.

Though Toussaint has put out several fine al-

bums under his own name, he is known more as a consummate collaborator, and that reputation is confirmed on *The Bright Mississippi*—an exquisite, mostly instrumental tour of early blues-influenced jazz. With his sure, inventive piano playing in the foreground, Toussaint and a small group tackle a dozen tunes by the likes of Sydney Bechet, King Oliver, Jellyroll Morton, Django Reinhardt, Thelonious Monk and Duke Ellington.

"This was Joe Henry's brainchild to do all those wonderful standards: 'Solitude,' 'Day Dream' and 'Egyptian Fantasy,'" Toussaint says. "I considered [those songs] very serious and dear, but had traveled on another path." Henry pitched the project to Toussaint and to Nonesuch Records, and he picked the musicians: clarinetist Don Byron, trumpeter Nicholas Payton, acoustic guitarist Marc Ribot, bassist David Piltch and drummer/percussionist Jay Bellerose, along with special guests Brad Mehldau (piano) and Joshua Redman (tenor sax), on one track each.

Henry says, "I started going through my iPod, and found a lot of material that [Toussaint] could really own or interpret in a very authentic way. We did talk about doing it in New Orleans,

but it had much more to do with the musicians I wanted in the room." The producer picked Avatar Studios in New York because of its large tracking space, where he had the players form a circle around Toussaint's piano. The live sessions took place March 19 to 22, 2008.

Henry wanted a lot of natural bleed and room ambience, and he specified the use of ribbon mics as much as possible. Other details of recording

and equipment were left to engineer/mixer Kevin Killen (Elvis Costello, U2, Peter Dinklage). "The room has such a wonderful sound it's almost impossible to make a bad-sounding record there," Killen says. "When I first started out at studios in Dublin, a lot of the sessions were acoustic in nature, but

not in the jazz idiom. That part didn't bother me. I was more concerned about the separation and getting a sense of realization at the same time, especially from putting the drums in the room. Fortunately, the musicians were very good at tempering their dynamics to the sound of the room."

Among the mics Killen used were Electro-Voice RE-20, Shure SM7 and SM57, Yamaha MS-10 sub kicks, AKG 451 and Coles 4038 (overheads) for drums; for Bellerose's assorted percussion devices, Neumann KM-84s; for acoustic bass and the guitar, a combo of a KM-86 and Royer 122; for piano, Schoeps CMC 5 and Royer SF-24; trumpet was captured with an RCA 44 and Royer 121; and clarinet with a Neumann U67 and Royer 121. Room mics were Neumann U87s suspended and Royer R-121 on the floor. No outboard preamps were used; everything went directly to the Neve 8088 console, with very little EQ and compression, to Pro Tools.

"The mixing occurred a couple months later at Sevonay Sound in Chelsea," Killen says, "[though] I had done roughs at Avatar, with the balancing set. I found a basic outline that worked on all the tracks, adding some reverb, and was done in three days. Allen listened to it at Avatar, made some comments, and after several quick adjustments it was done. It was great fun, and I was delighted that everyone thought the record sounded great." ■



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# CLASSIC TRACKS



## Blue Öyster Cult's

### "(DON'T FEAR) THE REAPER"

By Jeff Forlenza

It still ripples through our culture. Released more than 30 years ago, Blue Öyster Cult's "(Don't Fear) The Reaper" has become a touchstone. It is still heard on classic-rock stations, in movies (*Halloween* and others) and even in videogames (*Rock Band*). And who can forget *Saturday Night Live*'s "more cowbell" skit, which parodied a behind-the-scenes look at the track's production.

Appearing on BÖC's *Agents of Fortune* album, "(Don't Fear) The Reaper" peaked at Number 12 on the *Billboard* Pop Singles chart in October 1976—surprising for a hard-rock band known for its literate lyrics. But like a velvet hammer, "Reaper" is paradoxically soft and powerful. It's built around an immediately compelling guitar riff. The vocals speak of bravely facing one's mortality.

Blue Öyster Cult got their start in 1967 in upstate N.Y. when guitarist/vocalist/songwriter Donald "Buck Dharma" Roeser and drummer/vocalist/songwriter Albert Bouchard started a band. They met up with Sandy Pearlman, who

was a contributor to the rock magazine *Crawdaddy*, and he became the band's manager, producer, lyricist and mentor. Pearlman created the band's name and signature icon (a cross merged with an upside-down question mark). He also came up with stage names for the bandmembers; only Buck Dharma kept his nickname.

The band recorded their first demos in a New York City 8-track jingle studio owned by David Lucas. Pearlman brought those demos to his friend Murray Krugman, who was a product manager at Columbia Records. Krugman arranged an audition with Clive Davis, who signed them to a record deal in 1971. BÖC's Columbia debut was based on the demos recorded at Lucas' studio. The next two albums, which achieved Gold Record status, were recorded in Columbia/CBS Studios. During this time, the band became famous for their live shows—even sharing the stage with Black Sabbath on the notorious "Black and Blue" tour—but they had yet to score a hit single.

The band wanted more autonomy on the choice of recording studio for their fourth studio record, *Agents of Fortune*, and chose to work at Record Plant New York City. "Cheap Trick had been there, Aerosmith had been there, Blondie was there," recalls Roeser, who still tours with BÖC. "We felt that we needed to access this pool of success and talent so that we could sell some records."

Before heading into the Record Plant, each member of the band acquired newly affordable "prosumer" TEAC 4-track recorders to aid in their songwriting. Using his TEAC 3340S reel-to-reel and a couple of mics, Roeser recorded a demo of "(Don't Fear) The Reaper" in his spare room.

Roeser was thinking of his own mortality when he wrote the song. "It's a song about fate," he explains. "The idea of the song came from a worry that I wasn't going to live long. The riff came out of the ether; it just came to my fingers. Then the first two lines of the lyrics came the same way. I recorded some of the vocals, and then the idea of the song came to me. That was my first experience with multitrack recording. It definitely changed the way Blue Öyster Cult wrote and arranged songs. Once we started writing songs using the multitrack recorders, our demos got more fleshed-out and thought-through."

Pearlman, who currently teaches at McGill University in Montreal, noticed the change in the band's songwriting and arranging. "In 1976, a whole bunch of cheap, but fairly decent, multitrack recorders were available," he says. "The members of the band began making more elaborate home demos. One of these demos was Buck Dharma's 'Reaper.' I heard that demo, and I thought, 'This is one of the greatest songs I've ever heard!' I immediately recognized the guitar riff was not just box office but something extremely deep."

"The signature guitar riff was recorded with a Gibson ES175 that belonged to Murray Krugman," Roeser recalls. "He brought it in, and said, 'Try this guitar.' That's what I happened to be playing when we recorded 'The Reaper.' It was recorded out of a MusicMan 410 combo amp. The lead solo was an overdub recorded with my 1969 Gibson SG running through the same amplifier."

Shelly Yakus has recorded hit records for some of the biggest rock acts, including John Lennon, Tom Petty, Alice Cooper and U2. Currently designing sound for *mystudio.net*, Yakus was VP of Record Plant New York City when BÖC brought in the *Agents of Fortune* project. To capture the song's signature guitar riff, Yakus record-

ed four tracks of guitar: a direct feed, one SM57 and one Beyér 160 close-miked on Roeser's MusicMan 410 combo amp, and one Neumann U87 as a distant room mic. The guitar tracks were sent through an EMT plate and then recorded on an MCI 24-track. A 15 ips tape delay was recorded right on some of the guitar tracks during the recording.

Pearlman raves about the Record Plant's gear of the era: "It was just great-sounding tape machines. Great-sounding console," he says. "All these microphones dating from 1948 to 1976. And all this outboard gear. We used more outboard gear mixing *Agents of Fortune* than I had used at any time before that." Some of the outboard gear used on "The Reaper" included Fairchild mono compressors, API 560 graphic equalizers, Flickinger EQs, and Roger Mayer and Pye limiters. (Roy Cicala was the driving force behind Record Plant New York City in those days and helped provide the top-notch gear.)

"(Don't Fear) The Reaper" stands apart from other BÖC songs because Roeser sings a mellow lead vocal instead of the band's primary vocalist, Eric Bloom, who is known for his edgy style. Roeser sang softly into a Telefunken U47 tube mic, which Yakus says, "lit up Buck's voice. The



**Blue Öyster Cult, circa 1976, from left: Allen Lanier, Eric Bloom, Albert Bouchard, Joe Bouchard and Donald "Buck Dharma" Roeser**

room we recorded in was very dry with carpets and padding on the walls. But the room combined with the outboard equipment had a very cool sound." The vocals went through a Pultec EQ and an LA-2A compressor right to tape.

As for the song's drum sounds, Yakus explains, "A good snare sound adds excitement to the drum kit and the entire song." To achieve

that, he took the original snare track, gated it and then sent it back into the studio, where a snare was resting on top of an upward-facing speaker. A microphone was placed over the speaker/snare combination to capture snare hits. Yakus then blended the original snare with the "augmented" one.

Another distinctive percussion sound is the



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delayed hi-hat at the beginning of the guitar solo. "Record Plant has great-sounding echo chambers," Yakus notes. "I sent the hi-hat into a tape delay and then into the chamber. I EQ'd the tape delay and EQ'd the reverb that came back from the chamber so that it matched the sound of the original hi-hat. Then I fooled with the tempo of the delay."

During the final mix, Yakus worked from the top down: "I started with the voice, added the guitar that carries the song and then I put the rhythm section in after that," he recalls. "I fooled with that balance until it felt really good. Then I added whatever instruments were left."

"Shelly and I were in charge of the mixes," Pearlman explains. "We would do submixes of the rhythm elements until they were solid. Then we would put the submixes through at least two pieces of gear from very different generations—like maybe a mono Fairchild and then an ADR—and we got some really interesting sounds."

The production team worked on Record Plant's unique DataMix console. "The console looked like an upright piano," Yakus says. "The faders were in the usual place, but the equalizers and the meters were like an upright piano. You could hardly see over the top of it into the room.

But that console sounded really, really good. They did Mountain's 'Mississippi Queen' and John Lennon's *Walls and Bridges* on that board."

Yakus explains how he made Roeser's guitar solo stand out in the mix: "We used a 4-track tape machine as a delay machine. We sent the guitar solo into the first track, and then the first track into the second, the second into the third, and the third track into the fourth. We then took an output from all four tracks up to the console, and we would mix all four delays with the original guitar track. We did this while sending the fourth track into the first track using a fader to control the level. At the time, people had daisy-chained channels before, but it was a little unusual to do it with a 4-track."

"The guitar solo and the basic rhythm track were recorded in one take. They were not edited or punched into," Pearlman adds. "We got fantastic analog ambiances from the live chambers and EMT plates. Because we had as many analog ambiances as we wanted, the song has this cloud of unknowing, this infinite extension."

"We did a 5.1 remix of these tapes," Yakus says of the song. It was remarkable to hear what the mid-70s equipment sounded like. The sounds by themselves were decent; it was a good recording. But when you heard it all together, when you put all the faders up, it was special. When that song starts out, in the first few notes, you know it's 'The Reaper,' and it creates this vibe that just takes you over. There are a few songs that can do that, and 'The Reaper' is one of them."

Probably the best-known cultural reference to the song is the "More Cowbell" skit on *Saturday Night Live* from a number of years back. In the skit, Christopher Walken portrays a producer known as Bruce Dickinson, and Will Farrell enthusiastically plays the cowbell as fictional character Gene Frankle. The routine is hilarious, but the original producer of the song was Pearlman; Dickinson was the re-issue producer. To this day, there is still some debate about who played the cowbell part: Both vocalist Bloom and drummer Bouchard claim to have played it. According to Roeser, "The idea of the cowbell was actually David Lucas'. And it's not really that loud."

Roeser's skillfully arranged, recorded and mixed 4-track "Reaper" demo is now available on Columbia's 2001 re-issue of *Agents of Fortune*. "My overriding concern was that the vibe of the demo be preserved," Roeser says. "And I think that was successfully done. The final is very similar to the demo arrangement. In the moment of creation, I had no idea what the world would think of the song. It's been gratifying to see something that has rippled out to the larger culture." III



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PHOTO: JOHN JUMNETON



Performing at The Fillmore (Denver), these fellas (Denver), these fellas (Denver). Left: Joe Trohman (lead guitar/vocals), Patrick Stump (lead vocals/rhythm guitar), Pete Wentz (bass/vocals) and Andy Hurley (drums)

By Candace Horgan

## Fall Out Boy

VOCALS SHINE THROUGH HOUSE RIGS

When punk-pop rockers Fall Out Boy hit the road in support of their latest, *Folie à Deux*, with five other bands (Cobra Starship, All Time Love, Hey Monday, Metro Station and 50 Cent), the band's longtime front-of-house engineer Kyle Chirnside knew he had to cut down his FOH footprint to accom-

modate mixing all the acts. To do so, Chirnside looked toward Midas' new Pro6, a smaller version of the XL8.

"I'm super-excited about this thing," he says. "Midas told me about the XL8, their first digital-format console, which is considerably larger than the Pro6. I worked on it a few times

and fell in love with the sound. I told the people at Midas I was sold on the desk, but the cost had to be worked out with our production management. With cutting touring costs, the XL8 was not affordable for that tour. When I heard Midas was doing a smaller format of the XL8, the Pro6, I wanted to

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get in on it right away, and Midas has been awesome about it. I used it first in Australia, then the UK and Europe. In the U.S. now, we have five bands on this tour, and they all go on this desk. It's Linux-based, so I'm not worried about losing our shows. I've been on every digital console possible, and this desk is the easiest to jump on and function, and it has the signature Midas sound.

"Midas took the guy who designed the Heritage Series and XL Series and made him work with digital people so he could show them what the analog desk was doing to transfer it over to the digital domain," Chirside continues. "Instead of having a footprint at FOH where I have an XL4 and a [Yamaha] PM5D [for the openers] before, now I'm just using this."

Though Chirside did bring some outboard gear, he found he preferred the Pro6's onboard selection. He says that using a TC Electronic D-Two delay as the onboard delay is "a little bit overboard for what I need to use it for. I'd rather just reach over and tap and go. Plus, I always used Distressors before, but then I found these 3-band compressors on the Pro6, so I've been putting those on my vocals instead. They sound really good; you kind of have to mess around with them a bit, so I'm using them instead of Distressors."

One thing that has changed on this tour is that there are no guitar or bass cabinets onstage. Lead guitarist Joe Trohman is using an Engl amp directly into a Palmer PGA-04 ADIG-LB, while guitarist Patrick Stump uses a Marshall DSL 20000 into the Palmer, and for a clean channel sound a Line 6 POD with a direct out. Bassist Pete Wentz is even more simplified, using one line into a Tech 21 SansAmp pedal and one through a Countryman DI.



Joe Trohman provides background vocals while his hands take a rest from fret work.



Front-of-house engineer Kyle Chirside (at the Midas Pro6) has slowly taken away a "performance crutch" from each of the bandmembers.

"We've been taking away all their crutches since day one," Chirside says with a laugh. "It used to be two full stacks onstage, two full bass rigs onstage, full monitor rig, sidefills, no in-ears. Within the last five years, we've taken away one crutch at a time. Now we're sans-everything—no sidefills, no wedges. All the drummer [Andy Hurley] has is a Thumper on his seat. It keeps the stage really quiet."

Asked about the tonal differences between a DI and the moving coil of a speaker, Chirside acknowledges that there are a few, but the Palmers come close to simulating an actual speaker. "We went through a lot of different DIs and combinations for the guitars because it's hard to replicate the sound of a speaker moving. Basically, you turn the Palmer up to the wattage of head that you're using and the output is speaker-emulated. It's not like a speaker moving, but it's pretty similar. It gives them confidence because they can get the tone they want without the cabinet."

With no cabinets onstage, monitor engineer Mike Baehler finds his job a lot easier. "It's all in-ears," he says. "I have seven stereo mixes through Sennheiser GTs, one mono mix and four effects." Baehler works on a Yamaha PM5D digital console, running at 24/96 on an external clock, an Apogee Big Ben, which he says gives a wider stereo image and sounds better.

"I have enough faders be-



Monitor engineer Mike Baehler has seven stereo mixes, one mono mix and four effects coming off the Yamaha PM3D digital console.

cause I have a lot of stuff I have to do, and it's reliable as hell," Baehler says of the board. "It's not very fast, but that's okay. I've been using it for a long time and it works. It's not huge, like the 1D, but it works."

The band also made the switch from Ultimate Ears UE7 models to the UE11s, which Baehler says have a tighter bass. "The bass player loves them. Even me. I'm here two feet from the P.A. and I can tell the definition."

Meanwhile at FOH, Chirnside mixes in stereo, using the Palmers to double up the signal, and runs without any compressors or gates, trying to make the music imitate what the concertgoer sees the performers doing. "When I first started with them, they were just a punk rock band and their songs were all one level—all the same guitar tone, all the same everything," he remembers. "For this album, they've added more dynamics to their songs so I had to adjust to them. The only mics I have onstage are the vocals and the drum kit, so I can get a real clear mix out there."

All the vocal mics are Shure SM58s. The drum mics include an Audix D6 and Shure SM91 on the kick drum, a Shure Beta 98 on the top and a Shure SM57 on the bottom, and Shure SM137s on the hi-hat, overheads and ride. For the toms, Chirnside still prefers the Audio-Technica AE3000.

### Up In the Air

This tour is being heard through a proprietary Clair line array; system tech Dave Coyle (who has worked with Chirnside for four years) is managing the system. The tour is carrying an i-3 system comprising 16 cabinets aside; when Mix

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caught up with the tour in Denver at The Fillmore, they flew eight per side. Rounding out the rig are 12 Clair BT-218 subs and eight Clair FF-2-Hs for front-fills.

Powering the array is a new system from Clair. "We have a new amplifier system called a StakRack so we're using Lab.gruppens, and the Lab.gruppens actually have integrated processing in all of them, so we've eliminated Drive Racks; now, we just have one amplifier handling multiple speakers," Coyle explains. Coyle tunes the system via Clair iO, and Chirnside will make any final adjustments.

"We're carrying enough to do small arenas and sheds, so you come in and find out what can actually fit in the room," Coyle explains. "We shoot the room, take all the measurements and enter it into the Clair AlignArray program, and it will help me with the numbers I have to display on the cabinets, and from there on out it's using your ears. You see what the room has to offer and how loud you can actually get it before the room starts to fight back. In the morning, I do all the tuning and I hand Kyle what I consider to be a flat EQ for him to start with, and he'll tweak it from there. Since we're running with five bands, I usually tune the system a little bit bright and sort out what they actually need for the day."

### Sync It Up

For the majority of the tour dates, the musicians are getting a full-on band mix in their ears, but with The Fillmore date, they also got a click track to help with some of the video syncing, as they were doing an HD video shoot for an iTunes/Live Nation release this year.

For that, Chirnside turned to a Midas DM9696 recorder. "It basically saves everything to WAC files so you can dump it into Pro Tools later or store it as archives," he says. "Midas was gracious enough to send it out so we could check it out. It did glitch last night and shut down on us, but we were able to get it back up and we got the rest of the set, so hopefully we'll get everything tonight.

"The band always has me do their live stuff, which is cool. Patrick and Pete say, 'You've been mixing us for five years; why would we want anyone else doing it?' I mixed their *Live in Phoenix* CD/DVD last year and I've done most of the TV performances that weren't live. It's pretty fun; it kind of opens up my venue a little bit. I don't have to worry about super loud kids screaming; I can sit in a studio and mix a show." III

Candace Horgan is a Denver-based writer.



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# SOUNDCHECK

## Maroon 5/Counting Crows



Maroon 5 lead singer Adam Levine sings through a Shure SM58 wireless mic.



Front-of-house engineer Jim Ebdon

These co-headliners recently finished their North American tour, where Maroon 5 front-of-house engineer Jim Ebdon spec'd the new Clair Global 15 Version 3 prototype. "The P.A. was incredibly consistent, very loud and punchy," Ebdon says. "The high frequencies were super-accurate.

We typically hung 12 15s and 10 15Bs per side for the front hangs, and eight 15s per side on the side hangs. We used eight Prism subs per side and a collection of P2s as in-fills." Ebdon mixed on a DiGiCo D5 for Maroon 5.

As for his mixing style, Ebdon says, "I don't try to make anything that it's not. It's easy to over-EQ and add plug-ins galore, but I mix with my ears and not my eyes. I like to get the source sounds right first, then microphone choice, then a good-sounding console and P.A. system. I then use some reverb and compression to separate and add depth to certain things. The big challenge is to get the vocal on top, and getting a good balance of band and vocal is important to me."

Ebdon was with the band during rehearsals, which helped in selecting the right gear. "When I'm in rehearsals with a band, I like to set up in a separate room. This enables me to clearly listen to what's going on with a pair of studio monitors. I can fine-tune sounds, get a feel of how they play and the dynamics of different songs without the huge reverberant sound of an arena. Then I can EQ the P.A. in my mix with a few 'tweaks' here and there. I ended up using a Focusrite ISA430 for Adam [Levine]'s vocal and a dbx 160x on the bass. I also had a TC 6000 with an ICON remote for reverb effects. I used a Crane Song HEDD192 across the mix."

Ebdon tends to use the same mics (Royer, AKG, Beyer, Neumann, Shure). "Kick drums are sometimes an issue. I like it to be huge but without that awful ear-splitting click at the front of the sound. I ended up with Shure Beta 52 and SM91 mixed together. The mic placement is also important. Quarter of an inch either way is critical—try it!" Levine sang through a Shure SM58 wireless, while guitars took SM57s and Royer 121s.

## tour log

### The Cure

Seasoned performers The Cure recently held a headlining slot at Coachella 2009, where *Mix* caught up with FOH engineer Marc Carolan; P.A. (K1) was provided by Rat Sound. Go to [mixonline.com](http://mixonline.com) for an exclusive photo gallery.

#### How much gear did you bring in?

We brought in a Digidesign D-Show with a Profile surface, FOH control, monitor board, line system and mics.



PHOTOS: DAVE WAIN



Marc Carolan mixes The Cure at Coachella.

#### What is the most important part of The Cure's mix?

It's very much about using the great source they give you and presenting it well. A lot of this is about fine guitar balance and imaging. Both guitars are stereo and you have to be careful about the interaction of their images. Sometimes the bass is not really the bass but a lead "hook" instrument.

#### The sound went out for a bit during their set. What happened?

First time it had ever happened to me or The Cure in their 30-year career! It was a little surreal; I think it took my brain a few seconds to fully realize what had happened. I loved the way the band played on regardless, fully aware the system was off!

#### Where can we find you post-tour?

I have a mix room in Dublin called Suite. We bought an SSL about a year ago, had Andy Munro do the acoustics and did a major upgrade. I work with a lot of up-and-coming Irish acts. I find my live work keeps my studio work fresh and vice versa.

## fix it

### Steve Devino of Granite Rocks Live on Mixing Steve Miller

There is always something new to learn on the [Yamaha] PM5D. For example, you can't really store a song per scene on other consoles for a seasoned rock band because the dynamics are making you work the desk, not the scene. With PM5D's Version 2 software, I am able to go to the mixer's setup and set it up to whatever I may need, making it that much more musical; the console doesn't limit

me. Steve is on Future Sonics ear molds, and two of the other musicians are on ears, plus the guitar tech, and there are five wedge mixes. The great thing about the 5D is that I'm almost playing it like a keyboard; I'm basically mixing for Steve's ears. He used to have one full desk and a separate split just for him. By using the PM5D and going to in-ears, I have eliminated three wedge mixes and sidefills,



so the inputs are open for less EQs and more effects sends. I'm old school; I just need a knob. For monitors, one scene to one song changes your mix dramatically.

## Recher Theatre Gets Five-Day Retrofit

What opened as a single-screen movie theater in 1929 and then as a billiard hall in 1996 became the Recher Theatre (Towson, Md.) in 2000—a 700-capacity, standing room-only venue—due in part to its acoustic qualities and tapered design. Owners Brian, Steve and Scott Recher (all brothers) were soon booking such artists as Iggy Pop, Slayer, Joe Jackson, String Cheese Incident, Liz Phair and many others, drawing from a wide array of local and national talents.

But as with any venue, as time goes on, the need to replace an old sound system became imperative for the club to continue to attract A-list artists. So the owners consulted with RCI Sound Systems (Beltsville, Md.) to come up with a solution. “There were some major obstacles to overcome,” says RCI Sound Systems’ Keith Nachodsky. “The owners wanted to improve sightlines to give concertgoers a better view of the stage. And, as the Recher Theatre hosts all

types of concerts, the new system would need to faithfully reproduce all genres of music.” The company spec’d a NEXO Alpha System, citing its ability to handle high SPLs and faithfully reproduce detailed musical passages at lower levels.

The install team only had five days to complete the project as the theater had performance dates already scheduled. A Yamaha M7CL-48 was installed at the front-of-house position, while a Yamaha LS9-32 (expanded to 40 channels) now sits at monitor land. Four NEXO Alpha M35 and four Alpha B19 are flown above the stage, and two NEXO PS105 are installed on the downstage lighting truss. Six NEXO Alpha S2 subs were installed under the stage, along with 10 monitor mixes including sidefill monitors with subwoofers and a drum fill monitor with subwoofers. NEXO PS15 monitor speakers with LS12 subwoofers were also installed, with NEXO processing used for both mains and monitor systems. The system is powered by Yamaha Tn-Series amps. A PC at FOH networks with the M7CL and the LS9 consoles, and a new intercom was installed between the FOH and monitor consoles. RCI also brought in a transformer-isolated splitter snake, Shure and Sennheiser mics, and Whirlwind and Countryman direct boxes, microphone stands and cables. After the project was completed, all components were tested and the system equalized using Smart Live.



The new system features a Yamaha M7CL-48 console at FOH.

## load in



The recently opened *West Side Story* production at the Palace Theatre on Broadway (New York City) finds sound designer Dan Moses Schreier working on a Studer Vista 5.

The Music & Audio Institute of New Zealand replaced its Allen & Heath GL2000 board with a 32-channel GL3800 for its live sound course... Iron Maiden’s latest outings employed an EAW P.A. provided by Nashville-based Brantley Sound Associates... the band’s longtime SR provider ML Executives (UK) furnished consoles and monitors... PA Plus has purchased 130 Crown I-Tech HD amps... Ting Tings FOH engineer Trevor Gilligan mixed through a Capital Sound Hire—provided Martin Audio W8LC company line array enclosure... Late Night With Jimmy Fallon house band The Roots are now performing wearing Future Sonics Ear Monitors.

## road-worthy gear

### Mackie HD Series Powered Speakers

Slated to ship this month, Mackie’s HD Series high-definition powered loudspeakers have up to 1,800 watts of Class-D amplification and active crossovers with onboard 3-band sweep-mid EQ, transducer time alignment and phase-correction circuitry. The \$1,249/list HD1521 two-way and \$1,499 HD1531 three-way speakers feature custom

transducer design and system tuning by EAW, with 15-inch neodymium woofers and 1.75-inch titanium compression drivers and a 6-inch mid driver/Wave-Front™ mid/high horn on the HD1331. The all-wood cabinets have a pole-mount socket and 12 integral fly points for horizontal or vertical rigging. [www.mackie.com](http://www.mackie.com)

### AKG D7 LTD Vocal Mic

Featuring a high-gloss chrome finish is AKG’s new reference dynamic microphone, the redesigned, limited-edition D7 LTD. The 7.3-inch, 12-ounce mic has a Laminate Varimotion diaphragm, integrated 80Hz highpass filter to eliminate all handling noise and a replaceable inner windscreen. This supercardioid model has a 70-20k Hz frequency response and handles SPLs up to 156 dB. In addition to the new D7 LTD, other available models in the series include the D7 S (with on/off switch) and the D7 WL1, a threaded interchangeable capsule head for use with AKG WMS 4500 wireless models. [www.akg.com](http://www.akg.com)



### JBL ScreenArray Cinema Speakers

Designed for high-end/digital cinema systems, JBL second-generation ScreenArray loudspeakers feature new large-format, 3-inch, neodymium titanium diaphragm HF drivers; new low-distortion Optimized Aperture waveguides; Screen Spreading Compensation™ horns optimized for perf screens; and an improved, patented crossover design. Lows are handled by JBL’s Differential Drive, Direct Cooled™ 15-inch woofers. The line includes the 4732, 3732 and 3731 three-way systems (available in tri-amped and bi-amped versions), and the 4722 and 3722 two-way speakers (offered as bi-amped or passive systems). [www.jblpro.com](http://www.jblpro.com)



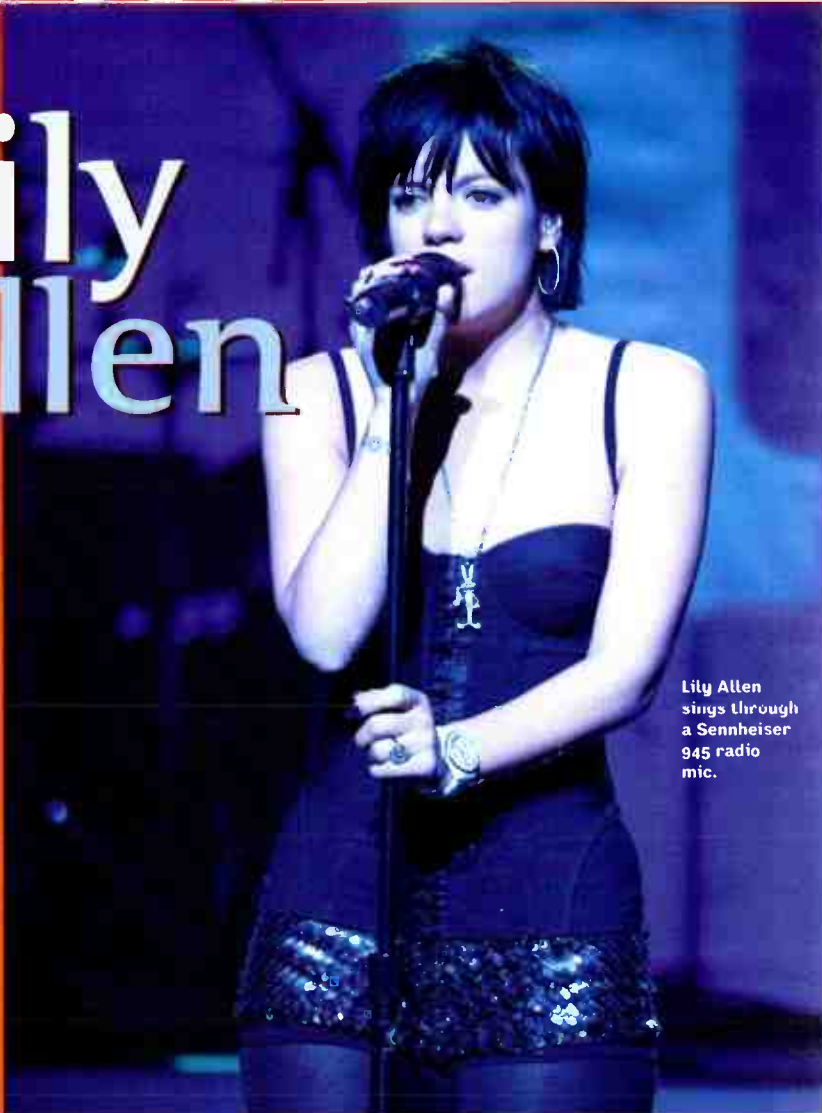
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Photos &amp; Text by Steve Jennings

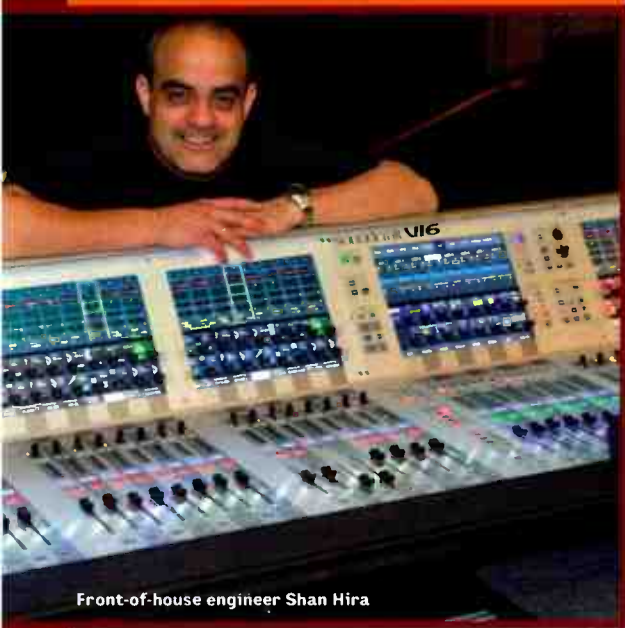


## Lily Allen

After jet-setting through her European dates, vocal chanteuse Lily Allen hit The States, playing medium-sized venues to support her latest release, *It's Not Me, It's You*. (Check out the February 2009 *Mix* for an interview with producer Greg Kurstin on recording the recently released album.) *Mix* caught up with Allen and her four-piece band—guitarist Martin Waugh, bassist Morgan Nicholls, keyboardist Eddie Jenkins and drummer Jonny Jenkins—at San Francisco's Warfield Theatre.



Lily Allen sings through a Sennheiser 945 radio mic.



Front-of-house engineer Shan Hira

Front-of-house engineer Shan Hira is mixing on a Soundcraft Vi6, using all onboard effects except for a Manley Voxbox and an XTA 1/3-octave graphic EQ on Allen's vocals.

"Tim Fraleigh from [sound company] Firehouse Productions has been doing a great job of looking after us on a daily basis," Hira says. Firehouse is providing FOH and monitor desks, as well as a complete line system, which, Hira says, "has enabled us to get some consistency to the show as we are not carrying a P.A. system; we're using all in-house systems. On the European leg, which we did just before the American leg, we used Skan PA hire. The P.A. was a d&b J Line system of eight J8s [80 degrees], two J12s [120 degrees] and four

J-Subs per side, plus six Q7 fills. Configuration changed daily due to the variety of venues we played in. The amps were D12s running AES digital signal and being controlled by d&b's Rope software. As we were using the [Midas] XL4 as the main console, we were going through two XTA 226s to convert the analog signal to AES, as well as using them for the their onboard EQ.

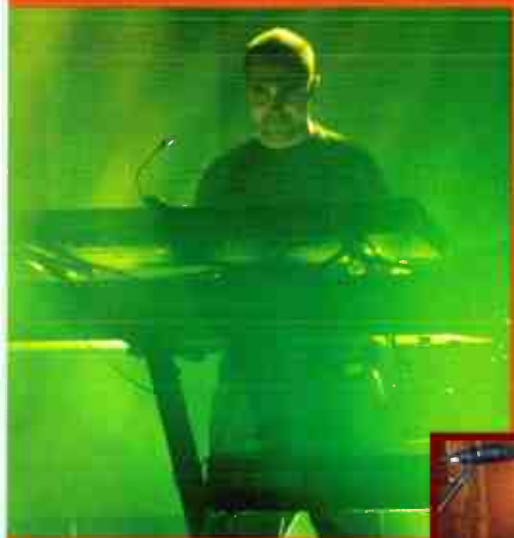
"The band is really tight and all exceptional players, making them a pleasure to mix," Hira continues. "Lily has been singing really great; her tuning and mic technique are really good. That, coupled with using a hypercardioid microphone, has enabled me to get the vocals out over the band. The shows have been going down very well indeed."



Bassist Morgan Nicholls uses a Marshall 7400 DBS bass head and a Marshall 25/50 Jubilee guitar head. The bottom end is a direct input at the end of the bottom-end chain. The top-end cab, a Kelly 2x12, has a Shure 57 on it. His foot gear comprises a Lovetone Meatball, Ibanez CP-9, Demeter Amplification Opto Compulator, Lehle P-Split box, Boss FV-50H pedal and Tech 21 SansAmp bass DI.



"Martin Waugh [guitars] uses two Mesa Boogie 100-watt 2x12 Lonestars with Audio-Technica 4050 and a Beyer M88 mics," says guitar/bass tech Stuart Quinnell (left).



Keyboardist Eddie Jenkins' rig comprises a Yamaha Motif EX8 as the main controller for Logic's Mainstage. He also uses a Yamaha USB controller as a secondary and then a Roland Juno-G.



According to drum/keyboard tech Sean Lascelles (left), drummer Jonny Jenkins' kit is miked with SM57 and D6 (bass), Beyer M201 (snare top), SM98 (snare bottom), SM57 (second snare), Sennheiser 904 (toms) and ATM 4050 (overheads).



Monitor engineer Françoise Le Moignan



Over in monitor land, engineer Françoise Le Moignan works a Digidesign Profile, citing its small footprint as necessary for this tour. Onboard effects employed include Revibe for Allen's vocal and a Fairchild 660 on bass. "I feel that mixing monitors is to keep things as real as possible, so I tend to keep the mixes pretty open and natural," Le Moignan says. "I'm not using any gates on the kit—the drummer has lots of dynamics that would be lost if his kit were gated heavily. Lily's vocal doesn't require any compression. I also feel that compression isn't

always necessary for vocals on monitors. The whole band and Lily are using Sennheiser EW 300 IEM G2 in-ears. There is a sub for the drummer. I have a DV sub, which is great for me; the stage sound has to be as clean as possible.

"It's a pleasure to work with Shan, seeing as we both want the best out of the show and we very much work as a team."

Lily Allen sings through a Sennheiser 945 radio mic. As it is hypercardioid, Le Moignan says, it helps in cutting down stage spill. III



By Blair Jackson

## 'InFamous' for PlayStation 3

CREATIVITY, COLLABORATION AND LOTS OF PERCUSSION MAKE FOR COMPELLING GAME SCORE

A bomb detonates in the heart of Empire City, obliterating several blocks and leaving a huge crater in its wake. Miraculously, bike messenger Cole McGrath, who was unwittingly transporting the bomb, is not killed; when he awakes from a coma two weeks later, however, he finds that he has

strange new electrical powers. Those will come in handy because he is being blamed for the blast, and it seems like everyone in the city—parts of which have been overrun by a murderous street gang, while other parts are quarantined because of a plague outbreak—is after him!

That is the basic premise of the exciting new PlayStation 3 videogame *InFamous*, developed by Sucker Punch Productions and published by Sony Computer Entertainment America. This third-person "sandbox" (open-world) game follows McGrath as he runs and fights his way through the

SOUND FOR PICTURE



city, aided by a couple friends. His “missions” take him to all sorts of strange and dangerous places and bring him into contact with a rogue’s gallery of desperate characters bent on mayhem. Does McGrath want revenge or redemption? The game can be played both ways.

Visually, the game is a wondrous achievement, with an amazingly gritty and detailed cityscape to explore. And the cinematics—which advance the story and set up the game-play—are bold and unique, with a sort of 3-D comics/graphic-novel imagery that feels completely complementary. *InFamous* also fea-

tures an intriguing multistyle musical score that really gets the heart racing: It helps establish the dark, mysterious ambience of Empire City and heightens the action at every turn. It is this aspect of the game’s production that brings us down to SCEA’s Foster City, Calif., studios (south of San Francisco) on a sunny spring afternoon.

SCEA’s involvement with the music for *InFamous* began in 2007, when senior music manager Clint Bajakian and music manager Jonathan Mayer met with a team working on the game up at Sucker Punch in Seattle. “At that stage,” Mayer says, as he sits in the control room

of SCEA’s studio complex, “the game was still being put together. We had concept art, we had a script in PowerPoint form that we were able to look at with Nate Fox, who’s the creative director on the game, and at that time they had temp music all over the parts of the game that were playable, mostly in the form of big beats; no harmony, no melody—just big Taiko drums, hand drums, things like that. They were really in love with that; they thought it was great, and so did we. We put it up against game-play and there was really no argument that this worked. So the immediate task was, based on that, figuring out how to do something really original and creative

[with percussion].

"So Clint and I went out to dinner and the idea came up: What if we actually honored that idea of basic tribal beats, but we did it with other instruments, so instead of a Taiko drum, we had a guy banging on a dumpster? And we started hashing out this idea of using found objects to re-create what they had done with their temp music, and also come up with something that was harsher, more desperate-sounding, a lot grittier and tugging at people more."

Then, Bajakian adds, "Jonathan got the idea of sending up some music by Amon Tobin, and that was received very positively by the team up there, and we contacted Amon and he got excited about the project right away, which was very gratifying to us." While not well known in pop music circles, the Brazil-born Tobin has a huge following in electronica/trip-hop/experimental music genres. He created the soundtrack for the third game in the *Splinter Cell* Series (*Chaos Theory*) and has contributed music to such films as *The Italian Job* and *21*. In recent years, he's become acclaimed for his creative use of sampling, and his latest CD, *Foley Room* (2007),



**Infamous** sound team, standing (L-R): Joel Yarger, Michael Bricker, Matt Levine, Ernest Johnson, Marc Senasac. Seated: Clint Bajakian, Jonathan Mayer, Chuck Doud, Scott Hanau.

was pieced together from a veritable ocean of different samples.

Tobin would turn out to be the lynchpin in a close-knit, highly collaborative music team put together by Mayer, which also included the award-winning TV/film/game composer Jim Dooley, British composer and

ambient score designer Mel Wesson, and the innovative electric cellist Martin Tillman, whose work has graced such soundtracks as *Blackhawk Down* and *Ali*. Mayer also wrote upwards of 40 minutes of music and, with producer Bajakian, performed on some of the percussion tracks that were sampled and al-

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tered by Tobin. Chuck Doud, director of music at SCEA (and a former game composer himself), was the benevolent overseer and financial manager of this adventurous project, which stretched the in-house team in ways that it never had been before.

"More and more," Doud comments, "we sort of modularly let [the music tracks] grow as we go, because we can all have ideas for what we want and what we think is going to work, but until you really start hearing your ideas come to fruition and get them in the game, you don't know exactly where you want to go with it. That's why, if we bring on multiple composers for a project, or even just one or two, we won't immediately contract out all the minutes we need for the game. We'd rather let it evolve organically. And that's exactly what happened with *InFamous*. For us, *InFamous* was an opportunity to break new ground with regards to how the music was produced. The aesthetics of the game were so unique and compelling, and it challenged us in so many ways. There was a lot of cross-pollination going on between all the composers."

The first order of business for the music team—before Tobin or any of the others had been brought in—was to do field recordings with a portable rig of "found objects" in various locales, including a scrap yard where cars were being crushed and another that was filled with sundry metal items. Mayer explains, "I took a bag full of mallets and a metronome and started recording grooves on car parts and old radiators—anything we could find, including some of the machinery they were using for crushing cars. There was an old streetlamp that we played with all sorts of different things, like rubber xylophone mallets. It was 15 or 18 feet long, so we'd put a mic at one end and then do runs up and down. So that became like a pad. Then we found this big piece of steel that had these cubby holes for an office mailroom, and we put the mics on one side and guys with sticks would tap on the other side, and it sounded like a whole bunch of guys drumming.

"When we came back from that recording session," Mayer continues, "we set ourselves to work setting up a sample library, not thinking too much about the cues or the pieces of music we were going to make, and we just tried to find things that were useful and cut them up and organized them nicely. At that time we had just contracted Amon, and we told him we'd gone out and done this recording and he said, 'Give me

all that stuff!' I was trying to clean it up, but he said, 'No, give me everything you've got; don't mess with it!' The way he approached those first few cues—and it actually carried throughout the game—really blew us away because it was amazing how refined and musical a sound came back to us. They were finished, glorious pieces of music. He did a really good job of adding some analog synth sounds that really complemented these stark metallic and percussive sounds. A lot of it was in the arranging and the way he laid things out—he did an amazing job of

leveraging the space in these sounds."

Next, Mayer and Bajakian decided to shift the focus of their percussion experiments to SCEA's studios. The company's recording complex comprises a warren of smallish 5.1 rooms that allow everything from tracking to mixing to editing to voice-over. "With more home theaters out there and a lot more emphasis on high-quality audio, it's no longer about pumping videogame audio over TV, and we take that very seriously," Bajakian comments as he sits in the Chris Pelonis-designed control room.

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The studio is equipped with a Digidesign D-Command console, scads of great outboard gear, multiple video screens and a truly formidable 7.1 setup—with huge loudspeakers designed by Pelonis and built by Tannoy. “At Sony, [director of services groups] Dave Murrant, Chuck Doud and [director of tools, technology and services] Buzz Burrowes worked to put the budget together and worked with Chris Pelonis to create a set of facilities that are consistent from room to room. We have whole hallways of editing suites that correspond sonically to this main room—the

“We suspended a cello horizontally and took a cello bow and started doing things that were probably way out of line,” Mayer says with a laugh, “violating this cello, bowing across the bridge and beating on it with drumsticks and creating a collection of samples that became the basis for a really great, intense combat piece that Amon created early in the project. I also spent a lot of time with Clint, with Amon producing us, banging on a Chinese zither called a *guzheng* or a *zheng*, which we had here in the studio. We had no idea how to actually play it, so I had drum-

drum. “We weren’t concerned with realism; we were concerned with getting freaky, cool sounds. Amon drove a lot of that.

“For us, collaboration is a big deal,” he continues. “We felt like we hit a gold mine early on [with the composers]. When you get all those machines turning in unison, you get something that is way greater than the sum of its parts. Not only were Amon, Jim Dooley, Mel Wesson and Martin Tillman willing to work together, they were *hungry* for it, so when things started to gel and come together and we started to hear the results of assets being passed back and forth—usually through us—all these unusual things started happening musically.”

Bajakian also lauded “the intense collaboration, where everyone put aside their egos and instead wanted to work with each others’ materials, handing things around like they were balls in a rugby match. For example, Jim Dooley got the idea to record the Prague Strings doing a whole bunch of loose aleatoric gestures; things that were often dissonant. Start at the top of your string and slide your finger down slowly, get loud in the middle and then taper off. Things like that—effects. He had a whole library of effects and he shared them with everyone on the project—Jonathan used them in some of his compositions; Amon used them in some of his.”

But let’s not forget that this isn’t just an exercise in producing cool, unique music. As Chuck Doud observes, “We could produce as much awesome music as we want, in almost any style, but translating that into the experience of the player that enhances his gameplay is a completely different challenge.”

Indeed, ultimately it was up to Bajakian, Mayer, and various editors and implementers—spearheaded by Scott Hanou—to make the music work within the game. Mayer notes that though a lot of the music that Tobin delivered went into the game as he delivered it, at SCEA they also sometimes edited and altered the stems the composer delivered, “whether it was to fit a scene or make it behave in an interactive manner. We’d create layers out of the piece of music and then have high, medium and low-intensity layers within a single



The main control room at SCEA’s Foster City, Calif., studio, with Digidesign Command-D console and Chris Pelonis-designed speakers

speakers are smaller but they’re custom-made by Chris and Tannoy to deliver very flat frequency response and they’re very consistent. We’ve found that what we mix and master in these rooms translates great to automobiles and home theaters and stereos and boom boxes alike.” Not surprisingly, Pro Tools is the recording format of choice here; there are rigs in every studio room.

Mayer and Bajakian turned the tracking space adjoining the control room into a veritable percussion jungle. In keeping with the spirit of the field recordings, most of the “instruments” that were tapped, banged, shaken, beaten and bowed were not conventional drums, but other objects—from trash cans, to plastic buckets, to boxes of broken china. And then there were musical instruments that *became* percussion devices.

sticks and I was playing a pattern on one side of the instrument, and Clint was on the other side bending the strings in time, so we had this little duet of this bendy percussive thing, and Amon made that the basis for the whole section [in the game] where Cole is going back into the city. Then, in one of the combat pieces, instead of an action hi-hat [pattern], Amon used recordings of me playing on a concert euphonium that’s suspended—I’m playing it with wire brushes and dowels and things like that. It’s a brass instrument being abused. We had a concert bass drum and Amon got us to turn it on its side and string bungee cords across it and play the bungee cords instead of the bass drum, and record the bottom of the bass drum while we were doing it.” They also recorded the sound of peas rattling across the surface of the



Four views of the percussion setup at SCEA, including trashcans, suspended cello and euphonium, and zhang

piece of music that the game engine drives, depending on the intensity of the scene.

"We also might tell the editor to take a piece of music and 'taffify' it—turn a two-minute combat piece into a four- or five-minute piece that loops with a lot more peaks and valleys than it had when the composer turned it in," Mayer continues. "So we'll poke holes in it, we'll tweak the arrangement and do whatever needs to be done. Then, in the actual game engine, we have playlists, so when you get to a checkpoint in a mission, we make a certain number of pieces of music available, and if the player 'dies' and restarts at that checkpoint, the playlist progresses to a different piece of music or it might be a different version of the same piece. For us, the worst thing in the world is for the music to be noticed *negatively*. It's got to be part of the world and part of the experience and part of the emotion."

Adds Doud, "Sometimes you want the player to know the music's changed, but sometimes you *don't* want them to know; you don't want to pull them out of the experience. So the challenge is to have this music composed and arranged and produced and inte-

grated into the game where you've got this system running under the hood that is pulling pieces in and out on the fly depending on what's going with the game-play, but it's not interfering with the player's experience."

Of course, the musical soundtrack is just one key ingredient in making *InFamous* such an inviting and exciting PlayStation 3 experience. Other parts of the game audio were handled by other teams in other cities—from sound effects and Foley (the San Diego post group led by Mike Johnson) to dialog recording (in L.A. and New York).

The final sound mix took place over a period of several weeks at Sucker Punch in Seattle, and involved creative director Nate Fox, SCEA sound design manager Ken Felton, Sucker Punch audio director Andy Martin and Mayer. "We actually turned *down* the music in a few places," Mayer says. "We wanted to make sure the music stayed out of the way of the dialog."

No worries. There's still *hours* of visceral, eerie, disturbing, mind-bending and atmospheric music in the game. And, predictably, there is also a music-only soundtrack available for gamers to enjoy away from the PlayStation

3 console, as well—edited versions and cleverly constructed pastiches of different cues, plus the end credit's song, "Silent Melody" by Working for a Nuclear Free City.

"Players become passionate about the music because they live with it for 20, 50, 100 hours, and if it's done right, it's an integral part of their experience," comments Doud. "Does that translate to them wanting to sit in their car and listen to the music they've been listening to for the last few weeks? Maybe, maybe not. But if we can offer them something that's authentic to what they experienced in the game but a little different, something that can continue and expand the music experience, that takes into a whole other level.

"We're not going to play it safe," Doud concludes. "We think the only way you can be better and break new ground is to take chances. We're in a very fortunate position here where we have an incredibly talented department. They're the best at what they do, and operating from that position gives you the ability to have more confidence and take more risks. Besides, taking risks is always more fun than playing it safe." ■



The Microsoft Studios audio team. Back row, L-R: John L. Ball, Scott Anderson, Nick Holman, Mike Allen, Ryan Potteiger, Levi Seitz, Andrew Kawamura, Dave Gross and Scott Spain. Front row, L-R: Jason Bilveu and Rick Seneschal.

# Microsoft Studios

## SOFTWARE GIANT HANDLES ALL THINGS AUDIO

By Blair Jackson

They've never recorded a hit album there or done post for a blockbuster film, but it seems as though the 65,000-square-foot Microsoft Studios complex in the software giant's Redmond, Wash., campus is humming year-round. That Microsoft would have state-of-the-art facilities at its disposal is not exactly a surprise—after all, technological innovation is the company's bread and butter. And when you think about it, there's *a lot* for a studio to do for a mammoth company like that.

"I'll give you a snapshot of what we do here," says Microsoft Studios' audio lead, Rick Seneschal. "Right now we're doing a music mix for a video that will be launching an upcoming product—with full sound design. Microsoft puts on large events where they rent out stadiums and arenas, and we'll record the original music for those here. Not long ago we finished all the UI [user interface] sound for Windows 7. We do surround mixes for game trailers that are shown on TV and in theaters. We've done national TV shows—we used to do one with MSNBC called *Connected Coast to Coast*, which was one of those political bickering shows. [Laughs] We recently did *The Rachel Maddow Show* [here] and we've done *Larry King Live*. Tomorrow morning I have two guys who are loading up equipment and we do remote broadcasts. By the end of this year, we'll have done over 2,000 separate sessions—it's an immense amount of production. And when you offer a lot of services, you have to be very flexible and you have to be fluid in all

those different arenas.

"We're a production house, as well as a post-production house, and what I mean by that is we have four soundstages, we have eight edit bays, I have four audio rooms, and a mobile Pro Tools HD rig we use for going out to events to do on-site post and music scoring and sound design, as well as a couple of other portable [Pro Tools LE] rigs. Our audio team is unique here in that we're not really specialized in one type of service. The audio team is sort of everything to anybody, so we do everything from sonic branding to broadcast

to music production to sort of general radio-style production."

Adds Microsoft Studios general manager Jeff Singsaas, who also heads up the company's Worldwide Events Marketing wing, "We're seeing a lot of new business in other areas. For instance, we've become a really strong encoding source, helping people get content delivered to the Internet. In partnership with our Silverlight Product Group, we provided encoding support and engineering support for the Democratic National Convention, and also the Summer Olympics with NBC for their Web presence. In fact, NBC was excited enough about it that they've committed to working with Microsoft for the Winter Olympics next year. And, of course, the people who were at the DNC last year are in the White House now, and we're anxious to work with them in the future, as well.

"Another thing we've been involved with is virtual events—this is a rapidly emerging trend in the event industry, where instead of going somewhere and holding an event, it's broadcast over the Internet,"



Audio Control Room 1 at Microsoft Studios. Above: a rack of 10 Pro Tools 1925.

Singsaas continues. "An example is our Small Business Summit where we actually broadcast for several days—there was programming all day long, there were guest hosts, there were subject matter experts for small-business people to listen to. That's all produced out of the studios, and the people who want this information don't have to spend money on travel and hotels and so on. We've had awesome success with it so far—with the number of people that are [watching] that stay connected for the programming, the number of leads the small-business sponsors get from being an advertiser. It's been very encouraging and we can do it all out of here."

Microsoft Studios has been in its current home for 12 years, expanding, upgrading and refining the operation all along the way. The extensive complex contains three video-ready stages, two green rooms, engineering and electrical shops, editing suites, space for a high-end graphic design team, a screening room, kitchen and, of course, dedicated audio areas: Initially, its two large, virtually identical audio control rooms (out of four audio rooms total) were equipped with SSL Axiom consoles, but for the last four years or so they've housed 36-fader Digidesign D-Control ICONs and Pro Tools HD6 systems that support 80 AES and 80 analog I/Os with 5.1 surround capability. "I know we're among just a few places that go live-to-air with ICONs," Senechal says. "They've worked out really well for us—for broadcast, post-production and music."

The Pro Tools rigs are Fibre channel-connected to DataDirect Networks' 100TB S2A Extreme storage platform and the Shared SAN file system solution, which are integrated with the Quantum StorNext file system and hierarchical storage management. Project content is archived from the SAN to a North Plains Systems TeleScope DAM solution with more than 7,000 physical assets (tapes, CDs, media) kept on-site and 30,000 kept in another building. Digital assets are kept on a 34TB Quantum SAN.

The rooms also have Avid Mojo, Genelec monitors (as well as custom "laptop" monitors using OEM Dell speakers) and plenty of outboard gear, including Lexicon 480L and two 300s, four Focusrite Red Series and one ISA 215 processors, and much more.

The facility differs from many other corporate audio/video studios in a couple of ways. First of all, Senechal notes, "We run like a small business inside of Microsoft. We

compete for business. Realistically, we act like we're a regular production house. We just happen to be at Microsoft, but it's the same level of client interaction—we have a front concierge desk, it gets people lunch; we still do all that kind of schmoozy stuff."

"We have our own P & L," adds Singsaas. "We're required to recover the costs of our operation and also compete with small, nimble commercial entities, as well. The way we've structured our business, we do a pretty good job of that. In-house production facilities typically have to make the case to in-house users

to use them. But we've done a lot of work over the past couple of years to make sure that our services are what they need to be, our service level is what it needs to be and also what pricing needs to be. In all those areas we're very, very competitive."

"Some people have it in their minds that we're just this big corporate facility," Senechal says, "but because we're so attached to marketing, we're also very much a creative group. I like to think we can do pretty much anything here, and I think that day-in and day-out we prove that to be true." ■

# BEYOND RARE.

**Dan Scalpone**  
Senior Account  
Manager GC PRO

**Johnny K**  
GRAMMY-nominated  
Producer for Staind,  
Disturbed, 3 Doors  
Down, Plain White T's,  
Black Tide

DAN,  
THANKS AGAIN FOR THE SUPPORT. WHEN  
WE'RE IN A SESSION, TIME IS PRICELESS  
THAT STINGRAY 5-STRING YOU BROUGHT  
OVER IS WORKING OUT PERFECTLY - AND  
THE ADAM MONITORS ARE MAKING A  
MASSIVE DIFFERENCE.

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### Solid Listening

#### Unity Audio **The Rock**

The first offering from Unity Audio ([www.unityaudio.co.uk](http://www.unityaudio.co.uk)), The Rock (\$1,000 each) studio monitor features a sealed cabinet and is made from top grade, 12mm, 9 ply Baltic birch. Its folded ribbon tweeter features a new neodymium magnet system promising higher efficiency, and superior linear frequency and phase response. The 7-inch woofer is constructed of 0.2mm aluminum foil that's chemically bonded to a rigid pulp-fiber cone, permitting ±15mm of woofer travel for accurate low bass frequencies. Amplification is via a 100-watt, discrete, bipolar, low-feedback amplifier with custom-wound transformers, and dedicated LF and HF sections with overload/clip protection.

### Palm-Sized Performer

#### D&M Professional **PMD661**



After much feedback from the field, Marantz Professional ([www.d-mpro.com](http://www.d-mpro.com)) has released the PMD661 (\$599) 24-bit/96kHz compact recorder. The unit measures 6.5x3.7x1.4 inches, and features balanced mic/line XLR inputs, an S/PDIF digital input, a secondary unbalanced line in (3.5mm) and stereo RCA outs. Other features include built-in stereo condenser microphones, optional wired remote, OLED display, ¼-inch headphone jack, stereo speakers and USB data port. The PMD661 records to SD Flash or SDHC media (32GB max), and is powered by four AA or off-the-shelf rechargeable NiMH batteries.

### SSL Inside the Box

#### Solid State Logic **MX4**

The new MX4 (\$1,999) from SSL ([www.solid-state-logic.com](http://www.solid-state-logic.com)) comprises a MADI interface card offering 128 channels of I/O. Software Mixer and DSP-powered plug-ins providing console-grade processing with SSL audio characteristics. The system offers Mac/PC-compatible SSL "PCIe-Core Audio Pipeline" drivers, 1x word clock connector, four samples of latency and fully automatic delay compensation for VST plug-ins, I/Os and external processing/



conversion delays. The software mixer can be used stand-alone or as a front end for any native DAW. It offers an open mixing environment with flexible routing, plus SSL's Channel EQ plug-in with 4-band parametric FQ ("E" and "G"), SSL Channel Dynamics plug-in and its G Series stereo bus compressor.

### Mixing It Up

#### Tascam **M-164 Series Mixer**

Tascam ([www.tascam.com](http://www.tascam.com)) has created a new series of mixers offering an analog base and options for digital effects and computer integration. The M-164 (\$349) is a 16-channel mixer with six mic inputs, EQ and a built-in meter bridge. The M-164FX (\$399) adds digital effects like reverb, delay and chorus. The M-164UF (\$699) has built-in USB 2 that delivers all 16 outputs to a computer for live or studio recording (96kHz/24-bit). Common features include six XLR microphone inputs with phantom power and highpass filter, five stereo line inputs, 3-band EQ on mic channels, RIAA phono preamp on channels 9/10, sub and main output buses, and two aux sends.





## Six Cool Cats

### Blue Cat Analysis Pack Plug-Ins

These six new audio-analysis plug-ins (\$299) in Audio Units format from Blue Cat Audio ([www.bluecataudio.com](http://www.bluecataudio.com)) feature an audio level meter, spectrum and stereo-field analyzers, as well as a multitrack oscilloscope. The DirectX and VST for PC and VST for Mac versions of the six plug-ins have also been updated for this release, including several fixes and improvements. While the Multi Series plugs propose simultaneous multiple track analysis with multiple instances linking support, the Pro Series products let users extract parameters from the incoming audio signal and record them as automation curves or send them as MIDI CC messages. Typical applications include creating unique sidechain effects or external signal-based hardware control.

## It's a Tube Summer

### Thermionic Culture Little Bustard

The Little Bustard (\$2,670) from Thermionic Culture ([www.thermioniculture.com](http://www.thermioniculture.com)) is the company's second tube-summing mixer that can be used independently as a stand-alone mixer or for adding more channels to a Fat Bustard. Features include 16 input channels with fixed gain, on/off switches, four mono inputs with mute switches and pan pots that can be defeated by another switch, adding an extra 6 dB of gain. Tubes include a pair of ECC83s/12AX7s on the gain stage, and two 6PC86s in the output stage. The master output section has independent left/right 31-position output pots and a simple output level indicator.



## Virtually Rock 'n' Rollin'

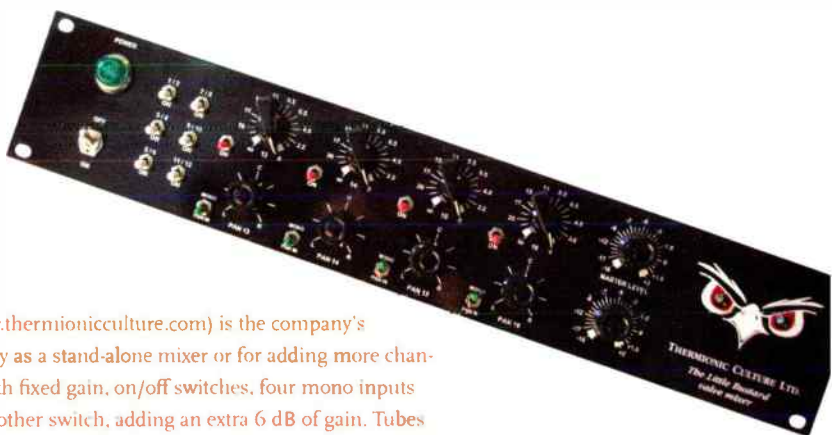
### IK Multimedia AmpliTube Fender

IK Multimedia ([www.ikmultimedia.com](http://www.ikmultimedia.com)) and Fender Musical Instruments Corporation ([www.fender.com](http://www.fender.com)) have collaborated on AmpliTube Fender (\$139.99), the only official Fender amp and FX software suite. The collection features a selection of 45 Fender guitar and bass amps, cabinets, stompboxes and rack effects, including the '64 Vibroverb Custom, '65 Deluxe Reverb, Vibratone, Super-Sonic, Metalhead, Fender Blender, Phaser, Fuzz-Wah and many others. The VST/Audio Units/RTAS collection features mix-and-match amps, cabinets and mics, a digital tuner, stomp pedal board, rack effects and two fully configurable rigs with up to 32 simultaneous effects. AmpliTube Fender can be controlled live with StompIO, StealthPedal or any other MIDI controller, and comes with hundreds of presets with more online in the AmpliTube Preset XChange area. III

## Ring-a-Ding-Ding

### Soundmaster Digimote

Soundmaster ([www.soundmaster.com](http://www.soundmaster.com)) has released a wearable wireless remote that can be slipped on your index finger like a ring. Digimote (priced by quote only) is designed for one-hand operation, allowing the user to keep his/her hands on the faders while issuing commands to the Soundmaster ION® system.



## Waves Tony Maserati Collection

Six Plug-Ins Provide Intuitive Control, Musical Results

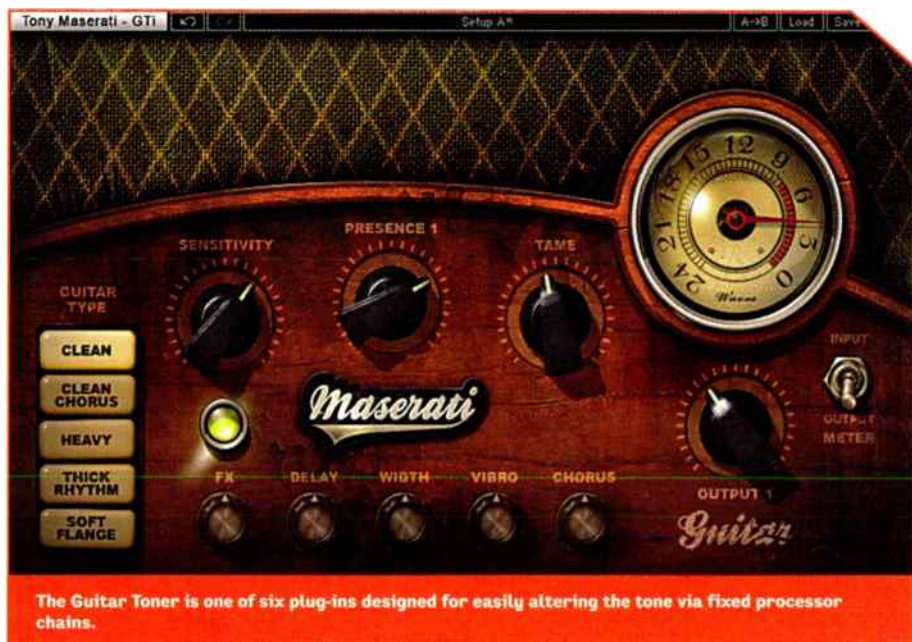
The Tony Maserati Collection is the first in the Waves Signature Series of plug-ins. Each of these six plug-ins is a unique, preconfigured signal processor chain designed by New York-based *mixmeister* Tony Maserati to achieve his hit-making sonic treatments of individual vocal and instrument tracks. The plug-ins have a huge range of processing power and macro-parameter controls to conform them to your own style and sonic aesthetics.

The six plug-ins are the VX1 Vocal Enhancer, B72 Bass Phattener, DRM Drum Slammer, GTi Guitar Toner, ACG Acoustic Guitar Designer and HMX Harmonics Generator. The GUIs look like Bakelite radios from the 1930s and '40s—old Grundig Majestic shortwave receivers with huge knobs and buttons, ventilation slots revealing glowing “tubes” and round glass-faced radio dials for I/O VU meters. I tested them in Pro Tools HD3 Accel running Pro Tools 7.4 on an OS 10.4.11 Mac PPC. Each plug-in includes both mono in/stereo out and stereo in/out versions.

### VX1 Vocal Enhancer

The intuitive control sets on the six plug-ins vary, depending on the specific task, except for a Sensitivity control that drives the chain harder and harder, right into a cool, distorted sound much like a hardware’s “blooming” tube stage. VX1 also has both Bass and Treble—fairly broad EQs like FM radio tone controls—and Compress applies more or less compression.

VX1 has three “contours” or modes configured for the most suitable vocal treatment pred-



The Guitar Toner is one of six plug-ins designed for easily altering the tone via fixed processor chains.

icated on song tempo. Conceptually and musically, this is a good way to initially set up a vocal processing and treatment chain. Contour 1 puts a vocal in a small studio or room; a slow ballad vocal might sound better on Contour 2 with its larger chamber and many pre-delay choices; and Contour 3 uses a small room with shorter delay options for uptempo songs.

Running under Contour 3, Compress becomes an Air control for adding pleasant high frequencies to the sound. There are six additional controls for adjusting delay and reverb parameters.

When first inserting VX1 on my female lead vocal track, I noticed a low-frequency roll-off even though the Bass and Treble knobs indicated “0.” The change in sound is instantly gratifying: None of these plugs come up flat or “swimming” in effects—delays and reverbs are dialed off but ready to add.

On a densely produced modern rock song, I liked switching through the three contours while listening to the whole mix. I saved presets of each contour after tweaking the FX, EQ and Compress controls—

tweaks not saved when changing contours. I liked Contour 2 for this vocal in the verses and went with Contour 1 for the choruses as its slimmer, denser sound was a better fit for the track. Used sparingly, the delay and reverb sounds were good; the delays were on the short side with regeneration and the reverb sounds were plate-like. All of these effects are married together within the plug, so vocals take on a more cohesive, focused and “produced” sound as opposed to the result of using send/return to effect processors.

### B72 Bass Phattener

The B72 worked well on a “flat-footed” bass track that had no wrong notes, just sub-zero personality. B72 has two modes or bass types: DI and Synth. It’s easy to get a slightly overdriven bass amp tone with plenty of squash and treble spank with DI. The Synth mode adds a buzzy stereo filter effect and a cheesy-sounding delay/reverb that was perfect for adding a mysterious backdrop to simple arpeggio guitar part. It also makes a cool vocal-trasher effect. It’s important to remember that any of the plugs can be used for any track. The B72 fixed up a DI bass quickly, and I liked it.

#### PRODUCT SUMMARY

**COMPANY:** WAVES

**WEB:** www.waves.com

**PRODUCT:** Tony Maserati Collection

**PRICE:** \$800 Native-only; also included free in Waves Mercury

**PROS:** Six ready-to-go processor chains specifically designed and tweaked for “hit record”—sounding vocals, drums, guitars, bass and more.

**CONS:** Changes to any Contour’s parameters returns to the default settings when toggling between Contours.



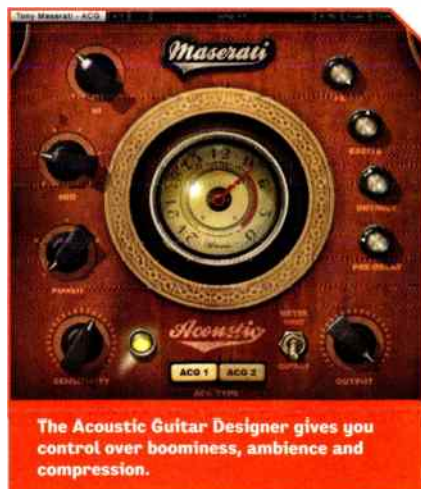
### DRM Drum Slammer

The DRM is excellent for converting dull, lifeless R.I.P. drum sounds into punchy and bright drums. DRM's processing modes are Kick, Snare Top, Snare Bottom, Hat, Toms, Overheads and Room Tracks. Although I don't know exactly what's going on behind the GUI, DRM duplicates the sound of equalizer and compressor chains I often used for these tracks. I liked the Snap control because it works subtly on the transient portion of drum hits—harder sounding without being just brighter. The hi-hat mode brought up some lightly played eighth notes without lifting spill from the rest of the kit. I replaced all the plug-ins I had on all my drum kit tracks with DRM, and all sounds matched well to what I had gotten previously using a lot of time and plug-ins.



### ACG Acoustic Guitar Designer

ACG has two acoustic types of treatments. I was hesitant to tweak ACG1 type as it was so dialed in. I found acoustic guitars to be trimmed in the low frequencies in a very particular way that somehow retains a big bottom without boominess. There is also a kind of harmonic exciter, compression and short ambience happening—all tweakable, of course. The ACG2 type adds more compression and a wider ambience width—a lovely treatment for any acoustic guitar fighting for solo space in a busy track.



staging—the right amount of “hair” from clean to not. Sensitivity, when cranked, brings up low-level ambience—room tone I had not heard before. GTi has a great-sounding chorus and vibrato with plenty of adjustability, while the Tame control acts like a limiter to contain peaks resulting from extreme EQ boosts. In general, all guitar tracks will emerge fatter and broader sounding through GTi—even direct guitar recordings. I used the Thick Rhythm contour to “beef up” a direct-recorded R&B rhythm guitar, making it sound amp-like. I ran the Sensitivity

### HMX Harmonics Generator

The HMX is a brilliant chain of processors that stereophonically spreads mono-sounding pads, synths and electric pianos. In addition to adding delays, it makes the pitch center ambiguous by way of a beautiful and watery-sounding chorus/flange effect. This was the one plug-in I also used as a send/return effect for several tracks that comprised a stereo pad. Used judiciously, HMX fattened and widened keyboards, backing vocals or strings.

### Brilliant Chains of Command

What might at first seem like a dumbed-down, inflexible interface is actually an ingenious design that let me react musically and emotionally and less analytically. My left-brain was craving to know technically exactly what's going on in side of the Maserati Collection plug-ins, but my right-brain is telling me it all sounds great. III

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

## Mojave Audio

by David Royer



## David Bianco

*“Mojave Audio is really making me look good”*

**Producer/Engineer: Tom Petty, Bob Dylan, Ozzy Osbourne, Blues Traveler, T.S.O.L. and Mick Jagger.**

### on recording Tift Merritt's “Another Country”

“The Mojave MA200 came up head and shoulders above the rest to be the vocal microphone of choice.”

### on recording Susan Tedeschi's “Back To The River”

“The MA100 beat all the competition for the guitar sounds. I was shoving those mics right at the speaker cones in the vintage Fender Twins and Vibroluxes and they sounded fantastic.”

[www.mojaveaudio.com](http://www.mojaveaudio.com)  
818.847.0222 Burbank, CA

## Focal Professional CMS 65 Powered Monitors

### Front-Ported Near-Fields Offer Power, Balanced Tone and Adjustability

Focal/JMLab Professional has been producing speaker systems for 20 years and is known for its inverted beryllium-tweeter technology, which is used in the SM6/8/11 speakers. The company's new CMS (Compact Monitoring System) Series shares a lineage with its beryllium cousins, albeit in the form of less-exotic materials: aluminum and magnesium.

#### What's in the Box?

The CMS 65 has a front-ported design and stated frequency range of 45 to 28k Hz. The 6.5-inch Polyglass woofer produces a good amount of punch for a speaker this size, which I attribute to good design techniques in the cabinet, porting and the cone's rigidity. The tweeter comprises an aluminum/magnesium alloy shaped into an inverted dome. As with all new speakers, the CMS 65s need to be broken in. Focal recommends a minimum of 20 hours. I noticed them smoothing out after about three hours, with an increase in depth and top/bottom clarity, and some midrange "honkiness" beginning to disappear. A mask was pulled away; reverbs and instruments' upper harmonics became much more apparent, with a greater degree of separation in the soundstage.

Two Class-A/B amps power the CMS 65; one provides 100 watts RMS to the woofer, with the tweeter receiving 60W. Inputs are RCA or balanced XLR. The input sensitivity is not infinitely variable; instead, a three-position pot on the rear panel selects +4dBu/0/-10dBV levels, although a cut-only variable gain adjustment on the speaker front corresponds to a 0 to -66dB range. Also

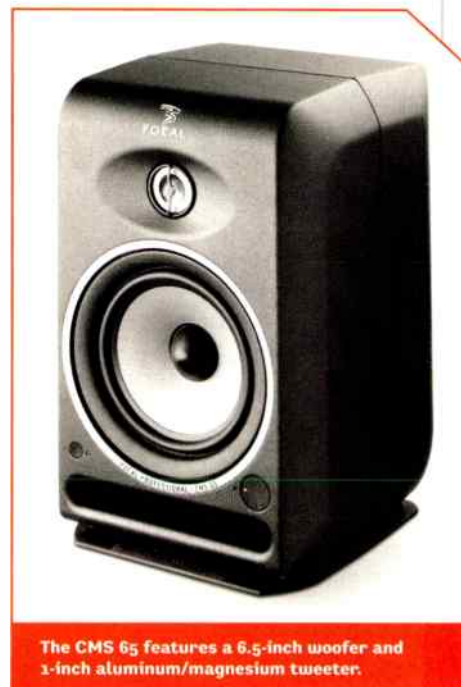
on the front baffle is a Standby switch for muting each speaker individually. This switch is not totally silent as there is a slight pop when you toggle its status from On to Standby and back.

#### Into the Studio

Other controls on the back of the CMS let you adjust for particular acoustic challenges. A 12dB/octave highpass switch with 45/60/90Hz settings rolls off bass frequencies for use with your favorite subwoofer. LF shelving offers control below 450 Hz, from +2 to -6 dB in 2dB increments. This is particularly useful when using the speakers next to a boundary, cutting the low end to control the bass propagation along a wall. HF shelving has a range of +2 to -4 dB above 4.5 kHz, again letting you tailor the response to your application. The Desktop Notch cuts 160 Hz at 2/4/6 dB with a Q of 2. This is a very handy little filter as I tested these on the bridge of my desk and needed to engage the -2dB position. Pink-noise generation showed this area leveling off when the filter was put in place, avoiding the phase shift associated with this frequency range. Compared to my JBL LSR6328P monitors, the Focal CMS 65 speakers have a slightly forward-sounding midrange. The test signal confirmed a 3dB increase in amplitude, rising from 1.25 kHz and peaking at 2 kHz.

The CMS 65 exhibited a high degree of articulation in the upper range. Pianos, bowed strings and synthesizers were well represented, if not slightly forward in the 1.6 to 2kHz range, as I mentioned previously. Although the specs indicate an upper frequency response out to 28 kHz, the air was not that apparent, with a slight attenuation in the 12kHz range.

I played finished mastered music from many genres through the Focal monitors—including hip-hop, rock 'n' roll, alternative, new age, jazz, symphonic and operatic selections—and original 24-bit/96kHz Pro Tools files. The most noticeable differences I heard were in the buzz-saw guitars; the CMS 65s produced a distinctly



The CMS 65 features a 6.5-inch woofer and 1-inch aluminum/magnesium tweeter.

different timbre as compared to the JBLs, which by comparison felt almost tonally scooped out. During an A/B comparison, the difference in the JBLs' titanium construction vs. the CMS 65s' aluminum/magnesium composition was quite evident.

#### La Musique C'Est Magnifique!

The Focal CMS 65s kept getting better and better the more I played them. Imaging was superb. In many instances, the music was outside the point source of the speaker—much wider than I had anticipated from this little 6.5-inch system. I could easily see these used in a 5.1 arrangement. The slightly forward midrange was reminiscent of—dare I say—a Yamaha NS-10 that actually sounds good. These speakers will be welcome in many different applications, including music production, broadcast, DVD/Blu-ray authoring and game audio. I recommend you give the CMS 65s a good listen—just make sure they're broken in. I think you'll like what you hear. III

*Bobby Frasier is a consultant and engineer.*

#### PRODUCT SUMMARY

**COMPANY:** FOCAL PROFESSIONAL  
**WEB:** www.focalprofessional.com (dist. by Audio Plus Services, www.audioplusservices.com)  
**PRODUCT:** CMS 65  
**PRICE:** \$950 each

**PROS:** Compact size, plenty of power. Accurate and punchy low end. Balanced/unbalanced inputs. Superb imaging. Several mounting options are available.

**CONS:** No networking capabilities. Limited distribution.

# Power Tools!

## ...for Power Players



"Our Radial SWBs have saved the show on more than one occasion. They have proven instant and seamless."

~ Richard Young  
(Production Manager - Radiohead, Pink)

"I have flown the SW8's all over the world on tour and they work perfectly night after night. I can't imagine doing a live show without them."

~ Mike McKnight  
(Mariah Carey, Madonna, American Idol)

"Radial DI's provide the flexibility I need to perfectly match any situation I come across. I specify Radial exclusively for every tour I mix."

~ Dave Natale  
(The Rolling Stones, Fleetwood Mac, Joe Cocker, Tina Turner)

"It is nice to find great sounding industrial grade equipment is still being made today!"

~ Daniel Lanois  
(U2, Robbie Robertson, Bob Dylan, Peter Dinklage)

"We have Radial DI's on everything... and after several continents and countless dates, they continue to work flawlessly. Radial is the only direct box I use!"

~ Lars Brogaard  
(Stage manager and FOH engineer - Rod Stewart)

"Ah...my beloved Radial PhazerBank, still helping me find that sweet spot after all these years. Bringing two sources together so that they are one, in perfect harmony... Love it."

~ Paul 'Pab' Boothroyd  
(AC/DC, Paul Simon, Pink, Paul McCartney, Faith Hill)

"With today's live sound demands you need to be able to carry DI's that are reliable and the perfect match for your direct input devices. That's why I choose Radial DI's."

~ Rob 'Cubby' Colby  
(Juanes, Prince, Genesis, Paula Abdul, Janet Jackson, Cyndi Lauper)

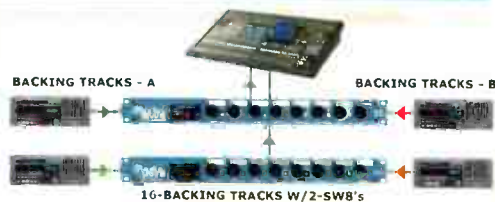
"Radial builds DI's exactly how I would do it. Real quality and they sound great. I love 'em!"

~ Bruce Swedien  
(Quincy Jones, Michael Jackson, Jennifer Lopez, Paul McCartney)



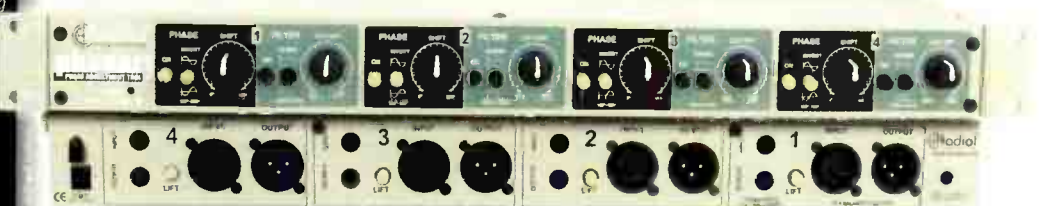
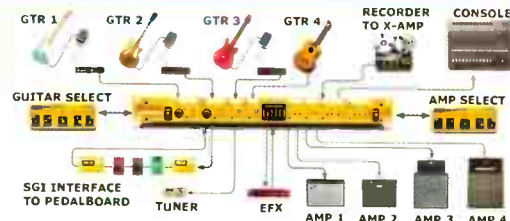
### Radial SW8™ Auto Switcher

A multi-channel switcher for backing tracks that ensures your audio keeps playing even when a playback device fails. Choice of balanced or unbalanced inputs plus eight built-in Radial DI boxes for remote stage use. Fully expandable with auto, manual or remote switching.



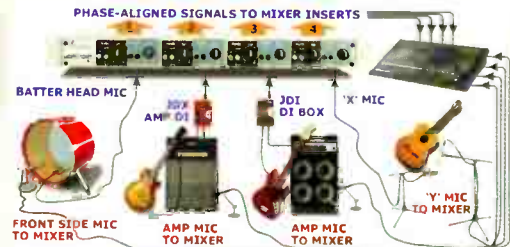
### Radial JX44™ Air Control

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## Neumann TLM 103 D Digital Microphone

**Tried-and-True Transducer Adds Software Remote Control and DSP**

With the introduction of the TLM 103 back in 1997, Neumann created something of an instant classic that gave the project studio owner access to Neumann quality for a very reasonable price. The latest addition to the company's line of Solution-D digital microphones is the TLM 103 D. As the name implies, this is a "digital version" of the original TLM 103.

### Setup and Controls

The TLM 103 D's preamplification, A/D conversion and DSP are handled onboard, and the output conforms to the recently established AES-42 standard for digital microphones. The requisite voltage for the mic is derived from Neumann's DMI-2, which can power and control two Solution-D mics via standard XLR3 cables. The TLM 103 D can also connect directly to an AES/EBU or S/PDIF interface using a Neumann Connection Kit, though this precludes remote adjustment of mic parameters.

The DMI-2's rear panel has two AES-42 mic inputs, two XLR AES outs, a 9-pin D-Sub connector, word clock I/O, power inlet and two RJ-45 Control Bus ports. Neumann thoughtfully includes an adapter that interfaces a standard USB cable with the RJ-45 Control Bus, facilitating data exchange between the DMI-2 and your computer. This conversion from USB format allows cable runs up to 100 meters.

The DMI-2 offers no external controls, so all gain, low cut, polarity, compression, phantom on/off and pattern switching are done using the included Remote Control Software (RCS). Any changes made via software are stored in the mi-

crophone negating the need for software once the mic is set up.

### Stunning Realism

I used the TLM 103 D in a variety of situations with Digidesign and MOTU interfaces, and Digital Performer and Pro Tools software. External clock was usually derived from a Lucid GENx6-96 clock generator, though occasionally the audio interface was slaved to the DMI-2's internal clock. The DMI-2 played nicely with all of my other gear at sample rates ranging from 44.1 to 176.4 kHz; 196kHz use requires dual-wire AES. I never experienced any sync issues and never heard any digital artifacts.

As expected, the TLM 103 D shares the assets of its analog namesake: the K 103 capsule, high-SPL handling (up to 138 dB) and extremely low self-noise. In A/B comparisons with the analog TLM 103 through a Grace 201 mic preamp, it was difficult—if not impossible—to tell the two apart. The only time that I could clearly hear a difference was when recording extremely quiet sources. Here, raising the control room monitors to ridiculously high gain, the TLM 103 track exhibited a bit of hiss, probably coming from the Grace 201 (which is no slouch in the S/N department), while the TLM 103 D lowered the noise floor to inaudibility. The TLM 103 D's tone was well-balanced and present, with excellent transient response and "you are there" immediacy. As a room mic for a live drum kit, the TLM 103 D delivered a very realistic presentation of the kit with plenty of impact on the kick and a wonderful tom sound.

Among the parameters addressable from RCS is compression—a critical addition, as the TLM 103 D does not offer access to the analog signal path. Gentle compression can be inaudible, though it is certainly possible to cause pumping and breathing. I found the onboard compressor to be a bit fiddly, especially because some of the parameters are not continuously variable. The compressor also features four de-esser settings—off, 1 kHz, 2 kHz and



The TLM 103 D offers onboard digital conversion and software control over gain and parameters.

4 kHz—but I did not find them particularly effective for a sibilant male vocalist whom I've recorded many times in the past. At one point, the de-esser accidentally remained on while I used the TLM 103 D as a room mic for drums, and the result was a very cool low-fi effect.

### D-Licious

Neumann has done it again with the TLM 103 D, producing an integrated microphone/preamp/converter system that features great sound, flexibility, total recall and the ability to operate at a wide variety of sample rates. Quiet instruments like finger-picked guitar—always a challenge—are a pleasure to record because there is no distraction from background noise, and the results are stunning. At first glance, the TLM 103 D system appears to be an expensive proposition, but pro and project studios will benefit from the included elements of the analog signal chain (i.e., the preamp and A/D converter), which are capable of very high performance indeed. III

Steve La Cerra is a studio and live sound engineer.

### PRODUCT SUMMARY

**COMPANY:** NEUMANN GMBH

**WEB:** www.neumannusa.com

**PRODUCT:** TLM 103 D

**PRICES:** TLM 103 D, \$2,798; DMI-2, \$1,498; AES/EBU or S/PDIF Connection Kit, \$238

**SYSTEM REQUIREMENTS:** Mac OS or Windows (for Neumann RCS)

**PROS:** Extremely quiet operation. Wide frequency response. Preamp settings can be stored and recalled.

**CONS:** No direct S/PDIF output. Computer cable interface is clumsy. No post-compression gain makeup.

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## Universal Audio 710 Twin-Finity Preamp/DI Hybrid Tube/Solid-State Unit Offers Wide Palette of Audio Color

The front end of the audio chain—aka, the mic preamp—is a great place to introduce some color to your signal. The UA 710 Twin-Finity preamp does just that with its new twist on tube-plus vs. solid-state signal paths. Dual-path architecture is nothing new: Millennia, Manley, Aphex and SSL all offer great products with variations on that theme. What's new here is the ability to traverse from either or to infinite stages between the two personalities of the paths.

The single-channel 710 Twin-Finity can be used on the desktop or rackmounted side-by-side with another 710. You can also purchase a handle kit should you want to carry it around more conveniently. The controls are self-explanatory with a couple of exceptions. Features include 70 dB of gain via large input gain and output level knobs, switchable phantom power, -15dB pad, highpass filter (75 Hz), polarity invert and mic vs. line operation.

One of the better features is the innovative Drive vs. Output meter switching. If Output is chosen, the meter reads the unit's output, as you'd expect. However, if Drive is chosen, the meter provides a rough idea of how hard you're hitting the tube/solid-state stage: 0 dB is equal to 1.2-percent THD (at 1kHz), while -10 dB is 0.4 percent. I found this most useful when switching it back and forth between the two modes while adjusting the Blend knob and gain/level controls until the color and output level are just right. Another great feature, the Blend knob is infinitely variable between 100-percent tube and 100-percent solid-state—all phase-coherent. With the gain/level adjustments, that gives you nearly limitless control over tube crunch and overdrive.

### PRODUCT SUMMARY

**COMPANY:** UNIVERSAL AUDIO  
**WEB:** www.uaudio.com  
**PRODUCT:** 710 Twin-Finity  
**PRICE:** \$999; optional handle kit, \$29.99

**PROS:** Gain/Level and Trans/Tube controls offer infinite ways to blend tube and solid-state tonal characteristics.

**CONS:** Doesn't come in stereo.



The Twin-Finity provides input and output level control, plus variable tube/solid-state signal paths.

### On the Bench

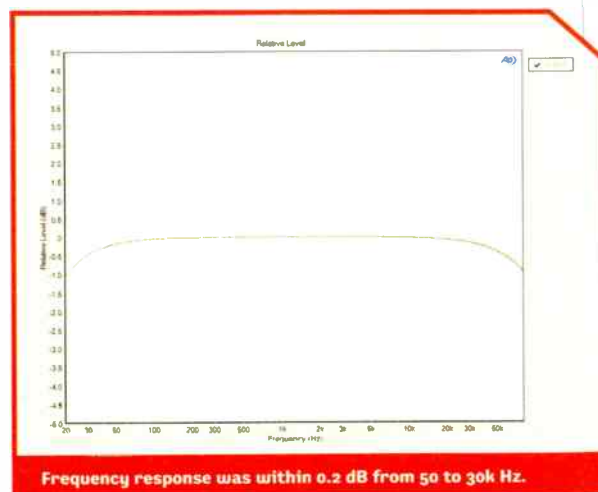
I ran a variety of tests of the 710 using an Audio Precision APx525 system. One of the best features of the 710 is the Drive setting on the meter, which lets you see how much distortion you're introducing to your signal. So I first looked at how accurate the meter's Drive setting was and found that the unit delivered as advertised. At 1 kHz at rated output (+4 dB) with the meter reading "0," the tube or solid-state paths measured 1.36-percent total THD+Noise. (UA measured 1.4 percent.)

Next, I measured frequency response at various settings of input Gain vs. Level. At the rated output (+4 dB), the solid-state path's deviation from 20 to 80 kHz was never more than 0.562 dB and never less than 0.5 dB (at 1 kHz ref. level). The tube side was within 0.04 dB of that figure. For more measurements and interactive graphics, be sure to visit [mixonline.com](http://mixonline.com).

### Between the Twin Paths

I first used the 710 on a 6-string active bass guitar fed through the mic panel after visiting a Radial

JDI passive direct box. At first listen, the feed was distorted when the player hit it hard, but a quick 9-volt battery change in the instrument fixed that. Using the Blend knob, I could hear the 710 go to work on the tone with the bass in the track. What's nice about this feature? It can



instantly audition the tube's influence on the track by sweeping the knob from left to right, providing a nearly endless variety of options. In use, the tube path sounded weaker in level than the solid-state, but when measured on an Audio Precision APx525 test system at 1 kHz and 100

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## The Time and Space Continuum

### Understanding Audio Phase and Polarity in Studio Acoustics

There's a joke about a technician who, after years of retirement, gets called in to solve a problem that no one else has been able to repair. After inspecting the machine, the tech marks a small "x" in chalk to show where the problem is and then submits an invoice for \$50,000. When the company demands an itemized accounting of the charges, the engineer responds, "One chalk mark: \$1; knowing where to put it: \$49,999."

Dedicated pros who invest a lifetime in their craft have a wealth of priceless knowledge. Nowhere is this more applicable than the elusive science (and art) of acoustics. A good acoustician can walk into a room and point out the most obvious errors without any diagnostic tools other than eyes, ears and experience. The on-site consultation fee from an acoustics expert can be money well spent.

Not all of us have the luxury of a well-designed workspace, and even "good" spaces should be re-evaluated from time to time. If that sounds like an invitation to go on a D.I.Y. journey for the terminally curious, welcome to this month's column, where I'll offer an overview of the most commonly used sonic diagnostic tools, plus a new dance: the oscilloscope twist.

In control room acoustics, one of the primary goals is to minimize reflections between the monitors and the listener. If all of the flat surfaces were mirrors—such as the desktop/console, sidewalls and ceiling—then reflections would be obvious, as would the optimum location for acoustic treatment. With mischief in the presence and "air" regions managed, "imaging" would be the most notable improvement—that is, the "realness" and depth of the phantom center image. Better acoustics translates into a more full-bodied center image. Analyzing and solving problems below 250 Hz can be more elusive, but let's start with the basics.

#### A-101

An acoustician's tool kit may seem impressive, but these tools are only as good as the user's ability to interpret them. Optimizing the control room environment may be unfamiliar territory as compared to the process of getting a good drum sound, but both applications share some common ground. The pre-DAW engineer's tool kit was "limited" to mic position, polarity reverse and EQ—all still valid. Sometimes, the either/or polarity option yields interesting and different results rather than a definitive "better," and that's when workstations reveal themselves as more than just mixing and production tools.

Via DAW, the ability to freeze a moment in time allows for a greater understanding of how a single sound source arrives at multiple destinations—mics and ears—where the resulting combinations can make or break a recording, as well as your ability to monitor accurately. Now that



we can zoom in on a multitrack drum recording, it becomes obvious that the 180-degree polarity-reverse option was, at best, a compromise.

We might not be able to time-travel, but using a DAW, time can be manipulated—from coarse sliding of individual tracks (in milliseconds or microseconds) to ticking off samples, "time aligning" by shifting the phase in degrees. It should also be noted that equalizers do their sonic sleight-of-hand by manipulating phase. An *all-pass* network like the Little Labs IBP Junior is a prime example of a tool that can improve the relationship between, say, a mic and a DI or an inside kick mic and an outside kick mic by allowing continuous 0 to 180-degree phase shift. This is great on a live gig where real time is essential.

The phase relationship between two loudspeakers is also critical. Tweaking a digital crossover network on a KRK control room monitoring system was a revelation for me, as it allowed me to manipulate the phase relationship between the midrange cone driver and the dome tweeter. When the timing is wrong, the sound is like every bad monitor you've heard, and when it's right, your ears just know it and no other piece of test equipment is necessary. Considering that the crossover frequency is typically in the middle of the ear's most sensitive region, optimizing crossover phase can also significantly reduce ear fatigue.

#### A Slice of the Sonic Pie

Just as an equalizer can manipulate bass, mids and treble bands, a spectrum analyzer divides the audio band into many smaller slices to reveal the energy in each band. This can be useful when the user is sorting out a mix, but when combined with a pink-noise generator and an omnidirectional mic, it can also help unravel the mysteries of a control room's frequency response. As pink noise is random, the display can be a bit erratic. A good spectrum analyzer allows the information to be averaged—like watching



in slow motion—which is especially useful for observing LF response.

Initially, it's better to look at one monitor at a time, yet it's also important to find the room's acoustic center. Start with both monitors on, place the mic on a boom in the approximate center and then slowly pass through the "center" (between both monitors) to get the best, smoothest high-frequency response. If the response looks like a comb filter, then the mic is not in the center. Any untreated reflections will complicate the process (think mirrors). Once the mic is centered, look at one monitor at a time. The response should be the same, assuming the room design and monitor placement are symmetrical and the monitors are correctly wired and properly functioning.

Back when large studio monitors were the norm, a third-octave EQ was typically inserted into the monitor chain. While this was called "room tuning," the more correct term might be "voicing." IMHO, the cure was often worse than the disease, especially when radically different EQ settings were applied to each channel. The treatment should be identical on both channels; otherwise, left/right phase anomalies can seriously degrade the stereo image.

When a spectrum analyzer shows positive "bumps" in the curve, it doesn't indicate the bigger problem of resonance. Sure, a little subtractive EQ helps and in some cases may be enough. Similarly, no amount of EQ can fill in the holes. Understanding why requires more than the two-dimensional analysis of amplitude and frequency, but suffice to say, trying to force a solution with EQ is not the way to go.

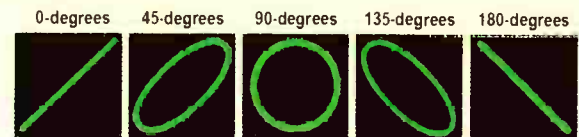
## Waterfall Plot

You might expect relatively flat response from a close-miked monitor, yet the room will interact with the monitor in a way that the spectrum

## AUDIO SCIENCE

### Meet Lisa

An oscilloscope is typically used to measure amplitude and frequency over time, much like a DAW's waveform screen. But in X-Y mode, each audio channel becomes a horizontal or vertical line that



individually shows only amplitude, but together opens a window into the relationships between them, generating a Lissajous pattern. In-phase mono is a 45-degree diagonal line. Reverse polarity on one channel flips the diagonal direction. A phase difference of 90 degrees yields a circle.

—Eddie Ciletti

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analyzer can't fully reveal. Spectrum analysis is great at assisting the ear in finding the trouble spots and for documenting the before/after curves. The third dimension is reverberation time for large spaces and decay/resonance for small spaces.

With eyes closed, the ears know when a space is absorptive, reflective or diffuse by how sound bounces around (or doesn't). Enter the Waterfall Plot, a 3-D representation of frequency, amplitude and decay time. Instead of

random pink noise, an impulse is used to stimulate the space. This can be electronic or mechanical, such as a simple handclap, a balloon popping or two drumsticks clicked together.

Resonance implies that some frequencies take longer to decay than others, whether due to room dimensions and their ratios or to construction-related sympathetic vibration (windows, walls, cavities, etc.). Mid- to high frequencies behave similarly to light, but low frequencies are more squirrely. *The*

*Master Handbook of Acoustics*, by F. Alton Everest, states, "All room modes terminate in the corners of a room." Surely, you've noticed how bass frequencies are more intense in the corners, and other boundaries often louder than at the monitors.

## X-Y Plot

Here's an unusual way to reveal the direction of the offending waves and ultimately determine the treatment location in real time. Back when disk mastering engineers were obsessed with out-of-phase, low-frequency information, there was always an oscilloscope set to X-Y mode to show the phase relationship between the two channels. (For more info on this, see the "Audio Science" sidebar.)

Start by setting up a pair of cardioid mics in X-Y mode at the primary monitoring position (the sweet spot). Connect the mic preamp's outputs to the 'scope's inputs, also in X-Y mode. Most workstations have a multifunction audio generator capable of pink noise, square and sine waves. Start with pink noise to get levels and X-Y balance. Prove to yourself that everything is as it should be by reversing the polarity of one mic channel as shown in the graphic of the 'scope displays.

Switch the audio generator to sine wave and slowly sweep from 250 Hz down to 40 Hz. Along the way, your ears are likely to notice bass bumps and holes—it's useful to document these—and, hopefully, the scope's X-Y display will concur. Set the oscillator to a "hole" frequency, preferably above 100 Hz. Grab a portable bass trap, like Real Traps' MiniTrap or equivalent (2x4 feet by 4 inches thick), and move around with the trap until you find a position that has the most dramatic positive effect on the 'scope's X-Y display. The trap will vibrate when it intercepts the wave and may do so more when at a 45-degree angle. Note that the position of the room's door—open, closed or in-between—can also affect the path that the sound takes around the room.

The goal is to find a location and orientation for the bass trap that improves the phase at the listening position. Once you get that far, you can experiment with the density of the trap. Good luck! ■

*Eddie's acoustics toolkit includes Smaart Version 5 (for its 24th-octave spectrum analysis) and Wave-lab 5 for its ability to turn an impulse recording into a Waterfall Plot.*

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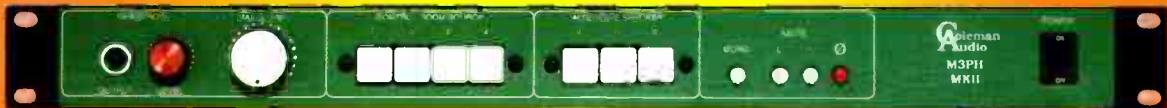


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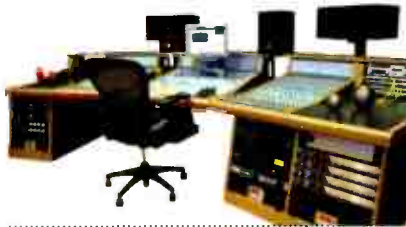


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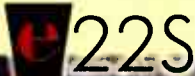
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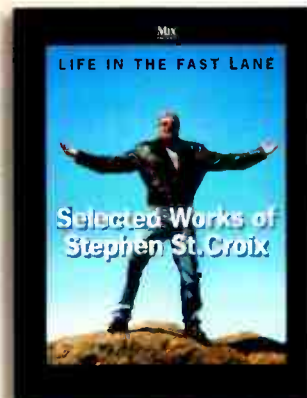
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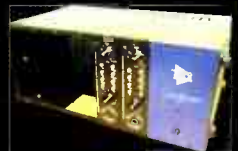


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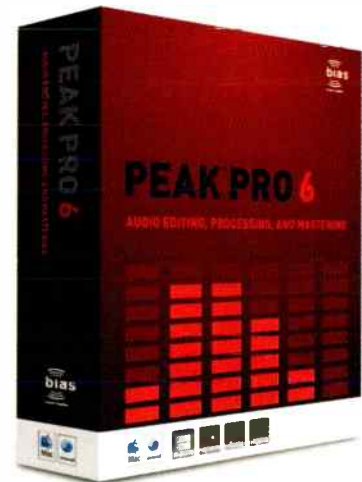


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## George Augspurger

Four decades after founding Perception Inc., this top studio designer/acoustician continues defining the state of the art.

### **What are some of your recent projects?**

I have a number of relatively small studio projects—a couple in the U.S., a couple in Brazil, possibly one in Central America and a number of mastering studios for engineers who left larger facilities and are setting up their own rooms. I'm also doing a fair amount of architectural acoustics for churches and corporate facilities.

### **Has your approach changed over the years?**

I've never had one locked-in approach with my studio and control room designs, but they've remained pretty consistent over the past 15 or 20 years. About 15 years ago, we started getting decent-sized control rooms—20x30, 18x25 or something like that. Large enough to actually hear something in the room without a lot of terrible low-end reflections. It's made a big difference in the way that people mix records.

The current standard is a reasonable amount of space. There aren't any tiny control booths anymore and—except for one or two I can think of—nobody in their right mind would try to do high-quality commercial mixing in an 8x10 office. Having said that, the counterweight is that a lot of people are doing commercial mixing in 10x12 bedrooms. Nobody claims that's the ideal environment—everybody would rather mix in a larger room with good acoustics so they can hear the mix under good conditions.

### **Is ceiling height a major part of that?**

Yes and no. Over the years, a lot of great stuff has come out of places like New York studios in old buildings where the floor-to-floor measurement was 10 feet, which meant you only

had about 8-and-a-half feet to work with. And in some cases, it can be a very in-your-face and very focused—but very workable—environment.

### **How do you define a good-sounding mix room?**

What makes a good mixdown room pretty much settled down concurrently with the introduction of surround sound, which is interesting because nobody's mixing much surround sound as far as the studios are concerned. But what was developed as a good acoustic environment for mixing home theater and broadcast surround mixing also turned out to be a good environment for 2-channel stereo mixing.

There's a difference between a good-sounding room and a very dead room. Rappers like very dead rooms. But a good mix room for most engineers is more like a good mastering room, where the room acoustics are part of the mix. If you try to do a good 2-channel mix with some ambience in it and some effects, you may be totally misled by a room that's too dead.

### **You're known for designing large high-performance mains. Did you ever want to create a near-field speaker?**

Not really. My track record in terms of judging near-fields—in relation to what most commercial engineers would like—has not been that great. I've been involved with manufacturers several times on near-field projects, and what I thought sounded great, did not impress recording engineers.

But loudspeakers have gotten better and more consistent—maybe because everything's made in China now. Last week I tested six commercial tweeters. These right-out-of-the-box, little \$40 tweeters weren't close—they were *identical*. I was amazed they had that level of consistency. And the same holds true for some of the small woofers used in console-top systems. Speakers have gotten a lot more consistent, and most of these smaller monitors are also self-pow-

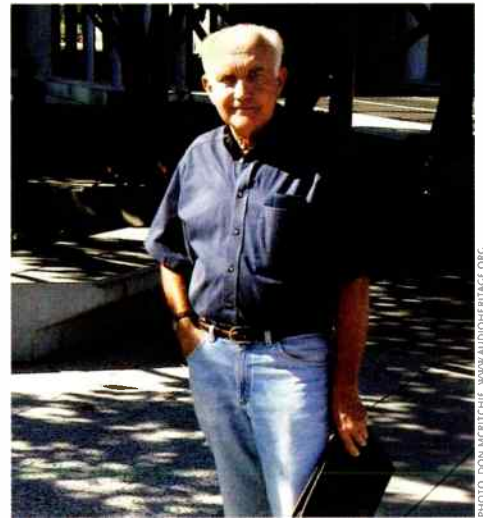


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ered, which also adds consistency. So you don't have that other unknown.

### **Do you have a favorite room you've done?**

Any designer or architect will usually say their last one, but one of my favorites is still the Studio 1 control room at Sunset Sound. That's pretty much my standard for middle-of-the-road pop music—for what 2-channel pop albums should sound like.

### **Can you offer any advice for small studios?**

The main thing is give yourself enough room to experiment with console and speaker location. One mistake in a lot of these rooms is putting the console almost against the front wall and speakers against the front wall to make enough space for the people and out-board gear. This will sound terrible. By moving it back a foot, you can have some decent sound. A little extra space can make a huge difference.

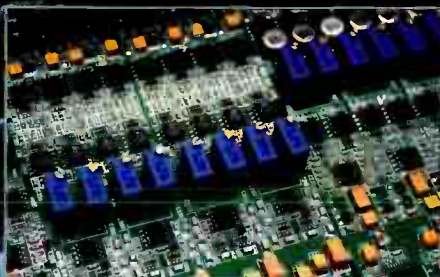
It's pretty amazing when you start out with something that sounds really weird, and then two hours later all you've done is maybe take two patches of stuff off the wall, moved the console six inches and moved the speakers about a foot or two, and, miraculously, everything sounds better. But in between those two points, you've gone through maybe 100 incremental steps, which most people don't have the experience to do. ■



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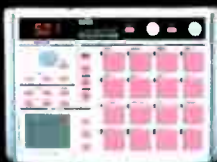
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