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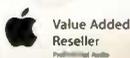
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Music Instruments & Pro Audio

# Industry News

Kirk Imamura (Avatar Studios) and Tony Van Veen (Discmakers) join SPARS' board of directors... Jed Allen joins Universal Audio (Scotts Valley, CA) in the newly created position of director of international sales... iZotope (Cambridge, MA) news: Hart Shafer, director of production management, and end of distribution agreement with M-Audio whereby iZotope will handle its own distribution... Johan Wadsten takes on international product development for Merging Technologies' (Switzerland) Ovation... New business development manager at Powersoft (Florence, Italy) is Thomas Mittelmann... Nigel Toates is TC Group's (Kitchener, Ontario) new Western regional sales manager for the MI retail segment... Distribution news: MXL Microphones (El Segundo, CA) names TMP Pro Distribution (Berlin, CT) to handle the company's V67 Series microphones... Kurzweil and Fostex (Agoura Hills, CA) team up with American Music & Sound (Agoura Hills, CA) for exclusive distribution; AM&S also adds Phonic (Taiwan) to its distribution network; TransAudio Group (Las Vegas) is Tonelux Designs' (Woodbridge, VA) exclusive worldwide distributor; and ARX Systems (Scottsdale, AZ) appoints Sterling Do Brasil (Rio de Janeiro).



Johan Wadsten



Tony Van Veen

## on the move

**Tom Benson,**  
Powersoft VP/director of operations

**Main Responsibilities:** sales and marketing management.

**Previous Lives:**

- 2004-present, RF Pro VP/director of operations
- 1998-2004, Group One live audio division sales/marketing manager
- 1996-1998, Crest Audio Northeast region division manager
- 1986-1996, Metropolis Audio president
- Positions at Ramsac Division of Panasonic, Beyerdynamic, EUMIG, TDK Electronics

**My favorite memory from working in this industry is...** working the Pavarotti concert in New York's Central Park.

**What I'm listening to:** rock, classical/opera, blues, jazz, musical theater and singer/songwriter works.

**When I'm not in the office, you can find me...** on my sailboat in the warmer months, at Broadway shows and concerts, doing volunteer community service, attending events and board meetings at the LI Music Hall of Fame and on my bicycle.



## seen & heard

*"We need to address this; if we don't, we're going to end up with no available credits at all and no good way to track information for payment."*

— Newly appointed P&E Wing Steering Committee co chair Eric Schilling on the recording metadata project with BMS/Chace and the Library of Congress



## Soundworks Live

Two years ago, San Francisco Bay Area-based director Michael Coleman started producing sound for film video profiles for Mix online, focusing on the individuals and sound teams who work on the film sound mixes. Now, Coleman has launched [www.SoundWorksCollection.com](http://www.SoundWorksCollection.com) with an Oscar Sound recognition focus. Every two weeks until Oscar night in March 2010, the Soundworks Collection site will release

a new sound-for-film profile. You can follow the online series and watch such film profiles as *2012*, *Where the Wild Things Are*, *Terminator Salvation*, *The Princess and the Frog*, *Inglourious Basterds* and more.



Michael Coleman

## Mix Master Directory Spotlight

This month's featured listing from the new online-only Mix Master Directory ([directory.mixonline.com/mmd](http://directory.mixonline.com/mmd))

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MIX APRIL 2011, VOLUME 35, NUMBER 4

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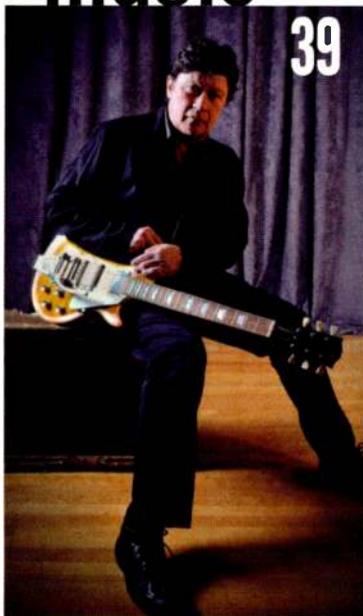
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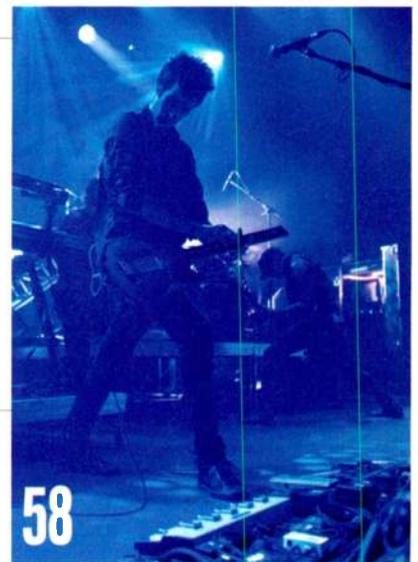
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**On the Cover:** GenAudio's Astound Studios (West L.A.), designed by Russ Berger, specializes in critical listening to surround, from 5.1 source and 2-channel surround mixes using the company's AstoundSound process. For more, go to page 12. Photo: Jeffrey Reed. Inset Photo: Steve Jennings.



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## Complexity Made Simple

I've always loved talking to people in TV sound. Back in the early '90s, I was introduced to terms like ¾-inch and layback and house sync. There was 29.97 and nondrop, and PAL vs. NTSC. Music, effects and dialog. And that was just for audio post. When you got to live broadcast, there were embeds and DigiCarts and jack-fields and mix-minus and comm systems. A mixer might walk into a strange truck and be expected to be up and running for a 7:30 tip-off with only an hour to ring out the system. It all seemed so daunting, a world far removed from the relatively controlled environment of the recording studio, where audio was king and an engineer could justify spending two weeks on getting the perfect drum sound. Once I started writing about TV, where time was slotted in three-hour sessions and Budweiser was coming in after Levi's, or the network exec was coming in with notes on the pilot, due for delivery that night, the recording studio seemed like a walk in the park.

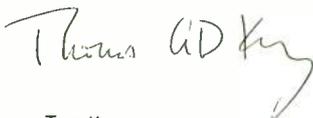
I now know that's not even close to true. It's just as difficult for an A1 from *Good Morning America* to EQ a vocal or have the guitar sit in the mix as it is for a rock engineer to pull the announcer out of the 5.1 crowd or flick the fader to capture the swish of the net on a free throw. Both have their simple elegance, both have their complex demands.

But I still love talking to TV people.

Maybe it's because that despite the fact that they sometimes are truly treated like the "bastard stepchild of video," and despite the fact that they've all heard the punch line that "audio is audio," the ones I've talked to over the years, even the most grizzled veterans, still get an adrenaline rush from hitting the 10 p.m. Thursday network deadline or closing out the overtime game at the Final Four and sticking around for the post-game locker room interview, long after they were supposed to be headed to the airport or warm and dry at the Courtyard Marriott.

I had the pleasure this month to talk with Howard Schwartz, a man who has stayed atop the highly competitive audio post scene in New York for 36 years. He brought rock 'n' roll-style production to jingle post back in the mid-'70s, and today he's excited about bi-directional HD video streams and real-time mixing across three time zones. Then I got to talk to Jeri Palumbo, a self-professed gear junkie who fell into live broadcast audio one day when a producer walked into the post house she was working at and needed a mixer for his live *Sunday Race Day* show. Today, she works on Leno and RF coordination and the NBA All-Star game and countless other sports programs, and she glides comfortably between them all.

None of the above deification of TV sound is meant to take away from today's highly complex demands on recording studio engineers, who face their own challenges in keeping up with lower budgets, a changing market and constant technology upgrades. Not to mention apps and tablets and formats and protocols. Audio production, in the studio or at the broadcast facility or post house, is a highly complex process that the experts make seem so simple. We are all in the midst of a technology and production revolution, with WiFi and Skype feeds and Dropbox and Cloud Computing sharing the vernacular with analog and digital and preamp and DAW. And we are all trying to figure out what tomorrow might bring. It's an exciting time to be an engineer.



Tom Kenny  
Editor

# MIX

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# CURRENT

compiled by Sarah Benzuly

## WAVES, LINN TAKE HOME TECH GRAMMYS

At a special ceremony held Saturday, February 12, 2011—the day before the Grammys broadcast—Waves Audio and Roger Linn were honored for their outstanding contributions of technical significance to the recording field.

In his acceptance speech, Gilad Keren, founder and CEO of Waves Audio, said, “We would like to thank all of our users, beta testers and colleagues for their loyalty and support over the years...We would like to thank our staff, past and present, whose tireless dedication continues to enable us to make the tools that are utilized by many of you in this room. We would especially like to thank all the producers and engineers who have collaborated with us in making this all happen. Everyone at Waves would like to recognize the late Michael Gerzon as a mentor and a friend, whose important industry contributions and technical documents



Roger Linn accepts his Technical Grammy Award.

continue to inspire us to this day.”

In Linn's acceptance speech, he said, “Sometimes, I have a hard time explaining to people what I do for a living. I found that the following usually



From left: Waves co-founder Meir Shaashua, The Recording Academy Producers & Engineers Wing co-chair James McKinney and Waves co-founder Gilad Keren

works pretty well. I would say, ‘Do you remember back in the early ‘80s when pop music started using drum machines and consequently lost all of its soul and humanness?’ ‘Well,’ I’d say, ‘that’s my fault.’ [Laughs] To me there’s nothing more personally gratifying than to create a musical product, release it to the world and watch how it affects this wonderful art of music.”

## 500 Series D.I.Y.

Learn how to build your own 500 Series rack modules with Radial Engineering Ltd.'s free Workhorse™ Open Source Document (WHOS-Doc). The document provides any module maker with mechanical files, electrical limitations, grounding issues and directions on how to take advantage of some of the extra features the company has built into the Workhorse frame, such as the Omniport and internal mixer. To get your copy, e-mail [info@radialeng.com](mailto:info@radialeng.com) and request one.



## JIM WILLIAMSON, 1936-2011

Longtime Nashville-based engineer Jim Williamson passed away on January 20, 2011, after a long struggle with COPD (Chronic Obstructive Pulmonary Disease). He was a respected engineer who had worked with many artists during the years, including Hank Williams Sr., Gene Watson, Earl Scruggs, Merle Haggard and many Decca artists that were produced by Owen Bradley, including Loretta Lynn.

He was manager and chief engineer at Sound Emporium Studios in the mid-'70s to the mid-'80s. Garth Fundis, record producer and current owner of Sound Emporium, reflected on Williamson's passing: “Jim was a wonderful engineer and a sweet guy. He always took the time to talk to anyone who needed a little counseling or advice. He would do that for anyone.”

## Neve Tweaks

Vintage King Audio restored a 40-channel Neve 5300 Series broadcast desk for Visionary Media Company (VMC), which wanted a board that would fulfill its mission: to help vision-impaired engineer/producers overcome obstacles faced in the studio. VMC's new 15,000-square-foot space features a custom control room built for the Neve. Joe Silvato, chief tech at Electric Lady Studios, works at VMC and oversaw the studio build-out

and console install. “With this console, the Studer tape machine and discrete Neve electronics, I can't imagine anybody not being able to work in this room—vision impaired or with sight,” said Silvato. “Those engineers and producers who are blind will have an amazing experience with the desk. Because of the way the console is structured, you can really hear that audible click when you're adjusting a particular frequency. The effect is apparent and very visceral.”

# Industry News



Dave Keller

**LOUD Technologies** (Woodinville, WA) appointed **Jeff Rocha**, VP and general manager for EAW, and **Anthony Taylor**, VP and managing director for Martin Audio...**Dave Keller**, **Panamax/Furman's** (Petaluma, CA) senior VP of sales and marketing, has been named chairman of the Manufacturer's Group of the Independent Professional Representatives Organization...**Lab X Technologies** (Rochester, NY) promoted **Eldridge Mount** to VP of advanced development...New hire at **Harman Professional** (Northridge, CA) is **Aaron Simon**, director of licensed products...Now senior division manager in **Megatrax Music's** (North Hollywood) Radio division is **Ileana Landon**...Changes at **PMC Limited** (Luton, UK): **Mike Picanza**, international sales manager for Northern hemisphere, and **Andy Duffield**, international sales manager for the Southern hemisphere...**L-Acoustics** (Oxnard, CA) hired **Andrew Nagel** to installation support manager.



Storyk is featured in the next "SoundWorks Collection."

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## SoundWorks Collection Update

Architect and acoustician John Storyk has designed and provided construction supervision services for the professional audio and video recording community since the 1969 completion of Jimi Hendrix's Electric Ladyland Studios in New York City. In this exclusive video profile, Storyk discusses the new challenges and changes he faces while designing recording studios. Visit [mixonline.com](http://mixonline.com) to watch the latest "SoundWorks Collection" video.

## Studio Unknown Update

You get a call from an indie filmmaker who wants you to sound design his film—for next to no budget. You need the work so you explain what you can do for that amount, but when all is said and done, you spend excessively more time than you should without getting paid. Sound familiar? In this month's "Confessions" column, we'll spotlight sound designers who have figured out how to make the most of a small budget without putting themselves in a bind, communicate openly with filmmakers about what they can and cannot do, and still maintain their competitive edge.



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## GenAudio's Astound Studios

PHOTOS: JEFFREY REED



Above, left: One of the Russ Berger-designed rooms inside the studio. Above: chief engineer Greg Morgenstein (left) and owner/executive manager Jerry Mahabub. Left: The control room is centered on an SSL C300 HD console, flanked by a PMC IB2S 5.1 monitoring system.

**T**ucked into a small building on the West-side of Los Angeles, Astound Studios is the brainchild of GenAudio chairman and CEO Jerry Mahabub. The room is designed for critical listening to surround from 5.1 sources, as well as 2-channel surround mixes created using the company's AstoundSound® process. The room is run by a small team of mixers, including chief engineer Greg Morgenstein, and senior re-recording engineers Andy Hay and Matt Marrin.

Gear includes an SSL C300 HD console, and converters from Lynx, Avid, Apogee, RME and JCF tube D/As. A PMC IB2S 5.1 monitor system is powered by Ayre amps, two 18-inch Bag End subs, two ADAM A-7s, two ATC SCM20SLs and more. The AstoundSound process was recently used to mix *Discover the Gift* in full-blown AstoundSurround, which debuted at the 2011 Sundance Film Festival. It was also used in Monster Music's special release of the Daft Punk *Tron Legacy* soundtrack. *Mix* recently caught up with Mahabub.

### How did you come up with AstoundSound?

While working in R&D for a magnetic resonance-imaging laboratory in 1988—while I was attending RPI in Troy, N.Y.—I started to notice brain-

imaging patterns that would light up in response to spatial auditory stimuli. This led into taking over 7,000 functional magnetic resonance-imaging brain scans and collecting EEG/MEG data. The coupling of image data from MRI and electrical data from EEG/MEG is what enabled the core of the AstoundSound technology to be born. In 2003, I began working on the first patent, which was filed in May 2004, and I formed GenAudio immediately afterward.

*The AstoundSound process is gaining traction. Tell us how you got here.*

The industry has been moving toward adding more speakers to create a better spatial audio experience for the listener, especially for theatrical releases, given the explosion of 3-D film releases and other 3-D content. We focused on a solution that would make sense for the consumer and the theater chains. The vision I had in 2004 was to create a software-based approach to enable any theater to have significantly enhanced spatial audio presentation. It had to be an encode-only software process that would work with all existing delivery formats. We started off by launching a stand-alone version of the software for pro audio engineers to beta test back in October 2007 during the

AES event in New York City. To that point, people like Neil Dorfsman, Hal Winer, Don Garbutt, Gus Skinas and Mick Guzauski, among many others, helped out tremendously to determine how the software should behave and with what features.

*Tell us about the studio on the cover.*

In 2008, I met Greg Morgenstein, currently GenAudio's senior VP of audio engineering and Astound Studios chief engineer. I extended a full-time offer to Greg, and shortly after I took over the studio build-out. I called Russ [Berger of Russ Berger Design Group] and immediately retained him and his staff to start working on the project.

*What's next for GenAudio and AstoundSound?*

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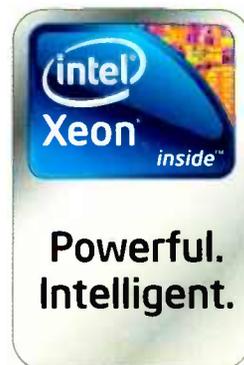
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# MIX SOUND FOR PICTURE

A SPECIAL SUPPLEMENT TO MIX MAGAZINE

WILL EGGLESTON



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"Voyager," page 16

# JOHN STRAUSS, 1921-2011

Composer and sound editor John Strauss passed away after a long battle with Parkinson's disease. He is best known for composing the music for Best Picture winner Amadeus' film and soundtrack; he also served as the film's music coordinator and is briefly seen in the film as a conductor. He also coordinated the music for *Hair* (1979), *Ragtime* (1981) and *Valmont* (1989). In his nearly 50-year career, Strauss won an Emmy Award



for sound editing (*The Amazing Howard Hughes*, 1977) and a Grammy Award for Best Classical Album (Milos Forman's *Amadeus*, 1984).

In the TV music field, he composed the theme to *Car 54, Where Are You?*, and served as music editor on *L.A. Law*. Strauss also worked on numerous Woody Allen films, including *Take the Money and Run*, *Bananas* and *Everything You Always Wanted to Know About Sex*.

From left: Music Mix Mobile's Jay Vicari and Joel Singer



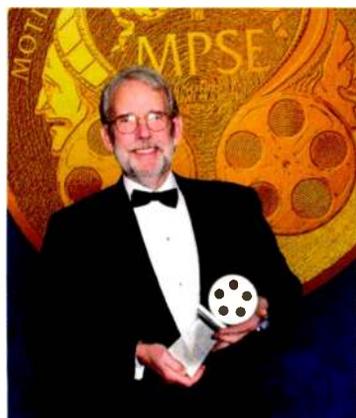
## Music Mix Mobile Launches Voyager

Music Mix Mobile—the high-end remote recording company owned by principals Joel Singer, John Harris, Jay Vicari and Mitch Markatansky—launched in 2008 with a power-packed East Coast truck named Eclipse. In 2009, they added a mirror-image West Coast truck dubbed Horizon and run by veteran engineer Mark Linett. Then, in mid-2010, to address the needs of more budget-conscious live events, they built the mid-sized Voyager.

"We've found in the past three years that there is definitely a need for high-end remote production, but that not everybody has the budget, or sometimes the space, to hire our flagship trucks," Singer says. "In 2009, we got a few calls to service clients who had the need for uber-capacity, reliability and our personnel, but just didn't have the budget. Plus, we do a lot of work in Manhattan, where space is a consideration but clients still want that world-class, accurate monitoring environment."

Voyager includes an Avid D-Command worksurface; two Pro Tools HD systems, Mix Core and MADI I/O; 5.1 Genelec 8200 Series active monitoring system; Aphex 188 8-channel mic pre's; Avid and TC plug-ins; and the Waves Mercury Bundle.

Since its launch, Voyager has worked the Latin Grammy Awards, done a show with Linkin Park for Fuse, traveled to the White House for the In-Performance special on Motown and, when we called in mid-March, was in the middle of being one of two mix stages for recordings done the night before at the Rock and Roll Hall of Fame Induction Special.



## Walter Murch on taking home the 2011 MPSE Career Achievement Award

"The great power of our craft as sound editors comes from the fact that we are not tied to the literal 'truth' of an event. We are free to re-associate sounds and images, and the power of cinema is such that the audience will be inclined to accept them. This metaphoric sound should strive to create a purposeful and fruitful tension between what is on the screen and what is kindled in the mind of the audience."

## GDC 2011: 'Red Dead Redemption' Best Audio



Rockstar San Diego's Wild West adventure game *Red Dead Redemption* was a big winner at the 11th Annual Game Developers Choice Awards (March 2, 2011, S.F.), bringing home a total of four awards: Game of the Year, Best Game Design, Best Technology and Best Audio.

### Here is the sound crew that worked on this title:

Anke Bakker, *Foley supervisor*  
Dean Giammarco, *Foley editor*  
John Moros, *Foley editor/sound recordist*  
Don White, *Foley recording mixer*  
Brian Scibinico, *Foley engineer*  
Gordon Sproule, *Foley mixer*  
Shaun Brennan, *Foley artist*  
Goro Koyama, *Foley artist*  
Andy Malcom, *Foley artist*  
Maureen Murphy, *Foley artist*  
Jenna Dalla Riva, *Foley recording assistant*  
Rory Cash, *sound recordist*  
Brad Cohn, *sound recordist*  
Suzanne Goldish, *sound recordist*  
Paul Levin, *sound recordist*  
Rich Macar, *sound recordist*  
Eric Strausser, *additional dialog editor*

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Digital Cinematography  
Entertainment Business  
Game Art

- Game Design
- Graphic Design
- Internet Marketing
- Mobile Development
- ▶ Music Business
- ▶ Music Production
- Sports Marketing & Media
- Web Design & Development

For scenes with actors talking while on horseback, production sound mixer Ronan Hill opted to go primarily with RF mics.



TO: JEFF HEATHER SLOAN

## PRODUCTION SOUND FOR HBO FANTASY SERIES

By Blair Jackson

HBO's new 10-part series, *Game of Thrones* (starting April 17), is based on a best-selling series of American writer George R.R. Martin epic fantasy novels called *A Song of Ice and Fire*, of which *A Game of Thrones* is the first book. Four gargantuan tomes have been published since 1996, with three more promised, plus there are also prequels and many tangential products (games and such) already out there or to come.

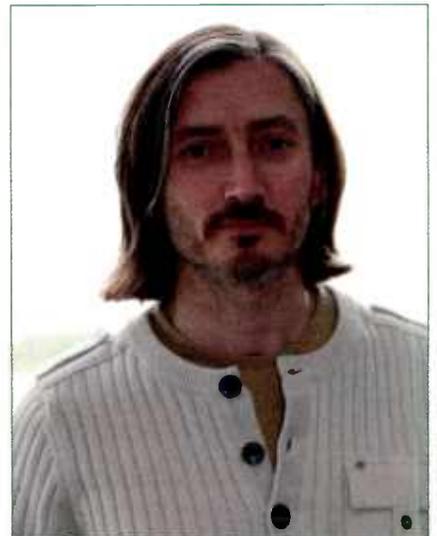
Set in an undefined time that bears some similarities to Europe in the Middle Ages, but also has characteristics of other epochs and cultures, and elements that are pure fantasy, *Game of Thrones* is a dense and complex story. It's set in the Seven Kingdoms of the Westeros, each ruled by a different "House," each with its own history and complicated personal and historical entanglements. There's a snowy land, a desert land, great fortresses, battles, betrayals, sex, court intrigue, dragon eggs and even some murderous undead—quite a spectacle.

Season One was shot in Northern Ireland and Malta (and for the pilot only, Morocco instead of Malta), using mostly little-known American, British and Irish actors. The 21-week shooting schedule for the 10 episodes was fast-paced and

intense, as the action moved between numerous outdoor locations around Northern Ireland and to sets built on a huge soundstage complex in Belfast known as the Paint Hall, which at one time was part of the Harland & Wolff Shipyards where the Titanic and many other ships were built.

"The Paint Hall is this aircraft hangar-sized building with four cells [each 16,000 square feet] for constructing sets, but it was purpose-built to paint ships and not for recording sound," says production sound mixer Ronan Hill, himself a Belfast resident. "It's got metal walls, and I think we initially reckoned it had about a 4-second reverb time, so right away that is something you have to plan for. We have a lot of large sets, and the nature of this period [in the story] means there are no glazed windows, so things are opened into the void. And the nature of lighting is they like to have the option of lighting from above so they're not necessarily enclosed at the top either. So it's shaping up very nicely, sound-wise, as you can see. [Laughs] Then you're also dealing with special effects with fans to make whatever's supposed to be outside the windows move, and all the other issues.

"Hopefully, for Season Two, if it gets greenlit, they'll continue making progress in trying to improve the four existing cells, and they're also building another two stages at the Paint Hall location," Hill continues. "But even with the challeng-



Production sound mixer Ronan Hill mixes on a Cooper 208D, recording to a Sound Devices 788T.

es, it worked out fine and it was nice to have some respite from going in the elements.”

Much of the series was shot outdoors in sometimes remote locations—always a challenge for production mixers. “We’ve been on locations that are right on top of a mountain where it means getting up very early, cross-loading onto four-wheel-drive trucks, getting up to the top of the mountain and being up there for the day to work,” Hill says. “For that one on the mountain, we drove an hour-and-a-half [out of Belfast] to get there and then it’s half-an-hour up the mountain, so it’s a very long day. But it was beautiful and isolated. The flip side of that is they’ll find another location in woods beside a main road, on a flight path. Those are situations where you might go more heavily into radios [RF mics]. You’re trying to get the mics more isolation so you can keep the background out as much as possible and hopefully they can also take a little bit more out of it in post if possible.

Hill has primarily worked on various UK television series (*Bel’s Boys*, *The Invisibles*) and independent films (*Five Minutes of Heaven*, *Hunger*, *The Eclipse*—all critically acclaimed) over the course of a career that goes back to the mid-’90s. During that time, his production sound rig has evolved from stereo DAT to an 8-channel digital recorder and 8-channel mixer. “The mixer I’m using is a Cooper 208D, which is really my favorite piece of kit,” he says. “[The show is] recorded onto a Sound Devices 788T 8-track, which is also a great machine. Before that, I had a 744, and actually I still keep that on my cart as a backup machine.

“One thing I would love Sound Devices to do,” he adds, “is they have eight analog inputs on the side of the 788 and eight digital inputs on the back of it, but you are unable to use a full combination if you like. You are able to use the eight analog inputs and even two digital inputs as isolated tracks, but on something like *Game of Thrones*, where you’re up in characters all the time—I think we had 14 speaking characters in one scene—it would be great to have even more flexibility with inputs. Due to the nature of being either outside somewhere remote or inside somewhere that isn’t always sound-friendly, you tend to be wiring people up constantly to cover everything you need.”

Hill will usually run two booms on a scene, if possible—his mics of choice there are Sennheiser MKH 60 or MKH 70 shotguns for outside work; for inside, an MKH 50 or a couple of the newer

versions in that line, the MKH 8040 or 8050. As for RFs, “Before I started *Game of Thrones*, I replaced my long-serving Audio Ltd. 2020 radio mics with new UK spectrum-channel 32 2040 models. I have six belt pack transmitters and two mini-transmitters that are smaller and very discreet. The backpacks are very good and very versatile in that, if you need to, you can buy a lead off Audio Ltd., plug it in and it will phantom-power any mic, so that’s great. Audio Ltd. also makes the RK6, which is a rack that takes six receivers, and the RK3, which is a little portable rack that takes three. So for my portable kit, I have two RK3s strapped together, and that allows my RK6 to stay on the cart. I can connect all racks together to allow up to 12 channels from two antennae. Believe it or not, in 21 weeks I only went portable once, but I’ve used it more on other [projects].”



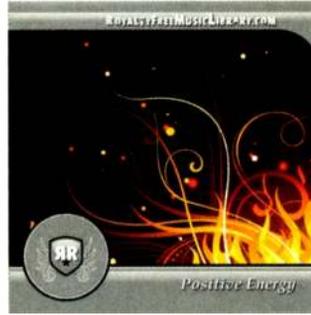
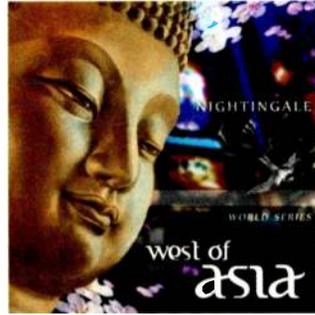
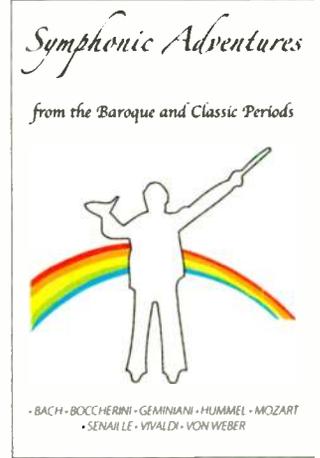
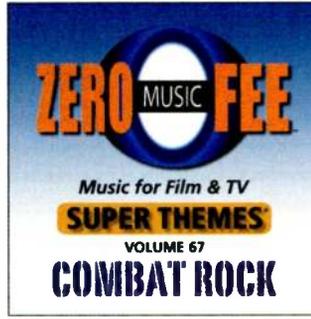
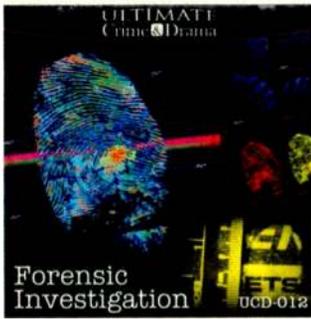
The production mixer’s job is a never-ending series of calculations and accommodations to get the best possible sound for a scene. One complicating factor is the now-common practice of using two cameras at once, which can affect boom placement and the overall sonic perspective. Clothing in a series like this can also pose challenges for RF mics “because of all the leather and the chain mail, which can be quite noisy,” Hill says. “Also, larger numbers of people in a larger environment can be hard. In Episode One, we had a three-page scene where we had seven people talking right beside a river. They all have one line each and by the time you get the fader up on the first guy, the next guy is talking, so you have to be very fast. There are scenes where there might be music being played—drummers and such—and you have to plan for that, and also a lot of fast-paced exteriors, with people talking on horseback; that gets pretty tricky, as well. Obviously, you’re going to go radio on that.”

And then, of course, there’s weather: “We were shooting September to December, so you’re getting into -10, -15 [Celsius; that’s 15 and 5 degrees Fahrenheit, respectively]. We had quite a cold snap and also quite a lot of rain. It didn’t really pose any problems for me other than the discomfort. In any case, you do the best you can in the situation you’re in, give them as much as you can to play with, and then whatever you can’t manage due to environmental circumstances or the nature of what you’re doing, you know they’re going to do a good job on it in post.”

How does Hill deliver his tracks to post? “Normally, the first two tracks would be two booms—what’s on camera would be the first boom and what’s off would be the second boom,” he says. “I think that’s more of a European way rather than an American way, where I gather post generally likes everything on one track. What I did on this job, because I still want the boom to be what they’re listening to first, is the main boom still goes on the first track, but then I was giving them a radio mix on the second track and then isolated [radio] tracks with second boom after that. That allows them to be able to tweak between the radio mix with a little bit of boom, or if the radio mixes are noisy, they can fade the boom up and have a little bit more of it. That’s the best way to give them something they can listen to quickly, and that should be enough to get them to the next stage with it.”

Hill is constantly backing up his work over the course of a day—the Sound Devices 788T has both an internal SATA hard drive and a CompactFlash, which Hill uses with a FireWire 800 port. “I tend to back up rushes off the hard drive onto the daily CompactFlash, so at least you’re always running two recordings in the one machine, if you like. If one goes down, you still have the other one.”

Posting for the series (still underway at press time) has been at Screen Scene in Dublin. Meanwhile, Hill has gone on to other projects, but is awaiting word on whether there will be a Season Two of the HBO series, which has been a tremendous creative endeavor for him, provided steady work and has been close to home: “One of the good things about this job and being based in Belfast is that even though the day may be long, getting into 15 or 16 hours, you’re still getting home every night.” III



Clockwise, from top-left: 615 Music *Ultimate Crime & Drama*, *Extreme Music Singer Songwriter 2*, CSS Music *Super Themes Vol. 67 "Combat Rock,"* Bob's Music Café *Symphonic Adventures*, *FreeMusicLibrary.com Positive Energy*, *Nightingale Music West of Asia* and *Atomica Music Reality Drama TV*

# Ready-Made Music for Hire

## PRODUCTION MUSIC LIBRARIES OFFER SOMETHING FOR EVERY PROJECT

By Matt Gallagher

Production music libraries continue to offer turnkey soundtrack solutions for media productions of all sizes and scopes, including films, TV, videogames, radio, mobile devices and Web-based videos. Library companies remain steadfast in developing and refining online search capabilities and flexible delivery options. Michael Nurko of TRF Production Music Libraries says that he is seeing manufacturers focus on download and hard disk delivery, eventually phasing out CDs entirely. Additionally, many companies have added songs and entire albums from indie artists to their catalogs, handling their licensing and representation, and negotiating and securing placement deals.

Here is a sampling of what's new in production music libraries in 2011.

Now owned by Imagem and representing Cavendish Music in North America, obtaining a catalog that dates back to the 1930s, 5 Alarm Music's (Salarmmusic.com) on-site production team has commercial credits that include those for U2, Madonna, William Orbit and Trevor Horn. 5 Alarm also offers the 1 Versatile Under-score Library created by music supervisor Greg Debonne that features categories such as drama, rock, comedy, documentary and electronica.

In December 2010, Warner/Chappell Music, the parent company of Non-Stop Music (www.nonstopmusic.com), acquired 615 Music (615music.com) to establish Warner/Chappell's first Nashville production music operation. 615 Music's new Ultimate Crime & Drama music library comes on 12 discs and was designed for such TV shows and productions as real-life crime, medical mysteries, law-enforcement dramas, and chilling and spooky stories, as well as for voice-over. 615 Music also offers the 615 Soundminer HD (Win/Mac) and online search at search.615music.com for selecting and downloading tracks.

Aircraft Music Library's (www.aircraftmusiclibrary.com) new music division, indieTracks (www.indietrackslibrary.com), offers 100-percent, pre-cleared original songs from indie bands, singer/songwriters, composers and other musical artists. New releases include An Overdue Reunion, Glory and Honor, Chasing Phantoms, They Will Find You and Ghost In the Machine, all of which feature orchestral arrangements, with the latter presenting a classical and electronic hybrid piece.

*Pounding Percussion Vol. 5* by composers Tobias Marberger and Gabriel Shadid is new

from APM Music's (www.apmmusic.com) Epic Score Series, delivering high-impact, energetic grooves with a loud, forceful-sounding orchestra. The Sound Design (SD) versions include orchestra, orchestral FX, choir and sound design elements; solo percussion is available in 30-second and full-length versions.

This month, Dallas-based Atomica Music (atomicamusicalibrary.com) launches three catalogs—Catapult Music, Right Track Music and the flagship line, Atomica Music—with nearly 200 albums and 7,500 tracks. Licensing is provided on a per-use, Annual Blanket or Production Blanket basis.

London-based Audio Network (www.audionetwork.com) expands its library with a new Latin Catalogue composed by Grammy Award-nominated composer Tim Devine and offering regional music from Argentina, Cuba, Mexico, Brazil, Venezuela, Colombia, Puerto Rico, Dominican Republic, Chile and Spain. Styles include Latin pop, Latin jazz, mariachi, norteño, Tejano, reggaeton, bachata, salsa with hip-hop, samba, boogaloo, tipico, cha-cha and more.

*Symphonic Adventures* from Bob's Music Café (bobsmusiccafe.com) features one of Europe's premier session orchestras performing



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favorites from Bach, Vivaldi, Mozart and other period composers. Twenty-seven pieces are available in their original lengths, along with 10, 30 and 60-second cuts. This collection is available for \$89 on two audio CDs or as WAV files on a single DVD-ROM, and includes a full royalty-free buyout license.

CSS Music ([cssmusic.com](http://cssmusic.com)) and D.A.W.N. Music (CSS Music's individual-track download site, [www.dawnmusic.com](http://www.dawnmusic.com)) now offer Super Themes Vol. 67 "Combat Rock" as part of its new Zero Fee Music ([www.zerofeemusic.com](http://www.zerofeemusic.com)) package of more than 12,000 tracks of film and TV music. The package is designed for projects to be broadcast on television to venues that are licensed by BMI and ASCAP; when producers submit their Music Cue Sheets for these projects (at no charge), the master use, synchronization and DVD fees are then waived for qualified productions. Music is downloadable in 44/48kHz WAV format or MP3 320 and AAC.

New releases from DeWolfe Music ([dewolfemusic.com](http://dewolfemusic.com)) include the two-part *Vistas & Landscapes* (themes and moods that evoke the great outdoors) and *The Indie Collection Vols. 1 and 2*, which present indie rock and pop culture with vocals and instrumentals. DeWolfe's indie label, Beats & Rhymes ([beatandrhythms-online.com](http://beatandrhythms-online.com)), is a music licensing company specializing in hip-hop and related urban music styles geared at music supervisors of film, TV and videogames. The catalog comprises 16 CDs and several exclusive tracks available upon request.

Extreme Music ([extrememusic.com](http://extrememusic.com)), the production music library arm of Sony/ATV Music Publishing, adds *Singer Songwriter 2* and *Teen Pop 2* from multi-Platinum songwriter/artist/producer Robbie Nevil; other collections include music from Quincy Jones, Hans Zimmer, Snoop Dogg, Rodney Jerkins, Robbie Nevil, Junkie XL and Paul Oakenfold, among others.

Some recent releases from FirstCom Music ([www.firstcom.com](http://www.firstcom.com)) include *Journeys Through History*, a collection of varied orchestral themes; *Retro Advertising*, evoking musical styles typically found in commercials from past decades; and *The Golden Age of Musicals*, featuring orchestras, Big Bands and smaller ensembles. FirstCom also rolled out a new Website in February with enhanced search and networking capabilities, themed playlists, and online licensing and cue sheet generation.

Fresh Music ([www.freshmusic.com](http://www.freshmusic.com)) is offering new royalty-free music on CDs (\$89

each). *TV Lifestyle Sitcom* presents arrangements tailored for TV and online. *Movie Score Music* is geared at film, video, documentaries and other production applications. Meditative, new-age and ambient music is found on *Inner Peace*, while two CDs, *The Four Fabs* and *The Four Fabs Too*, cover the musical styles and songs created by The Beatles from 1963 until they disbanded.

New releases from GMP Music ([gmpmusic.com](http://gmpmusic.com)) include *Liquid Movement* (soft rock,

producer/composer Robb "Rapture" Hutzal; the loops are available in REX2, WAV, AppleLoops and NKI formats. Each includes a full mix and audio stems for individual families of instruments.

This year, Killer Tracks ([www.killertracks.com](http://www.killertracks.com)) released the Dozier Generations collection featuring two albums of original music from legendary Motown songwriter Lamont Dozier and his son, contemporary pop producer Beau Dozier. *Lamont Dozier: Reflections of Motown* features live recordings of soul and pop melodies while *Beau Dozier: R&B Pop* mixes modern R&B/pop songs with vocals and club remixes of his father's melodies.

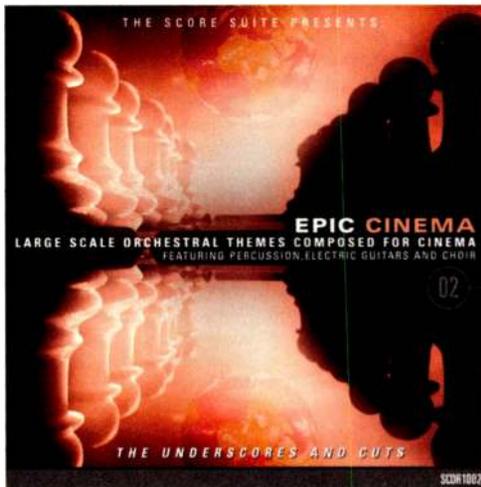
The Empire Trailer Series from Manhattan Production Music ([www.mpmusic.com](http://www.mpmusic.com)) is a new library designed for trailers and promos. Each song contains three unique sections to cover all parts of a trailer. The first releases are *ETS001: Excite* and *ETS002: Whimsical Romance*.

Celebrating its 20th anniversary this year, Megatrax ([megatrax.com](http://megatrax.com)) is spotlighting the work of Eric Cunningham and Chris Lang—Los Angeles-based producers and the founders of Chronic Music and Killer Edge—in its new LA Riot Catalog, offering high-energy extreme-sports tracks, rock, techno, hip-hop and groovy retro styles.

Royalty-free music from the Music Bakery ([musicbakery.com](http://musicbakery.com)) covers the entire spectrum of musical styles, and is offered as buyout production music that's logically categorized and easy to find with search and audition features. New collections include *Crisp Background Beds* for narration and *Spicy High-Profile Themes* for image and emotion. Mix readers can use the discount code "MIX" toward purchases from Music Baker's Website.

MusicBox ([musicboxmx.com](http://musicboxmx.com)) will handle the licensing of more than 700 songs from the Hella Good Records (HGR) record label, which provides songs that are pre-cleared for one-stop licensing. MusicBox also introduced its Epic Series collection of themes composed by Emmy-winning composer Russ Landau (*Survivor*, *Fear Factor*). The library comprises more than 1,500 tracks that convey a range of moods and emotions, with titles such as *Adventure of a Lifetime*, *Winner's Reward*, *The Good Life*, *Cliffhangers*, *A Hero Emerges* and *Judgment Day*.

Nightingale Music ([nightingalemusic.com](http://nightingalemusic.com)) represents more than 100 indie artists for licensing and producing original music, and released the 25th CD from its library, *West of Asia*, the



Top: Audio Network *Latin Catalogue*, composed by Grammy Award-nominated Tim Devine. Bottom: *Opus 1 Epic Cinema 2* by Emmy Award-winning composer Dennis McCarthy.

electronica, ambient, chill, industrial), *Seriously Smart: Ad Shop XXXI* (quirky, bluegrass, electronica, retro, acoustic, soft pop and ambient), *Romance* (pastoral, orchestral), *Down to Business* (orchestral), *Time to Relax: Ad Shop XXVIII* (soft rock and acoustic), *Incinerate* (thriller, sound design), *Great Ad Music: Ad Shop XXX* (quirky, electronica, variety), *Fighter* (hard rock) and *Nature Li Jiang* (nature, relaxation, meditation and cultural).

Hollywood Edge ([www.hollywoodedge.com](http://www.hollywoodedge.com)) has released *Pop Rock Grooves*, which comprise broadcast-ready music loops from

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~ David Bottrill

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World Radio History

## ready-made music for hire

third in its World Series. The new release offers a fusion of Eastern and Western cultures with tracks that are cinematic, thematic, expansive and lush.

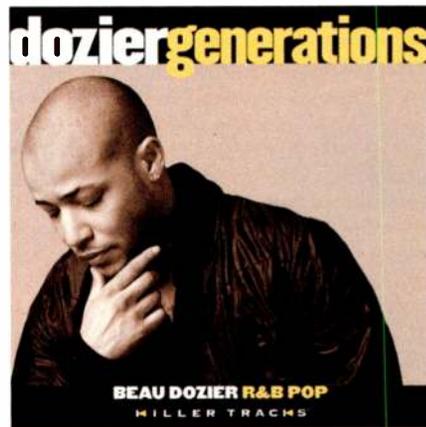
At NAB, **Omnimusic for Media** ([omnimusic.com](http://omnimusic.com)) will release *Music Outside the Box* for film, television and Web projects. The CD's tracks are divided into five categories—solo instruments, small group, large group, hybrid acoustic/electronic and electronic—and are licensed individually depending on media.

**Opus 1** ([opus1musiclibrary.com](http://opus1musiclibrary.com)) offers *The Score Suite Presents: Epic Cinema 1 & 2*, composed by Emmy Award-winning composer

Dennis McCarthy and percussionist Michael Keeley. Disc One represents large-scale orchestral themes, featuring percussion, electric guitars and choir. Disc Two presents the percussive underscores along with a variety of versions and edits, giving editors the ability to blend various compositions.

**Production Garden Music** ([productiongarden.com](http://productiongarden.com)) covers a variety of styles in three new releases: *Hip Hop and New Skool*, in which East Coast meets West Coast; *Hope and Trust*, offering inspirational themes; and *Ambient Anthems*, with a European influence.

**RCB Music Library** ([rcbmusiclibrary.com](http://rcbmusiclibrary.com))



**Killer Tracks' Dozier Generations: Beau Dozier—R&B Pop mixes modern R&B with pop tunes.**

continues to provide an online database of tracks that are searchable using key words. Customers can preview via low-quality MP3 files. Current offerings include *Crime Scene Investigative*, *Generic Jingles* and the *Variety* series.

**RoyaltyFreeMusic.com** ([royaltyfreemusiclibrary.com](http://royaltyfreemusiclibrary.com)) offers a lifetime license and will be launching a new line of royalty-free sound effects and several new music releases—specifically for its All-Purpose Beds category. The company has added *Forward Motion*, *Positive Energy* and *Fluid Grooves* CDs; additional CDs are in production.

**Selectracks** ([selectracks.com](http://selectracks.com)) announces *Critical Mass*, a high-end trailer collection comprising Vol. 1: *Armageddon* and Vol. 2: *Apocalypse*; *4 on the Floor*, a collection of pop songs; *Feel the Sound*, a collection of songs from indie artists; and original rock-pop songs from *Josh Auer: Something You Can't Ignore*.

**SmartSound** ([smartsound.com](http://smartsound.com)) created **Royalty-Free Hit Packs** for its *Sonicfire Pro 5 Scoring Edition* software, offering a range of royalty-free sound effects and musical elements. Hit Packs are available only via download and can only be used with *Sonicfire Pro 5 Scoring Edition* or later. *Hit Pack 1* is included for free with *Sonicfire Pro Scoring Edition*. Three new Hit Packs are available for \$39.95 each or for \$99.95 for all three. *Hit Pack 2: Heavy Hits & Impacts*, *Hit Pack 3: Sci-Fi & Suspense* and *Hit Pack 4: Swells & Whooshes* each will install Hit Files (40 unique sounds) for use with *Sonicfire Pro Scoring Edition*.

From **SONiVOX** ([sonivoxmi.com](http://sonivoxmi.com)) comes *Big Bang Cinematic Percussion* (\$299.99), a virtual instrument delivering more than 200 percussion patches representing traditions from around the world, packaged along with SONiVOX's *Intelligent Rhythm Control* (I.R.C.) technology.

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# Chuck Leavell

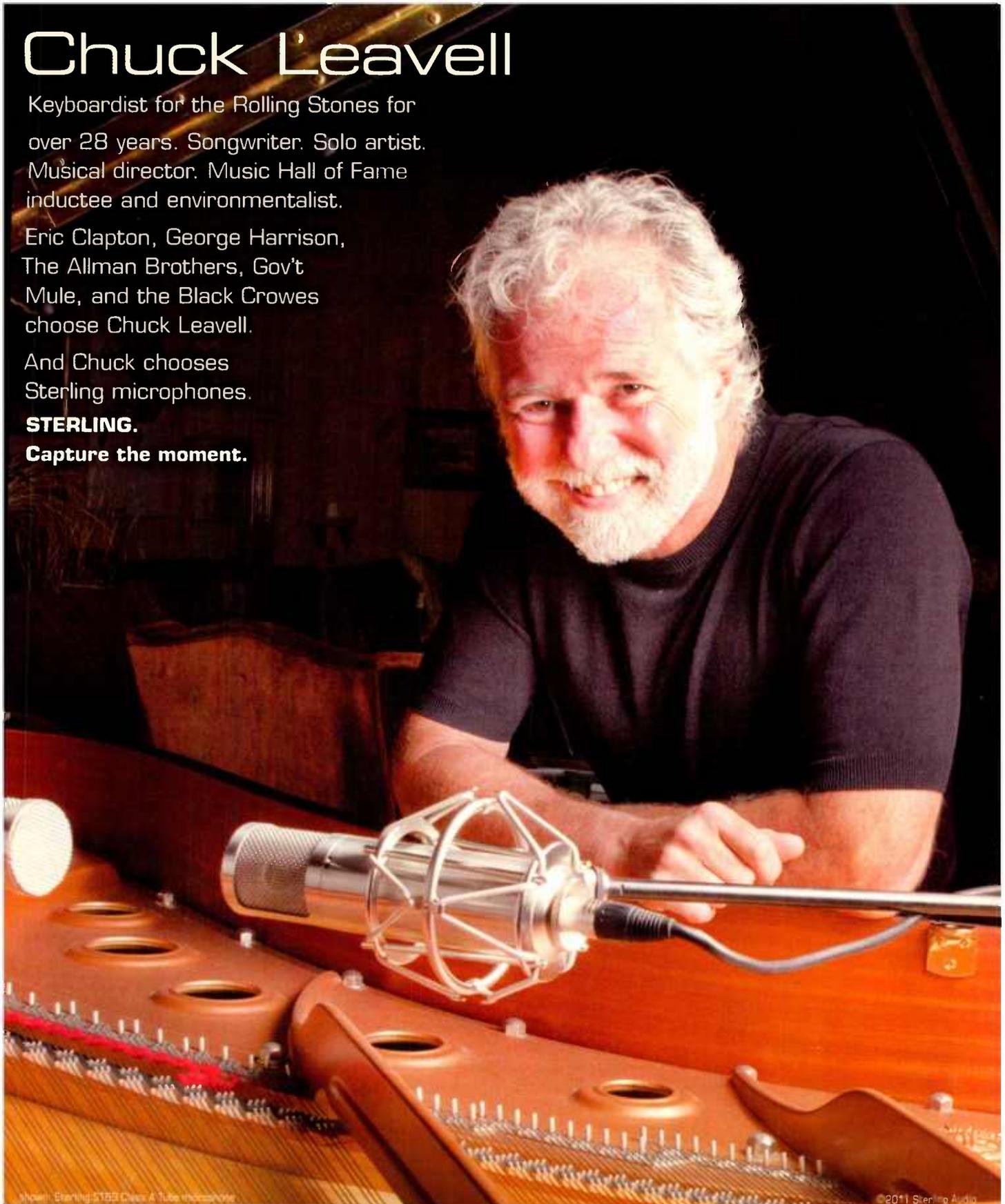
Keyboardist for the Rolling Stones for over 28 years. Songwriter. Solo artist. Musical director. Music Hall of Fame inductee and environmentalist.

Eric Clapton, George Harrison, The Allman Brothers, Gov't Mule, and the Black Crowes choose Chuck Leavell.

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Chuck Leavell and Sterling Microphones

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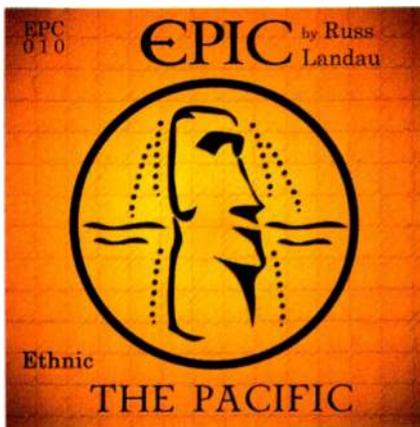
World Radio History

## ready-made music for hire

Sounddogs.com (sounddogs.com) distributed more than 130,000 production music tracks online from major production music publishers. Notable recent releases include titles across numerous genres from Music Revolution, including rock, corporate, hip-hop, jazz and orchestral; and from Royalty Free Music Revolution, including Solo Acoustic Guitar, Pastoral (Orchestral), Orchestral Comedy and Light Acoustic Drama.

Sound Ideas (sound-ideas.com) provides the Royalty Free Music Collection (Mac/PC) on a dedicated 160GB hard drive, containing 10,872 music tracks (from all 36 CDs of The Super Royalty Free Music Combo) in 16-bit/44.1kHz Broadcast WAV file format. All WAV files have been embedded with metadata that is cross-referenced for accurate searches in asset-management software. Content includes the Mix Broadcast Music Libraries, Twisted Tiger Music, Wedding Music, Headline News Music, Trailer Trax and more.

Stephen Arnold Music (stephenarnoldmusic.com) presents The Vault (anti-library.com), a catalog of 100-percent licensable music by staff composers that's built around a Web interface and exclusive representation. The lat-



**The Pacific is from MusicBox's Epic Series, composed by Emmy-winning composer Russ Landau.**

est additions include a three-volume set from singer/songwriter Jon Christopher Davis; *Counterstrike*, a collection of suspenseful, intense, dramatic scores; and *Indie Pop*.

StockMusic.com sells a plethora of titles grouped by category, and recent releases (at \$99 each) include *Olympic Spirit* and *Corporate Inspiration*, each providing 10 themes as a full mix, alternate mix or underscore, and three different broadcast lengths. Additionally, *Dramatic TV Music* offers 21 full-length,

royalty-free melodic tracks.

Later this year, TRF Production Music Libraries (trfmusic.com) will release its new Apollo Live Production Music Library, with more than 100 new CDs. With categories such as Ambient World Themes, Medieval Fantasy, Extreme Sports, Eerie Drones, Surfer Rock, Electronic Crossover, Landscapes, Classical Electroscapes and Solo Piano, the Apollo library will come in Soundminer format for both search and download from TRF's Website and on hard drives.

VideoHelper (videohelper.com) is offering *Dramotional*, a collection of 144 emotionally charged cuts for download. Example selections include "Armed and Ready," "Floating Flights of Fantastical Fancy," "Victorious Secret," "Lep-er Bromance," "Head Vs. Heart" and "Feeding God's Fish."

Westar Music's (westarmusic.com) Website provides detailed, organized information about each CD release in its catalog, as well as a tutorial for using different search methods. Recent releases include *Rock: Daring & Dangerous*, *Jazz: Jazz Combo* and *Drama Film Scores: Horror & Suspense*. III

Matt Gallagher is an assistant editor at Mix.

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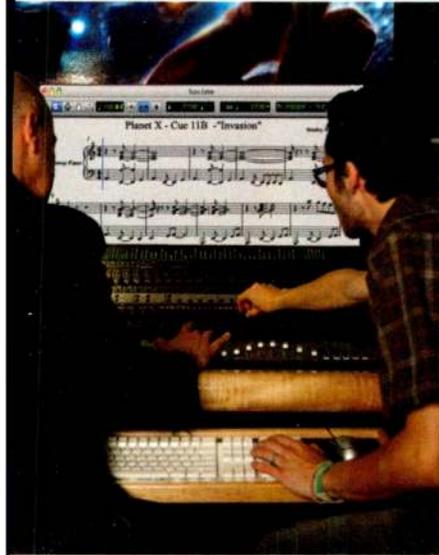
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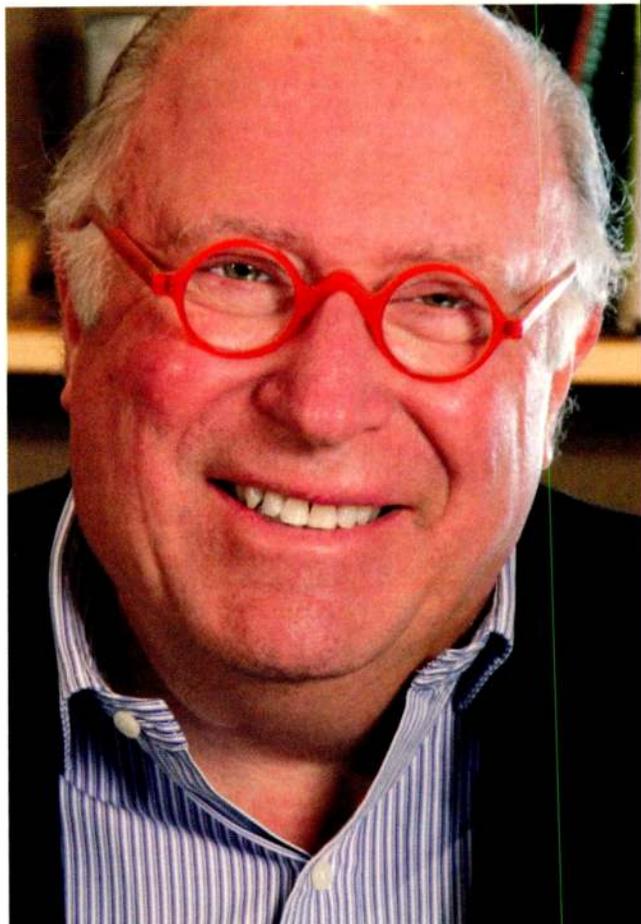
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# HOWARD SCHWARTZ

NEW YORK POST ICON MUSES ON AUDIO FOR THE 21ST CENTURY

By Tom Kenny



It's always a treat to check in with Howard Schwartz. He tells a good story, he lives a full life, and after 36 years in the highly competitive New York audio post world, he has a street-level perspective from his 19th-floor suite of studios that make up hsr ny (hsrny.com).

His story has been told many times—the prodigy bassoon player turned radio disc jockey turned rock 'n' roll engineer turned jingle mixer turned businessman—and you can find the details, and many of the stories, online at [mixonline.com](http://mixonline.com). What's most interesting to us this time around is how Schwartz has not only survived, but thrived over more than three-and-a-half decades. And how he's spotted

**The digital work is not going away; it's getting bigger. So we've embraced the "digital" word. We've just made a further push. Everybody needs to have a presence in all these digital playpens.**

trends, listened to his friends and colleagues, and adapted his studios to serve every change in the market, technological or cultural.

"In 36 years, I never discovered a music act or group," he says. "That was the impetus

for the studio when I started out: to discover music talent. But then it became a business, and I haven't looked back."

Today, that business includes audio editing and mixing, online/offline video, graphics, casting, remote ADR, bi-directional real-time remote mixing, video conferencing—you name it, hsr ny can provide it. And if it isn't the boss delivering personally, then it's likely still in the family. While Schwartz shows no signs of slowing down after 36 years as CEO, his twin daughters have taken on a much higher profile. Alexa Schwartz is now operations manager, and Zoe Schwartz is director of sales and marketing.

#### *So what's it like in New York today?*

New York is still very vital. After a couple of tough years, business is growing because New York is a good place to be. Just today it was announced that all the WPP Digital companies are going to be combined, and four or five of them are in New York. WPP owns Grey, Ogilvy & Mather, Y&R, United Network, J. Walter Thompson. Each has an offshoot, a digital company, meaning they work with advertising for new delivery platforms, and that's what is coming together. The digital work is not going away; it's getting bigger. So we've embraced the "digital" word. Now we have 10 "fully digital" studios, three "digital" online rooms, 13 "digital" offline. We've just made a further

push. Everybody needs to have presence in all these digital playpens.

***A decade ago, in an interview with Gary Eskow for Mix, you said that if you could invent anything, you would invent the last TV format ever because you have had to buy every one. Has that multiplied with the Internet?***

I said that? [Laughs] That's a good one. We always listen to our clients; you have to. A while back, we had a bunch of clients who threw video business at us so we took a look at that, and today we have every format you can have and we can do every deliverable you need. That's what it's called now, deliverables, not a layback. And every network has a different format of delivery. That includes hi-def. The only thing we don't have yet is 3-D, but nobody is going that way yet, and if they need to, we can certainly rent it to start.

But it's all about staying ahead of the game. You listen to clients, and then you have to read a lot and you have to listen, especially to current events. Egypt was the first Twitter revolution, and one of the key guys in Cairo who kept the Internet going was a Google employee, before he was arrested. Communication over the Web and cell phones, keeping people informed—you have to pay attention to that.

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World Radio History

Schwartz standing amidst the construction of Studio 13, hsr's first 5.1 and Dolby-certified studio, circa 1996



In this office right now, I'm sitting here with [daughters] Lexi and Zoe, and we have an old iPhone and a new iPhone, an old BlackBerry and a new BlackBerry. I think there's a Droid, and I'm sure there's an iPad somewhere around here. When I tell the story of my history here, over the last 36 years of being in business we opened up before cell phones, before computers. To stay in business, whether you're in New York or somewhere else, but especially in New York, you have to be there first, you have to read everything and spot a trend. You don't want to get in a position where you have to react.

*That seems to be one of your hallmarks, being able to switch on a dime.*

You have to. Just a couple of weeks ago, we took one of our audio studios and made it an online studio for two weeks because we got too much money to turn it down. We have a new videoconference room where clients come in to videoconference. We're on the 19th floor, and there's another one on the third floor. We took the room out of service for 10 days so we could use it for something else, and our clients thought it was a pain to go from the 20th floor down to the third floor! [Laughs] Hey, people are creatures of habit.

*We've almost made ourselves busier than we need to be.*

You would think that with all this extra stuff we could charge extra, but we're competing with the whole world, including somebody who is

**To stay in business, whether you're in New York or somewhere else, you have to be the first, you have to read everything and spot a trend. You don't want to get in a position where you have to react.**

mixing out of his house. They can set the price and the tone for that style of recording.

*But you've been offering services for decades that people just can't offer at home, at least not with the security demanded on big projects. You do a lot of voice recording for film, and you were something of a pioneer in long-*

*distance collaboration, going back to EdNet.*

Actually, before EdNet. We go back to the Landco days, Landco Labs with Bob Landers. We used satellite from public television. I remember one time over Thanksgiving we were recording Richard Crenna, who was shooting *Rambo 2*, I believe, and we had just gone into Beirut. Early 1980s. The government took the line and that was that. But anyway, we started out with satellite and ended up on ISDN.

*And today you're on Skype and everything else. Is this a good thing?*

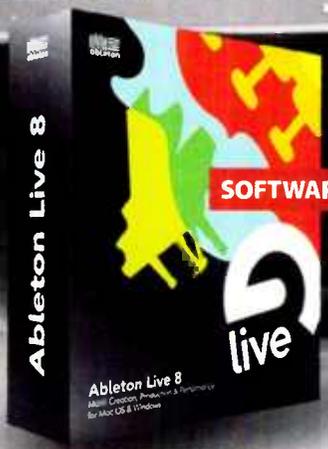
It's okay. We want people to know they can connect anywhere in the world and stay right at home in New York. And it's getting better all the time. Example: A client wanted to hire a mixer in California and build the project here. It was done entirely over the Internet and SourceConnect. They sent us QuickTimes, and we sunk them up. They wanted to iChat and Instant Message, but communication became the hard part—the mix was the easy part! So we finally ended up using cell phones. We're working on bringing in a new option that comes with bi-directional 780p picture. So, again, we're running into multiple formats, multiple deliverables. But it's exciting.



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At left, mid-1990s: Schwartz, president of SPARS, and the rest of the Board of Directors. Below, from left: Schwartz; his mentor, Hamilton Broscious; and Eddie Germano of Hit Factory in front of an audio booth at NAB, circa late '80s/early '90s.

*And the talent likes staying home, right? It ties into my theory that the more the Internet becomes truly global, the more it becomes truly local.*

It's like the six-block theory I talk about. We have a rental company that we use within six blocks, as opposed to somebody who is less expensive but across town. Same for restaurants. We use restaurants in a six-block radius of the studios. People are creatures of habit.

*You've added a lot of services, including graphics, video and agency-type stuff, as well as rooms over the years. Are you still booking time?*

We still have rate cards, but let's just say there are a lot of ways for people to book today. We don't know exactly what part of a project we're getting. If we are working on a motion picture or TV project, that's probably ADR, so it's usually an hourly price with a minimum booking. Talent comes in from a shoot and we record them just like the old days. A television commercial or radio commercial is usually a one-shot situation for the record and mix, so that's off of rate card. But all the other stuff, like 200 and some episodes of shows for cable TV, those are all project-based. We have to do 275 mixes and 275 deliverables. We do packages, so the first one is expensive and then you make your money by the fourth one. When we do graphics, it's a package situation on an hourly basis because some are more difficult than others. At that point, we are renting real estate behind a mixing console so we have to charge for it.

The good news is that, yes, we can take



care of everybody. The bad news is that some of the artistic vision that got us where we are isn't as much fun anymore because the mix isn't deemed as important as it used to be.

*Do you think we might get more attention on audio now that picture has fully gone hi-def?*

The recording and mix is always important, whether it's a TV or a radio spot or for the Web. Sometimes a session takes days and sometimes it takes 15 minutes, but it's always important. Audio will always get a lot of attention because without it, the message is missed.

The art of the studio business now is getting our clients in and making them all happy. Nobody asks us about our mixes any more or our

recording; it's all the other stuff. Studios today are graded by their customer service, by their location to the subway, by if you can have the car detailed while they're waiting. We still have a concierge to take care of everybody. When somebody books a session, we send them lots of cool things, recommendations around New York for hotels, restaurants, parking, whatever. We had to send someone to Staten Island the other day to get a special gluten-free cracker and they ate one chip! Make sure the silverware is on the tray when you plate the food. Our busiest time of day is 10 to 2 because they all want to come for lunch! [Laughs] But it's always been that way. We love the art, we love the services!



**For many years, Howard Schwartz wrote an annual piece for *Shoot* magazine on his Las Vegas recommendations for when NAB rolled into town. We asked him to revive it.**

After much investigation and cross-checking with all of my old notes, here is my random list of places you might want to try while attending NAB 2011.

If you are not from New York City and always wanted to see what all the commotion about Rao's is, you can satisfy your curiosity at Rao's in Caesar's Palace. In New York, people own tables there for a lifetime. It's a small place, and when you go you recognize everyone. You can make a reservation at the Las Vegas location and they take credit cards. Have the Lemon Chicken.

The Palm is also at Caesar's Palace. Go see if my picture is still on the wall.

Bartolotta at the Wynn: fresh seafood but it is expensive. Also at the Wynn is Alex. Most people are comp'd here. Stupid expensive, but one of the greatest meals you will ever have.

Bouchon at the Venetian—yum. Thomas Keller from The French Laundry in Napa [County, Calif] oversees this French bistro. Baked goods are outrageous. Typical bistro fare.

The "List" continues:

- Burger Bar, Mandalay Bay. Second-best burger in Vegas.

***What about quality in what you hear out there in the world today? Does it bother you that people might be listening to your voice work or commercial mixes on earbuds? From their phone?***

Well, I have an iPod touch and some Bose noise-cancellation headphones. I walk around and fly around with way too much stuff. It's a lot lighter than it used to be, though, because I used to walk around with a portable DAT player! And before that, cassettes. Anything is

- BLT at the Mirage
- Twist, Mandarin Oriental. Spare but a scene.
- Koi, Planet Hollywood. What you'd expect from a celeb-owned bar.
- Charlie Palmer at the Four Seasons. Yummy steaks.
- Delmonico's at the Venetian. Onions nine ways, a la Emeril Lagasse.
- Nobu at the Hard Rock. Heavy scene. Best sushi in town. There's also a great bar and pool in the Hard Rock to hang out at.
- Tao Asian Bistro in the Venetian. Same as in New York City.
- Sensi at the Bellagio.
- Okada at the Wynn. Expensive sushi, but fun.
- Knobhill Tavern at the MGM.
- Monta, 5030 Spring Mountain Rd. Small but elite sushi.

Travel advice: Bring a lot of \$5 bills. If you don't have a reservation and you want to get into a special place, use a \$20, or a \$50 depending on your budget. Don't be afraid, it works. Especially in Las Vegas.

better than a cassette was.

In the bigger picture, I think convenience and repeatability are very high on wish lists. I think accessibility is more important to the rest of the world than quality. That was kind of proven by LimeWire, where you're getting 75th generation off of somebody's computer in Africa. And you're willing to risk getting a virus! That's not going away. III

Tom Kenny is Mix's editorial director.

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# LECTROSONICS CELEBRATES 40 YEARS

## COMMITMENT TO USERS KEEPS WIRELESS MANUFACTURER CHURNING

By Tom Kenny

It's late morning in Rancho Rio, N.M., just outside of Albuquerque, and I'm walking across a parking lot between large industrial buildings with Karl Winkler, director of business development at Lectrosonics. We've done the office tour, the parts and testing, and assembly and Faraday cages, and now we're headed for the machine shop. A man in his mid-40s approaches us, twisting something tiny in his fingers. An engineer.

"Check it out, Karl," he says, reaching down to place the small black plastic clip against the side of a beltpack transmitter, fixing a wire into place. "I think this will work." Winkler plays with the unit for a second, then concurs, "Nice job!"

The engineer heads toward the offices to get sign-off, and Winkler and I proceed to the machine shop. "He just made that this morning," Winkler explains. "Designed the piece, created the mold, shot in the plastic. We had received a couple reports from customers that the antenna was hanging just a little loose and getting in the way. So that will be part of the product from now on and we'll update the units in the field. That's the advantage of being a company that has the engineer and the shop in one place. We can make a change in a day." We head toward the factory.

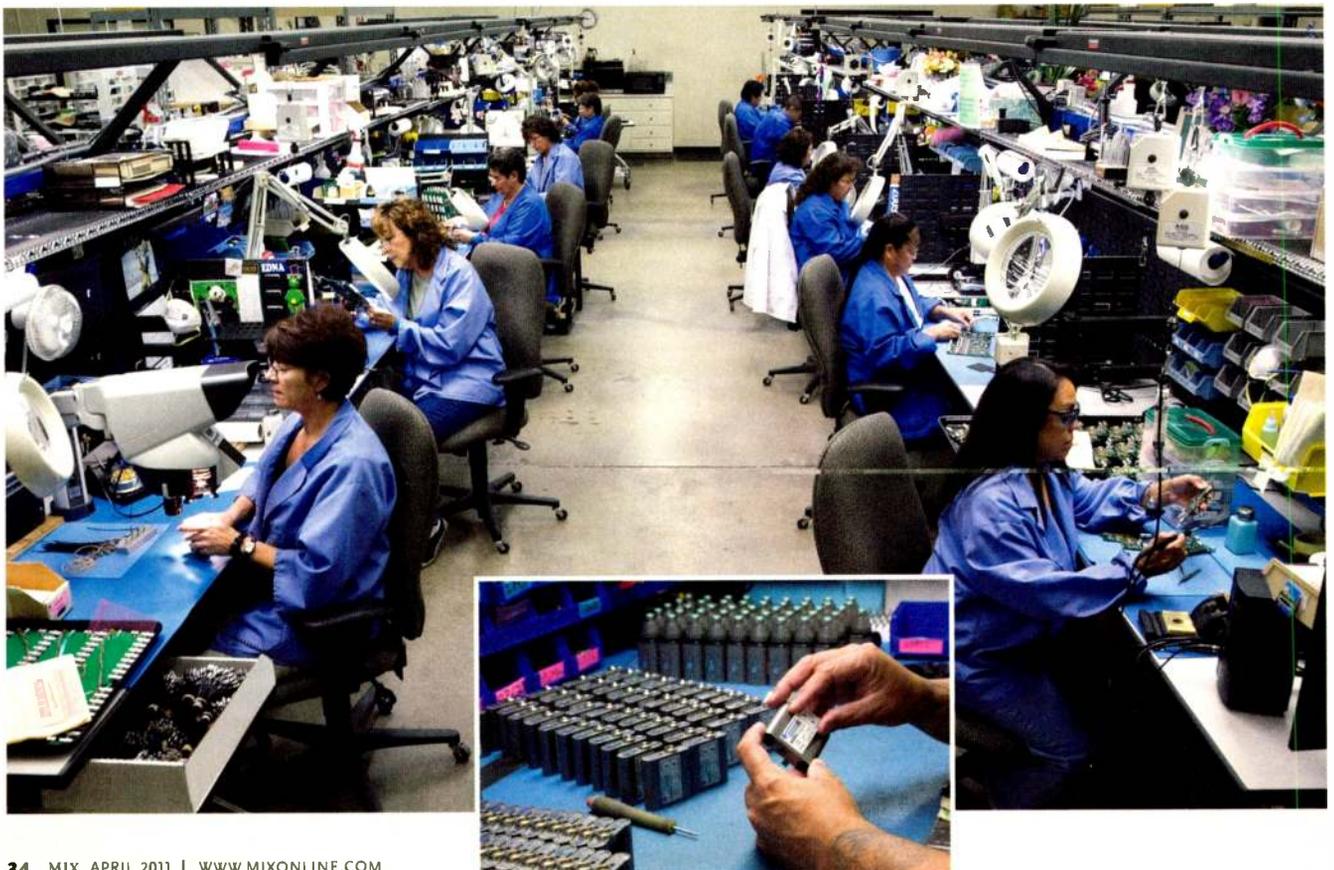
"Do you know what the definition of a machine shop is?" he asks as he opens a side door. "It's a shop that has machines that can make the machines. Think about that!" We step inside,

and it's immense and busy. Despite the hum and whirl of machinery from every corner of the 13,500 square feet, it's not that loud. We put on safety glasses and start at the raw aluminum and metal sheets, before moving on to the laser-cutting station.

\*\*\*\*\*

At the 2011 Winter NAMM show, Lectrosonics kicked off its 40th-anniversary celebration with the launch of Quadra, a digital wireless monitor system that puts four channels of 24-bit/48k under a musician's control. It was a hit with journalists, and when it ships late spring, the company will get a good idea of where it stands in an all-new

**Final assembly on the floor, by hand**



venture. It's a product that is on the periphery of the core business while opening up new markets.

Lectrosonics did the same with wireless in 1975, moving the company off the fixed-lectern Voice Projector and eventually finding a dominant spot in the TV and film production industry; Lectrosonics did it again with auto-mixers and the Modular Audio Processor in the early '90s, taking its DSP efforts and moving into the contracting market. And now, though the company has made inroads into live sound with transmitters and receivers, it is now headed to the stage with a quality product.

"During my final interview with the company, in 1988, I was told that there are three rules of business at Lectrosonics," recalls Gordon Moore, VP of sales. "The first is that we make the best product we know how to make, and we sell it at a price that allows us to profit as a company without borrowing. The second is that we don't do business with the government, namely Defense. And rule Number Three is that we have fun. I'll be honest, when I heard this, I thought, 'Yeah, right.' But after six weeks, the president popped his head in my office, and asked, 'Are you having fun?' And after 22 years of being here, I have to say, those are still my three guiding points."

The physical scope of Lectrosonics today, from the size of the shop and staff to the number of units shipped, is a far cry from the Albuquerque garage where it was founded in 1971 by Thomas Gilmer and Paul Auxter, both formerly with Singer-Friden. But the core business values have not changed. They are privately held and carry no debt. No acquisitions or mergers, though they have certainly been wooed. Steady profits, with some years better than others. Everything—and we mean everything—is made locally. There is an overwhelming commitment to employees and the community they live in. And there's a focus on quality and customer service that you rarely find today. It's the kind of company that politicians should be lining up in front of for photo ops, though the management team would likely balk. It's just not their style.

"When we talk about our company, we often talk in terms of money, business and customer relations," says president Larry Fisher. "But the truth is, it's just the right way to do it. The economics align with the way we like to do things around here. The people here have a lot of pride in the products they make, and the fact that it is also good business with customers is kind of the icing on the cake."

## Becoming Wireless

Fisher joined the company in 1972, a time when there were 17 employees and a single product: the

battery-powered Voice Projector. "I had a small sound company that carried Phase Linear, Crown, JBL, Altec Lansing...and we also made touring speakers for rock 'n' roll bands," he recalls. "Right about the time my partner left me high and dry and moved to California, I ran into the president of Lectrosonics. They needed hot glue for a Tolex covering machine—we put Tolex, which is really a book-binding glue, all over cabinets at the time. He came over to pick some up, we got to talking, and a week later he called and asked whether I would be willing to do some design work. I worked for a year as a consultant and then was hired as a designer full-time.

"At the time, the company made battery-

powered lectern and over-the-shoulder units," he continues. "They were good quality, but anybody could build those kinds of things in their basement. There was no high-tech to them. Now I didn't know a lot about electronics at the time. My background was in physics, but I learned electronics while here at the company—a soldering iron in one hand and an RCA transistor book in the other. Then about six months into the job, we hired another chap who was instrumental in designing the early wireless: Gail Graham. He was working with Ralph Belgique from Comtek, and Ralph actually designed the first low-band wireless we had, the M30 30-megacycle equipment. The problem was radiating enough power at 30

The advertisement features a central image of Deadmau5, a blue mouse-like character with yellow eyes, wearing a red t-shirt and holding a keyboard. He is positioned in a dark room filled with audio equipment, including a rack of gear and a large speaker. The Prism Sound logo is visible in the upper right corner of the image. Below the image, there is a quote from Deadmau5: "Best A/D - D/A conversion I've had yet... (and fewest compatibility problems) ; ) props to Prism for their gnarly product". The main headline reads "Deadmau5's logical choice of interface". Below this, the Orpheus Professional FireWire audio interface is shown, a silver rack-mountable unit with various ports and a volume knob. To the right of the interface, there is a block of text describing the product's features and performance. At the bottom of the advertisement, there are logos for various certifications and contact information.

Prism Sound

"Best A/D - D/A conversion I've had yet... (and fewest compatibility problems) ; ) props to Prism for their gnarly product" *Deadmau5*

## Deadmau5's logical choice of interface

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# L.A. Grapevine

by Bud Scoppa

**F**or years, as I made the daily commute from Studio City to Hollywood through the Cahuenga Pass, I drove past the iconic mid-century building that housed Hanna-Barbera Studios. But *The Flintstones* and *Jetsons* are long gone; in their place are the engineers of Universal Mastering Studios West, one of three mastering studios in the States owned and operated by the Universal Music Group; the others are in Santa Monica and Manhattan.

UMSW took over the premises following construction of a seven-room state-of-the-art facility inside what was formerly a warehouse space. The turnkey project was designed and overseen by Hanson Hsu's Delta H Design Inc., employing the firm's trademarked ZR (which stands for zero reflection) Acoustics®, a sophisticated technology that eliminates the need for trapezoidal architecture while using everyday materials. Indeed, each of the seven spaces—two mastering rooms and five production rooms—is strictly rectangular, and four of the production rooms are no bigger than the walk-in closet of a Beverly Hills debutante.

The facility was installed within the existing building in a "dough-

rooms for production, mid-sized rooms for editing and some mastering and larger rooms with mixing and mastering capabilities—all being of the same acoustic signature and design—was the key for making that decision," West explains.

"I didn't believe it till I heard it," says quality-control specialist Charles Cosin, who works in P4, one of the compact production rooms. At Hsu's suggestion, I've brought three CDs from my current listening stack, and Cosin gives me his chair for a quick playback session. I start with "Come Together" from the remastered *Abbey Road*, then "1901" from Phoenix's *Wolfgang Amadeus Phoenix* and finally "Dear God" from Monsters of Folk's self-titled debut. None of them has ever sounded clearer, fuller or more enveloping to my ears. I turned to Hsu, and asked, "Can you do my family room?"

"Look at this playback system—it's simple and clean," Hsu says. "A Hafler amp, Dynaudio BM 15s with passive crossover and stock cables. And you're hearing it the short way in a rectangular room. You can clearly pick up minute details in the content, like being able to hear the difference between 96k/24-bit files and 44.1k/16-bit files."

We head next door to P3, the bigger production room, where senior engineer/R&D specialist Ed Abbott does his thing. When I play the same three tracks through monitors Abbott designed for Dynaudio, the sound becomes downright 3-D.

Hsu takes me to the conference room, where I sign a non-disclosure agreement and he unrolls the ZR Acoustics blueprints for the job, making me privy to his secret recipe, which I am not at liberty to disclose; otherwise, he'll have to kill me. All I can say is it's insanely clever and so simple in principle. Smart guy, that Hanson Hsu.

"Every time we do a new generation of ZR, it improves exponentially," Hsu points out. "And we're always discovering new things. For example, Pete Doell discovered while changing speaker cables that you get clear stereo imaging standing *behind* the speakers. I *think* I know why that happens, but I'm still working out the science on it."

On Friday, Abbott and the UMG engineers will bring their ears to B, where they'll demo a pair of Lipinski Sound L-707s matched with dual subwoofers, which Abbott believes will be the optimum monitor configuration for the room. At the moment, there's an Audire Otez amp driving a variety of demo speakers, such as Dynaudio C3s and BM 15s, B&W 808s and the currently hooked-up Tannoy 215s.

"The room is big enough that I doubt one sub will cut it," Abbott says of the need for two subwoofers. "Besides, the ZR math was worked out for stereo speakers, so trying to position one sub would be an exercise in compromise I'm not sure we'd be able to solve satisfactorily—although it might be worth the price of admission to watch Hanson melt down trying to figure it out."

Abbott goes back to work in P3 and Hsu heads off to a meeting with studio manager Nick Dofflemyer, leaving me in B for some solo playtime. I slip in *Abbey Road*, crank up the volume and blast the second half through the Tannoys. Wow. If they go with the Lipinskis, I'll be glad to take the Tannoys off their hands and put them in my ZR Acoustics family room. Hey, I can dream, can't I? ■■■

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



PHOTO: ISABELLE HUI

From left, in Universal Mastering West, Mastering B, are quality-control specialist Charles Cosin, UMG senior VP of Studio and Vault Operations Paul West and studio designer/acoustician Hanson Hsu

nut hole" arrangement, with hallways separating and surrounding the exterior of the newly built structure from the interior walls of the surrounding building. It looks conventional, but it sounds incredible, even though the rooms have yet to be totally tweaked out in terms of gear and placement. You don't have to take my word for it—just ask the guys who work in these rooms.

"I love the way the room sounds; it's totally transparent," says senior mastering engineer Erick Labsen, taking a quick break from a session in Mastering B. "The room is very revealing; I'm really happy with the way things sound in here, and then, when I take them out and listen to them on other systems, they sound great, as well. When Hanson showed me how it works, I thought, 'Why hasn't anyone thought of this before?' He's come up with something that's groundbreaking in room design. From a physics and math point of view, I think it's absolutely brilliant."

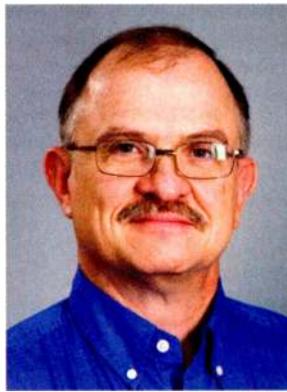
"When Hanson showed us how ZR works, our jaws dropped," says senior mastering/mixing engineer Pete Doell. "It really sounds like such an obvious thing in a way. But on another level, it's like from Mars. You can stand in the corner and the bass doesn't build up, and you can hear everything coming out of both speakers. It's a good thing not only for the mastering engineer, but for the client."

According to UMG's senior VP of Studio & Vault Operations, Paul West, Hsu's nontraditional proposal was attractive because it met the studio's "eclectic" needs. "The idea of building small

because the wavelengths are incredibly long and you can't get an antenna that long. The effective range was about 50 feet. After about a year or so of selling the product, Gail and I redesigned what we called unichannel construction, which used crystal filters in the IF stage. The crystal filters were very narrow, and they brought the bandwidth of the receiver down very, very narrow. The 30 megacycles sat smack-dab in the middle of what we called the business band at the time, where there are about four or five frequencies set apart for low-power devices. By restricting the receiver to pick up only those narrow, low-power channels, we sidestepped a lot of interference. That made the units quite a bit better."

Those early efforts were attached to the portable P.A., and the head of sales proved to be something of a wireless evangelist. But at the time, the company was exploring other avenues, including ill-fated efforts at a talking blackboard and a venture into guitar pickups that led to some serious financial hardship. The investors recruited a new president, John Arasim, who immediately refocused the company on wireless development and pulled Fisher and Graham out of management and made them lead designers.

They designed the next generation of wireless and released the CR185 and M185, miniature systems that operated in the VHF band at 180 cycles. Vega was the company's chief competitor at the time, and while Fisher acknowledges that the Vegas might have sounded a tad better, the Lectro-



Gordon Moore, VP of sales, still has fun at work.

sonics units proved more reliable and interference-free because the crystal filters in the high band brought a narrower focus, and the emerging market in broadcast appreciated the XLR out.

Broadcast stations (and later film production companies) became Lectrosonics' largest market and remain so today. The 185 became the 195, which gave way to the frequency-agile 200 Series and culminated in Digital Hybrid Wireless in 2002, eliminating the compandor from the audio electronics. In a sense, the company grew hand in hand with the emerging wireless industry.

"In the beginning, the late '80s and early '90s, my primary job was to get customers past the notion that wireless was a dirty word," Moore says. "First we had to show sound mixers that wireless was reliable, then we had to show them that it could sound good. We came out with dual-band companding in 1993, and that was better, but the Holy Grail was getting rid of the compandor altogether, which we did with Digital Hybrid about 10 years later. We learned more from our customers than you can imagine. The end-users really drive this company. Those film guys are real golden ears, and they cannot have down time during production."

While all this development was going on in the late 1980s, an engineer named Mike Sims knocked on the door looking for an audio job. After a lunch with Arasim and Fisher, he was hired, even though there was no job available. He became sort of a one-man band and developed the company's entry into audio processing, starting with the MAP system in 1990. That became the AM Series, then the DM Series, and later, with the real push into DSP, the ASPEN Series of processors and automated mixers. It was also Lectrosonics' entry into the systems contracting market. Today, you will find these Lectro products in courtrooms, boardrooms, schools, entertainment centers and convention halls around the world.



Director of business development Karl Winkler

### Onward and Upward

When Lectrosonics developed its first wireless product in 1975, there was no real indication that it would prove the cornerstone of the company decades later. At the time, there were only three or four real players; today, there are more than 50 manufacturers, many of them with much deeper pockets, creating all kinds of systems for every kind of market. Still, Lectrosonics does very well, and much of that stems from its core commitment to treating employees and customers with great respect. Everything Lectrosonics makes is backward-compatible, which in this world of constant upgrades is greatly appreciated by the user base. And the fact that the company is a completely self-contained manufacturer means it can respond to customers immediately.

"A lot of people talk about service, but I think we put more emphasis on it than just about any place I've ever seen," Fisher says. "It starts at the front desk, where we have someone who picks up the phone. People call in and are surprised that they are not immediately directed to voicemail. People can call in and talk to the engineer; a lot of companies don't let engineers talk to customers, but we make it a point that users can talk to the designer of the product if it goes that far and can't be handled at the service desk. We've been that way from Day One. The other thing we have that I think is pretty unique is a very technical sales crew here. These salesman have been with us 10, 20 and 25 years. We have very little turnover in the company, and our salesmen have the answers to most customer questions."

"It's at the heart of our philosophy: Anybody who buys our product is buying into the company," adds Moore. "We are adamant about taking care of customers long after the warranty is over. And that attitude is across the board, from management on down to the assembly line. It's not at all unusual here to see an officer of the company pick up a broom. There is still a 'get your hands dirty' attitude if it's good for the company."

\*\*\*\*\*

Back in the machine shop, the floor is busy. Laser cutters, laser etchers, drill presses and milling machines. Rock-tumblers and plastic-injection molding all humming simultaneously. In another area, the Surface Mount Technology room is

putting out circuit boards. It really is your high school shop class on steroids, and the energy is palpable. Every single product that comes off the line is hand-tested. Every function is turned on and walk-tested. Every transmitter and receiver is even run through a Faraday cage.

"Lectrosonics is a very, very vertical company," Fisher concludes. "We start out with chunks of metal and we end up with a finished product. We build everything here. That means if a customer calls in with a problem, we can determine if it is a design

error on our part and correct it immediately. If we need to change a setting on a mill, we do it immediately. We have no compunction about

scrapping product that isn't designed properly. We've had a philosophy from the beginning that if it's our fault, we take care of it and we'll extend your warranty. We admit our mistakes because it's a lot better fixing it now than a year from now. A failure out in the field costs us much more money than what any one part is worth. Fortunately, we have not been burned very often and not in a long time." III



Lectrosonics president Larry Fisher (left) and production sound mixer Douglas Tourtelot on the set of *Breaking Bad*.

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PHOTO: DAVID JORDAN WILLIAMS/WILLIAMS STUDIO



Robbie Robertson took time out of his film-sound work to complete *How to Become Clairvoyant*.

# Robbie Robertson Returns

By Blair Jackson

SOLID ALBUM FEATURES CLAPTON, MORELLO, REZNOR

Robbie Robertson doesn't put out albums very often, so when he does it's news. The one-time leader of The Band has spent much of his time in the past two decades working in various capacities in film music, often as a soundtrack supervisor. So the arrival of *How to Become Clairvoyant*, his strongest set since *Storyville* (1991), is cause for rejoicing.

After a pair of fine albums in the '90s that explored and celebrated Rob-

ertson's part-Native American heritage, he is back with a straightforward, mainstream rock effort that still feels intimate and autobiographical. There's a song that addresses his departure from The Band ("This is Where I Get Off"), another about the excesses of the rock 'n' roll lifestyle ("He Don't Live Here No More") and one that's a bittersweet look at the idealism of the '60s ("When the Night Was Young"). But in true Robertson fashion, nothing is spelled out too

blatantly, and there's an air of mystery that courses through the album.

Eric Clapton, a friend of Robertson's since his Band days, is all over the album, playing electric or acoustic guitar (or both) on seven of the 12 tracks (two of which he co-wrote), harmonizing on a couple and singing co-lead on one. Other visitors include Steve Winwood, who plays organ on a few songs, Rage Against the Machine guitarist Tom Morello and steel-guitar wizard

Robert Randolph. Oscar-winning Trent Reznor (for his co-scoring *The Social Network*) contributed ominous sonic textures to the instrumental "Madame X." The main backing band is outstanding, too: bassist Pino Palladino, drummer Ian Thomas and keyboardist Marius de Vries. De Vries co-produced the album with Robertson (as he did on the 1998 *Contact From the Underworld of Redboy*) and was involved throughout the two-year process of putting the record together.

Robertson and Clapton had talked about doing a record together for years, and even before the main sessions for this album they had got-

ten together a few times in Robertson's studio at The Village in L.A. to lay down some ideas. "Most of the time it was just him and me with two guitars," Robertson says, "or sometimes I would play keyboard, and sometimes I would just program a tempo that we were playing to so we would have something to lock in with."

"Some of the initial recordings with Eric are 15 or 20 years old," says de Vries, a British musician, producer, programmer and mixer whose career includes work with the likes of Madonna, Bjork, PJ Harvey, Rufus Wainwright and U2. "Then they got back together

again two-and-a-half years ago; at that point, they decided there was a critical mass of useful stuff they'd done together, and though he wasn't quite sure how it was going to get developed, he thought there was a record that would be drawn out of it one way or the other, and he asked me if I'd like to come along and help coordinate and produce. I said yes, of course, and the next thing I knew we were at Olympic Studios in London for a month tracking. I've worked at Olympic an awful lot through the years, but more importantly, that's sort of Eric's studio of choice in London—or was; sadly, it's no longer with us." (It closed January 30, 2009.)

Before the basic tracking sessions at Olympic—which were engineered by Alan Douglas and featured Robertson, Clapton, Palladino, Thomas and de Vries—there were a few weeks of long-distance preproduction and arrangement work between Robertson at The Village and de Vries in his former recording space inside The Strongroom (London). By the time Robertson arrived in London, de Vries says, "I'd done some preparatory programming, but very little. We started more or less from scratch [at Olympic], and with musicians of the caliber we had, it was really all about providing a comfortable environment for them to experiment with and then ekeing performances out of them. I had my musical director hat on for that, and worked with Ian and Pino to figure out the grooves for the rhythm section."

Robertson says of de Vries, "I think he's a great comrade in arms in the studio, and he makes it so I can throw out all kinds of surreal ideas and he helps me reel them in. Also, he's a real musician, so if there are things you need, he can accommodate that. Or he can help me translate to other musicians what I'm talking about or describe chord changes. He also has a very strong cinematic connection. He worked for [director] Baz Luhrman for years and has done a lot of film stuff, so I can talk in abstract terms to him about sounds and atmosphere and he understands what I'm talking about."

Clapton did some of his vocals during these initial 2008 sessions, but completed them at The Strongroom in December 2009. There were also a couple of tunes that were started in London but developed more fully and finalized later in L.A. But we're getting ahead of ourselves. As Robertson explains, his other professional life suddenly intruded: "After I recorded all the tracks in London and I was still there, Martin Scorsese called me about *Shutter Island*. Now, usually on his movies he's so good in the music area that he comes in with

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some ideas on things. On this one, he was at a bit of a loss on which direction to go musically. I read the script while I was in London, and after thinking about how unique the script was, my suggestion was that we use all music of modern classical composers. He was like, 'Uh, that's kind of interesting. Can you show me what you mean?' So when I got back from London, I put together some pieces of music of different modern classical composers I thought might connect with this material. At this point, I'd seen no film on this; all I'd done was read the script. And he said, 'I think we're on the right track here; I think it's going to be a good idea.' Then he started laying some of these things into the film just as an experiment, and then he told me, 'No, no, this is really good.'

"I know something about modern classical music, but I'm by no means an expert in this area, so I had to just bury myself in this stuff for weeks, and I went through thousands of things, and it was a fascinating experience and very informative and a complete departure from what I was doing in working on this record."

After Robertson's lengthy detour to creepy *Shutter Island*, he and de Vries picked up work on *Clairvoyant* in L.A., dividing their time between Robertson's room at The Village and another private studio in the hills nei-

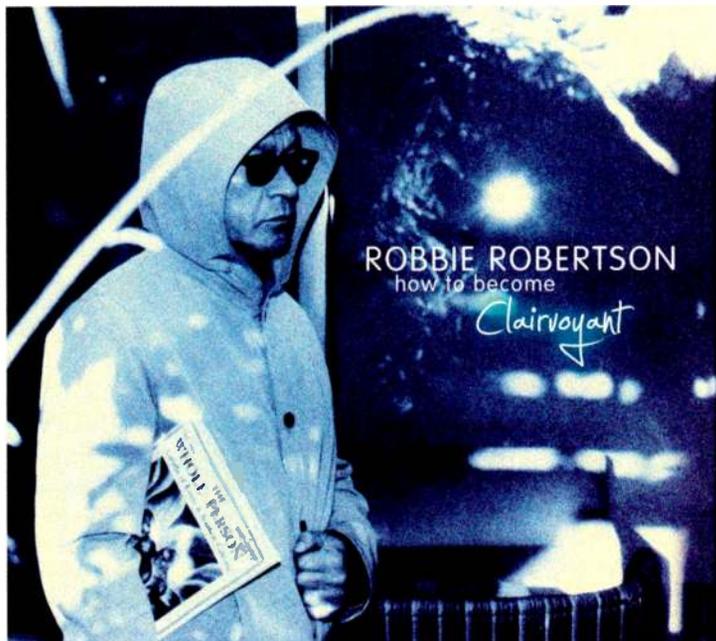
ther cares to identify. Patrick McDoughal was the primary engineer on those sessions. "Usually when you make a record, you go in there and you bang your head against the wall until you're done and then it is what it is," Robertson says. "This time, I had the luxury of doing something else in the middle, coming back to it, and saying, 'Ahhh, okay. I know what I want to do to finish these songs.' I had clear direction."

In L.A., Robertson laid down his lead vocals and he and de Vries supervised the layering of the beautiful backing parts (by half-a-dozen male and female singers) that appear on most songs. There were also a number of new instrumental overdubs. It was there, too, that de Vries really went into sound-design mode, working on various atmospheric touches—in Logic and using assorted plug-ins—most of them wonderfully subtle.

Along the way, de Vries and Robertson

were doing their own rough mixes in the box, and the duo continued to be very involved once they turned the project over to super-mixer Tony Maserati. "I don't send mixes away and hope for the best," Robertson says. "Marius and I were there with Tony and we were going through it together. I was telling him how these songs worked, and he was extraordinary at figuring out how to get into the vibe of each song and taking that ride. He came up with good ideas, and at the same time didn't impose anything. He's just got good ears and good taste."

Adds de Vries, "Robbie and I felt our mixes were a pretty accurate starting point for how we wanted it to sound. I think we felt, wheth-



er we could describe it or not, we had the sonic aesthetic of the record nailed by the time we went to him. At the same time, we didn't want to tie his hands: 'Tony, you must do what you feel needs to be done, but at the same time...we like the way it sounds!' [Laughs] Which is a little unfair, I guess. But he still did a lot to make the record sound the way it does. I think we all learned a lot from the process, and it was hugely enjoyable and inspirational."

Far from being a slick, shiny showcase for a mixer's outboard gear fantasies, *How to Become Clairvoyant* mostly has a spare, tight, in-your-face sound—the essence of tasteful restraint. Yet close examination reveals quite a bit going on beneath the surface. And there is also a pair of tracks with a notably different aesthetic. The lovely ballad "She's Not Mine," in particular, sounds almost like it could have appeared on Robertson's brilliant, ambience-drenched epon-

ymous first solo album, which was produced by Daniel Lanois. It turns out that song was completely transformed after it had already been mixed once by Maserati.

"With that song," de Vries notes, "when we got right to the end of mixing it, we felt there was something a little bit plain about it, as if it hadn't really found itself. We were almost considering leaving it off the sequence. But we liked it a lot, so I just tore it to pieces. I took the stems of Tony's mix away and stripped it back to just a loop of the drums and a very, very edited version of the bass line. I tried to radically simplify it—really, taking a lot of the musician-ship out of it. I wanted to see what was there

when it was stripped back to almost nothing. I was messing around with some reverbs and delays, and in a way I wanted it to be a sister piece to 'Madame X,' which was a magnificent soundscape. I thought maybe it needs to live within a sound, so I took some of the guitars and keyboards that were on there and set them into various reverbs and delays—I'd just gotten the Universal Audio Echoplex EP-34 and I created a lot of infinite loops using that and the Logic reverb, and then doing some radical editing, even to those reverb returns. I ended up with this cloud of noise that seemed sympathetic to the song, and just Robbie's

voice, and the drumbeat within that took on a whole new atmosphere. Then I figured I can't chop up Ian's drums and leave it like that—we felt we needed to have it *played*, so we got Jim Keltner, who was at The Village, to be on it. So we ripped it to pieces and put it back together again in a completely different way and brought it back to Tony—he was very surprised when he heard it—and he mixed it again."

It's an album filled with neat little touches, from swampy, Pop Staples–like electric guitar tones to ringing classical guitar lines, keyboard drones and the evocative, cinematic instrumental "Tango for Django." Robertson says that it was one of his favorite recording experiences, and de Vries echoes that sentiment: "I hope people will hear the amount of passion and love that was put into it. It was great to be on this journey with Robbie and feel like we've done something really special." ■

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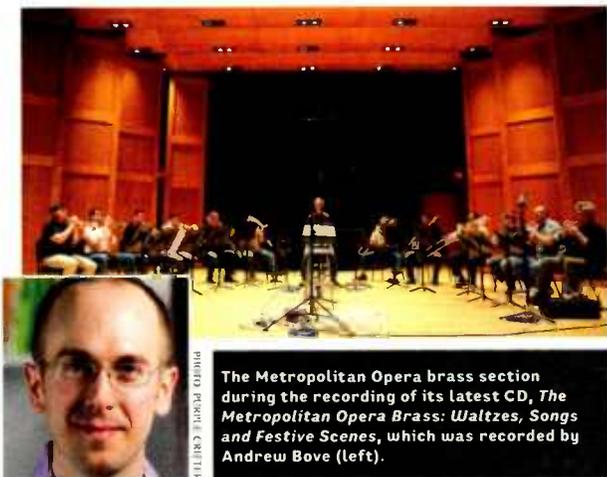
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## The Poison Tree Records to Analog for New Album

## Brass From the Met

Andrew Bove—owner of Bove Audio (boveaudio.com)—recently captured the performances of the Metropolitan Opera brass section for its latest CD, *The Metropolitan Opera Brass: Waltzes, Songs and Festive Scenes*. During the three-day recording session at Gene & Shelley Enlow Recital Hall at Kean University (Union, N.J.), Bove used a Sound Devices 788T, employing all eight inputs. Two were devoted to the main stereo pair to capture the overall sound of the group. Another two were dedicated as spot mics for the French horn section. The remaining four handled spot mics on varied instruments.



The Metropolitan Opera brass section during the recording of its latest CD, *The Metropolitan Opera Brass: Waltzes, Songs and Festive Scenes*, which was recorded by Andrew Bove (left).

"Before the 788T, we would use a computer workstation for recording, but it wasn't always reliable," says Bove. "Recording budgets are small these days, and when you're on a tight budget and don't have infinite time in a concert hall, quick setup time is essential. Using the 788T instead of a computer workstation reduces the amount of devices that need to be connected, which saves time, reduces the amount of equipment transported and increases reliability."

Bove's setup included several external preamps and A/D converters, as well as a variety of micro-

phones, including a pair of Schoeps CMC 6 MK2s through Forsell Technologies SMP-2 preamps and Lavry Engineering LavryBlue A/D converters. Another pair of the same preamps and A/D conversion was used with the AEA R84 ribbon microphones dedicated to the French horn section. Schoeps CMC 6 MK21s and CMC 4 MK 41s and Sennheiser MKH 8040s were used as additional spot mics.

Bove handled editing, mixing and mastering of the high-resolution, 8-channel WAV files for this project, relying on a Magix Sequoia DAW. Additional production was provided by David Krauss and Javier Gándara.

—Sarah Benzuly



Steve Salett tracking for the new album

Steve Salett recently finished up his band the Poison Tree's self-titled debut (out on embarqueh) at his Saltlands Studio (Brooklyn). Some tracking was done at Sear Sound (N.Y.), but once Salett's studio had installed its tape machine, the band and Salett headed back home. There, they tracked to tape, an aesthetic choice Salett points out. "I love the sound, but also, and maybe more importantly, tape changes the process and mindset of the musicians," he says. "We tracked most of the record with the entire band and kept the original vocal takes. When using tape, there was never a feeling that we could or would go back and fix things later."

Salett drew from the local community of musicians who frequent his Saltmines rehearsal space, including Thomas Bartlett (Wurlitzer, piano, organ), vocalist Dawn Landes, bassist Jeff Hill, drummer Konrad Meissner and trumpeter C.J. Camereri. Gary Mauer of Hem co-produced the album with Salett, who wrote and sang all the songs and plays guitar. The band played together as an ensemble with the exception of the songs "My Only Friend" and "Never Know Me," which were done "chasing either Josh Kaufman or Thomas Bartlett around with a Fred Cameron tube-modified 87."

The album was mixed on a Neotek Elite, occasionally using the Neve 542 for inserts sent to a Studer A80RC half-inch. "I think that trying to get the best performance is essential in the recording process, and this band that I recorded with are all really excellent musicians," Salett says of the final product. "Nothing can substitute for great musicians listening and playing together. I think we were lucky enough to capture some of that."

## Studio Profile

### Personal Space Gets High-End Touch

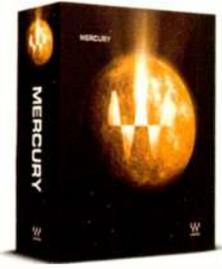
by Sarah Benzuly



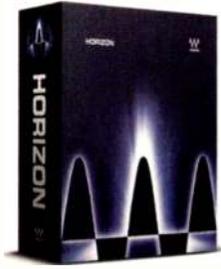
Constructing a personal studio is always a meticulous process as the space is normally built within an existing home. Such was the case when the owners of Roma & Romma Records label contracted Walters-Storyk Design Group in Buenos Aires to build out their high-end space as an annex to their family home. "Our clients wanted the freedom to play and record any time of the day or night, without disturbing their family," explains WSDG-LA partner Sergio Molho, who worked with studio principal Nicholas Romero. "They

retained us for the design-through-construction and complete turnkey systems integration of a professional studio with acoustically perfect live and control rooms."

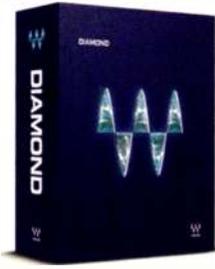
Roma and Romma Records features an Avid D-Command|24 console; a Pro Tools HD system; ADAM S5VA monitors; such outboard gear as API 212, Avalon VT737, Millennia Media HV3D, Neve 1073, Empirical Labs Distressor and Manley VoxBox; and Hearback & Sennheiser HD-25 monitoring.



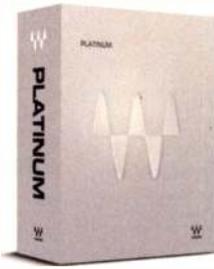
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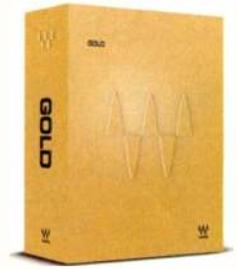
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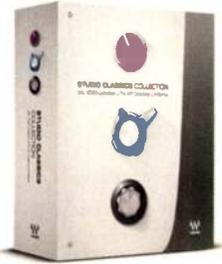
Diamond



Platinum

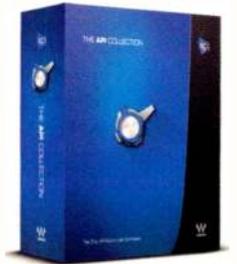


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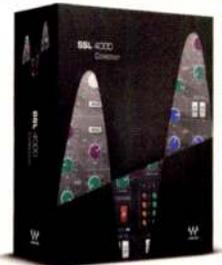


Studio Classics Collection

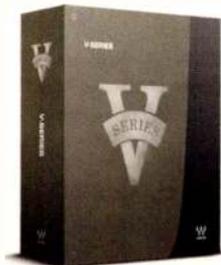
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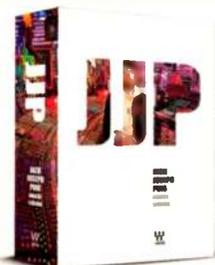
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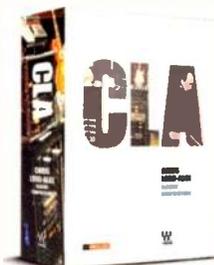
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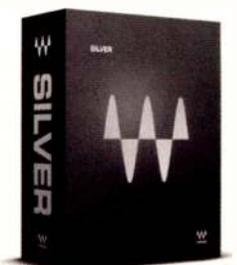
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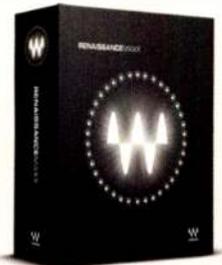
JJP Analog Legends



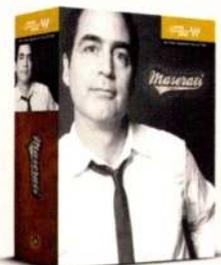
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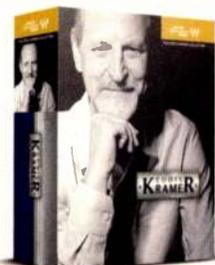
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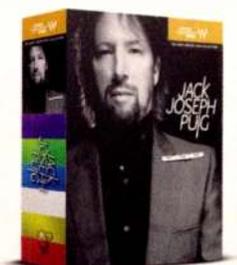
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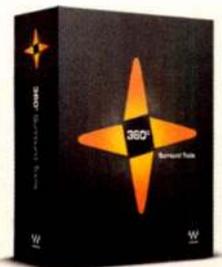
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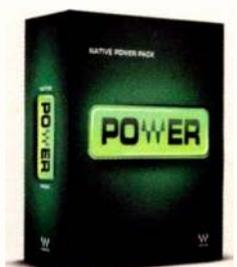
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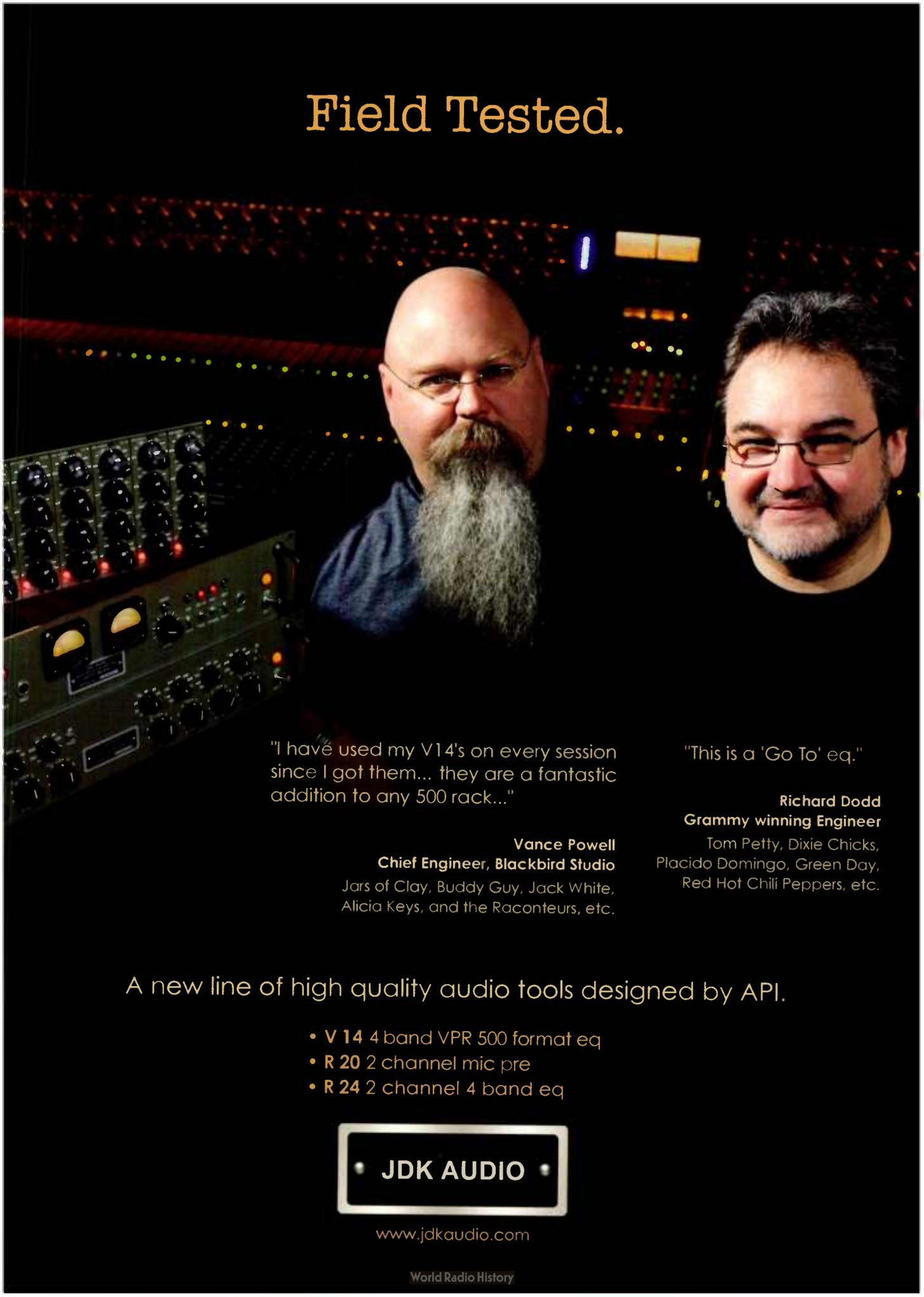
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# CLASSIC TRACKS



## Bonnie Raitt

### "THING CALLED LOVE"

By Blair Jackson

When I call engineer extraordinaire Ed Cherney about the recording of Bonnie Raitt's commercial breakthrough, "Thing Called Love," the first thing he says is, "Isn't that a little recent for a 'Classic Track'?" "Dude," I said, "it was recorded 22 years ago!" He got a laugh out of that; it does seem like it was just yesterday in some ways. But it was cut in 1989 and was a keystone of her album *Nick of Time*, which won a Grammy for Album of the Year in 1990 and sold more than 6 million copies in the U.S. alone.

Raitt's success was a long time coming. The daughter of Broadway singer John Raitt, Bonnie Raitt started playing guitar at an early age, but didn't turn serious about music until she was living in Cambridge, Mass., and going to Radcliffe College (Harvard's all-girl "sister" school) in the late '60s. It was in Boston that she met and befriended Dick Waterman, who had been deeply involved in the early '60s Cam-

bridge folk scene and "blues revival," putting on shows by recently rediscovered bluesmen like Bukka White and Mississippi John Hurt, personally "finding" the long-retired Delta singer Son House (in Rochester, N.Y., of all places) and later starting a booking agency that handled those three and such greats as Skip James, Lightnin' Hopkins and Big Boy Crudup. Raitt immersed herself in the blues, learning what she could from these living legends, and soon was opening for them on occasion. With a powerful voice that could be gritty one second, delicate the next, and serious guitar chops (especially on slide), the beautiful redhead was a striking and different artist, interpreting traditional blues and folk in her own way.

She dropped out of college to devote herself to music full-time, and by 1970 had been signed by Warner Bros. Records. Her self-titled debut came out in 1971 and was a critical suc-

cess, if not a commercial triumph. It, and her next album, *Give It Up*, established a formula of sorts, offering a mixture of blues by the likes of Robert Johnson, Fred McDowell and Sippie Wallace; tunes by up-and-coming songwriters such as Jackson Browne, Chris Smither and Eric Kaz; and a sprinkling of a couple of her own compositions in the mix. Later albums championed writers like John Prine ("Angel From Montgomery" was an FM favorite), J.D. Souther, Karla Bonoff and many others, and

I'd been a big fan of [Raitt's] for a long time. So I lobbied everyone I knew that knew Bonnie and pleaded with them to tell her that I was the perfect guy for her.

—Ed Cherney

she earned a reputation as a truly dynamic and personable live performer, as well. From her earliest days, she was politically active, giving her time and energy to many causes. Her first minor hit was a bluesy reading of Del Shannon's "Runaway" in 1977 (on *Sweet Forgiveness*), but she was unable to follow it up to Warner's satisfaction, and in late 1983, Warner Bros. abruptly dropped her (along with several other "prestige" acts), even though she had recently completed an album at tremendous expense.

Raitt says this was a particularly low time for her and that both her health and personal life were in bad shape, but during the next couple of years, she managed to pull everything together, and she continued to tour successfully and play a number of major benefits. Raitt signed with Capitol Records in late 1988 and was soon in Ocean Way (L.A.) Studio 2 working with producer Don Was and engineer Cherney on *Nick of Time*. She had met Was—who was leader of the quirky but cool band Was (Not Was), and branched into production with albums by Carly Simon and The B-52s—when he produced a version of Raitt singing "Baby Mine" from the film *Dumbo* for the hip 1988 album of Disney film song remakes called *Stay Awake*. *Nick of Time* marked the first time Cherney worked with either of them, and it proved to be a turning point in his career.

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Cherney had cut his teeth as an assistant engineer for Quincy Jones and Bruce Swedien (among others), but by the early '80s was mostly recording and mixing jingles, which he says gave him invaluable experience working fast and in different music styles. He landed a Delco car-battery spot featuring music by Ry Cooder, which led to recording and mixing Cooder's entire *Get Rhythm* album. Cherney followed that with a disc for Cooder's buddy David Lindley, the superb Linda Ronstadt-produced *Very Greasy*. "I knew that Bonnie was going to be doing a record," Cherney recalls. "I'd been a big fan of hers for a long time, and at that point, having done Cooder and Lindley, I was really into slide guitar and also listening to a lot of blues. So I lobbied everyone I knew that knew Bonnie and pleaded with them to tell her that I was the perfect guy for her." Evidently, Cherney's plot was successful because he soon got a call from Was and, after a lunch with him and Raitt, landed the gig. "We laughed the whole meeting and I just fell in love with both of them," Cherney says.

This month's "Classic Track," "Thing Called Love," was written by John Hiatt and originally appeared on one of his most popular albums, the 1987 *Bring the Family* (which featured Cooder on guitar). Joining Raitt at Ocean Way for her version of

the driving rocker was her regular touring band at the time: bassist Hutch Hutchinson, drummer Ricky Fataar and guitarist/harmony singer Johnny Lee Schell (augmented by Tony Brauna-gel on percussion). The *Nick of Time* album in general is more stripped down and economical than some of Raitt's previous efforts, which frequently featured dozens of different players and singers, and "Thing Called Love" really feels like a small band just playing—which is what it is, Cherney says.

"It was live in the studio," he says. "As I listen now, I remember we overdubbed Tony's percussion. But I'm sure the vocal take was a combination of live and maybe a couple of overdubs from other passes at it. Bonnie liked to sing and play out in the room with the band. I think the first time we set up to cut, I put her in a booth and it just didn't swing and she wanted to be out there. So that's when I discovered [Shure] SM7s and [Electro-Voice] RE-20s on her vocal. The RE-20, in particular, was pretty clear-sounding and it resembled a large-

diaphragm condenser microphone in a lot of ways, but it's got incredible rear and side rejection so you could put her in the room with the band and not have to even put baffles around her, though I think I did probably put one up. But she could be with the musicians, and everyone could feed off each other, hear each other, see each other. And when you're close to the drums, you feel the drums and I think you sing and play a different way, rather than being isolated in a booth somewhere.

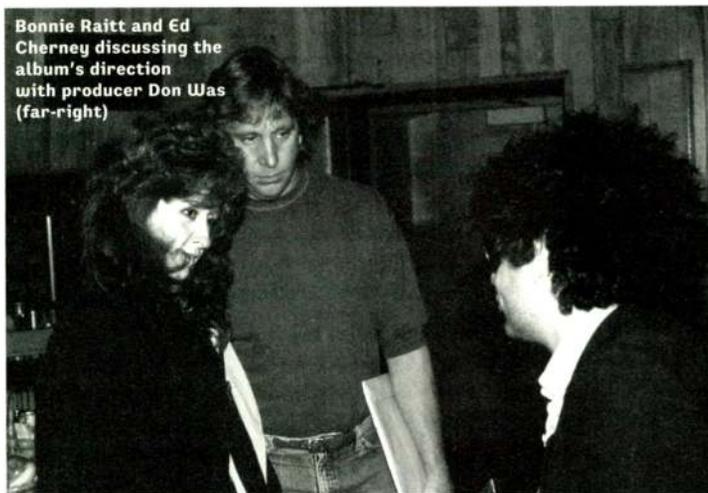
"Johnny [Lee Schell] was out in the room, too, and I put some goboos around him because he was playing acoustic guitar. I probably used an [AKG] 452 on him; that's really directional. He did his harmony vocal right after that and it was easy; he'd been singing with her forever,

Ampex ATR-124 machine through a 40-channel custom Neve RCA 8028 console, "one of only two built with Class-A discrete electronics." The album was mixed at the Record Plant in what was then called Studio 4 (now SSL 4) on a Neve VR. "A bunch of the songs on that record were pretty easy to mix, but I struggled with 'Thing Called Love' a bit," Cherney reflects. "I think I went back to it probably three times. It needed to sound real and organic, but it also needed to stand up and kick you in the ass. Bonnie and Don were patient while I tore my hair out until I felt I had it nailed." He used minimal effects: "Some slap on Bonnie and on Johnny Lee, and then a couple of the plates at Ocean Way. I probably used two EMT 140s—one short and bright, and one with a 2-second decay with probably 120 ms in front of it."

The finished track simmers with a rawness and intensity that fits Raitt's voice and slide guitar perfectly. Though not a smash hit in the sense of being a successful single, "Thing Called Love" was gobbled up by FM radio across the country (it reached Number 11 on *Billboard's* Mainstream Rock Tracks charts) and was an immensely popular video on the still-rising VH-1 network—having Dennis Quaid at his cutest in that video no doubt helped.

Buoyed further by the success of Raitt's moving, self-written ballad "Nick of Time," the album quickly became the artist's biggest seller by far and really went into the stratosphere when it won three Grammys (Album of the Year, Best Pop Vocal Performance Female and Best Rock Vocal Performance Female)—it hit Number One right after that. It was, Cherney says, "life-changing."

Raitt, Was and Cherney would have even more success with the 1991 album *Luck of the Draw* (which contained the smash "Something to Talk About") and enjoy a three-peat with *Longing In Their Hearts*, which hit Number One in 1994. Was and Cherney won individual production and engineering Grammys, respectively, for their work that year. The duo's productive partnership also included albums with Bob Dylan, Iggy Pop, Neil Diamond, Bob Seger and the Rolling Stones. Raitt has reduced her output in recent years and tours less frequently, but still can be counted on to make fine albums, put together a first-rate band and show up when a good cause needs a helping hand. ■



Bonnie Raitt and Ed Cherney discussing the album's direction with producer Don Was (far-right)

and that kind of harmony is part of his DNA so it was no problem. But a lot of Bonnie's vocals on this record were for the most part live."

For Fataar's drums, "I had [AKG] C-12s overhead and probably a [Shure] 57 on the snare with a [Sennheiser] 441 underneath. At that time, I'd just gotten these B&K 4011 microphones and I'm sure I had that on the hi-hat. For toms I might have been using C-12As, and the kick drum was probably a [Neumann] FET 47 and a [Sennheiser] 421. I had [Neumann] M50s up in the room fairly wide, and I ended up not using much of them. But I do remember I had a [Neumann] 87 in omni about 10 feet in front of the drums, about six feet high, and I compressed [with a Fairchild] and EQ'd the heck out of that. That was what we used for drum ambience." Hutch's bass was recorded with a DI and a FET 47 on the amp, probably without any EQ or compression; Raitt's slide, which she also played live on that track, had a 57 close on the amp and an AKG 414 "back off it a little." *Nick of Time* was recorded analog on an

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# Live



Linkin Park performing at San Jose, Calif.'s HP Pavilion

## Linkin Park

By Sarah Benzuly

### GO TO THE SHOW, CATCH IT AGAIN DAYS LATER

Linkin Park is a band that delivers—on-stage, in the studio and just a few days post-gig. For the latter, front-of-house engineer Ken “Pooch” Van Drueten and programming/playback engineer/keyboard tech Dylan Ely provide a fully mixed and mastered, pro-quality live album within two to three days after each performance. With a purchased ticket, each fan is offered a high-quality download of the live recording; distribution of the download is provided by Basecamp Productions.

“We have been releasing shows after the fact for about four years now,” Van Drueten explains. “Dylan and I have mixed approximately 400 shows at this point. We were given the opportunity to mix a DVD release, *Live at Milton Keynes*, which was nominated for a Grammy

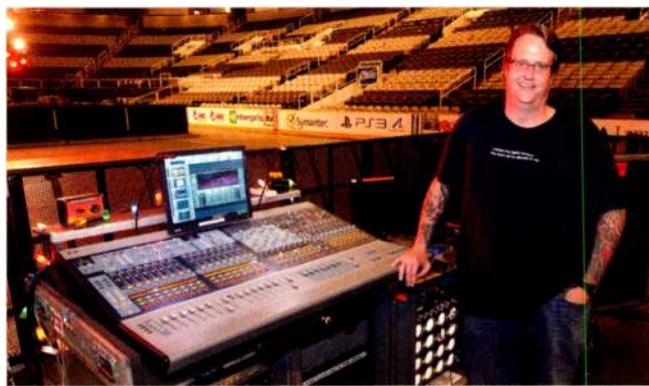
[Best Hard Rock Performance, 2010]. It is one of the most fulfilling duties I have while working with Linkin Park. It is nice to know that any time you hear something that Linkin Park has done live, it is a mix that Dylan and I have done—minus a few things that their recording engineer, Ethan Mates, has done.”

For the live recordings, Van Drueten and Ely spend about 24 work-hours per show prior to the release. As the band (Brad Delson, guitar; Chester Bennington, vocals; Joe Hahn, turntablist; Mike Shinoda, vocals; Phoenix, bass; and Rob Bourdon, drums) has mandated that they want “record-quality bootleg” recordings, Van Drueten says that most of his and Ely’s time is spent shaping the sound of what is coming offstage with

the sound of the actual room and making that work—creating a sonic landscape with the band’s full, rich sound with loud crowd response.

“Basically, there is a template that we have worked on now for about four years,” Van Drueten says. “We insert that as a starting point and work from there. Dylan does most of the editing, I do the mixing and then it goes back to Dylan for more editing and mastering.”

For the recordings, Van Drueten uses the HD X cards from his Avid D-Show Profile (96-input with five DSP cards) at FOH to record directly to Pro Tools HD at 24-bit/48 kHz (78 inputs total). The day after the gig, the two take the recording and import it into that template, which has inserts, sends and routing already set up.



They then time-align the audience mics with the close mics (Audio-Technica models), edit any major mistakes and do some cleanup on tracks that aren't being used for certain songs. "We then mix the cleanup tracks, treating them as a complete show, with no time in-between songs or cutting out encores," Ely says. "The idea is to mix the show for the fan just as he or she would have heard it if they were attending the show. During the mix process, notes are made about any mistakes, then they're addressed and fixed, and then it gets mastered. All songs are matched level- and EQ-wise within that show, as well as being compared and matched with previous shows. We then print as a 24-bit/48k WAV file." That file is then converted to 320kbps MP3 files and uploaded to the Basecamp site via the company's proprietary drag-and-drop software. "The whole process for a 90-minute show takes about 16 hours of post-production: a day of editing and a day of mixing," Ely adds.

### Back to the Show

To re-create much of the same electronic-rock fusion created in the studio to the live performance arena, Van Druten (who has been mixing for the band for the past five years) says his job "is to reproduce what is coming from the stage in a way that the audience hears every instrument and vocal," Van Druten says. "Nowadays, it's a bit more complicated. With technology, I am able to insert my own creativity into the mix to provide the audience with a record-quality listen." This includes relying on choice plug-ins such as those from Waves, URS and McDSP. He taps into the Waves MetaFlanger for some intense vocal effects on the song "The Catalyst" (off of their latest release, *A Thousand Suns*). In his outboard rack are such pieces as an Apogee Big Ben word clock and M-Audio ProFire 2626 FireWire interface to record the 2-mix and audience mics to a MacBook Pro. "I have a Pro Tools HD4 Macintosh rig with an [Avid] Expansion chassis for the ability to record 96 inputs, one for one," he adds, "a Waves Maxx BCL for recording of the 2-mix to eliminate some DSP usage, and an Ale-



**Above left: monitor engineer Kevin "Tater" McCarthy (left) and monitor systems engineer Paul "Pablo" White. Above: front-of-house engineer Ken "Pooch" Van Druten. At left: programming/playback engineer/keyboard tech Dylan Ely and lighting director A.J. Pen.**

sis ML9600 hard disk recorder/CD burner for fast-turnaround of recorded stuff, plus playback.

"The last few years have been completely freeing because the technology allows me to reproduce all of the effects and sounds that were used when the band made the recording that people know and love," Van Druten continues. "I have been a musician all my life—specifically, a bass player. I believe that the rhythm section is the key to every mix. I think of a mix as a houseplant: The drums and bass are the roots; the keys, vocals, guitars, et cetera, are the stems, leaves and flowers. It is not possible to have the stems, leaves and flowers without the solid, sturdy root system."

All mics onstage are Audio-Technica (the band endorses the company), except for the RF and wired vocal mics, which are Sennheiser 865 Series. "My favorite microphones for guitars and basses—stringed instruments, in general—are the large-diaphragm Audio-Technica mics. I use the AT4050 and the AT4047 on all guitars. We have 86 inputs and about 60 of those are open microphones, so it's really necessary to make the right mic placement and choices."

Pumping the blistering sets to the audience is an Adamson Y-Axis system, with Van Druten noting the 18-inch speakers in the main array and 21-inch speakers in the subs as key to this band. "Both couple very nicely to reproduce low-mid to sub information that other P.A.s just can't do," he says, adding that he has three Dolby Lake processors for matrixing and zoning. In addition, he relies on

systems engineer Chris "Cookie" Hoff and Evan McElhinney, who spend much of their time making sure that every seat in the house sounds the same and is covered. "I count on them greatly, and they are the best in the business," Van Druten says.

Monitor engineer Kevin "Tater" McCarthy is also in constant contact with Hoff at the beginning of the tour to make sure his mixes were dialed in as the stage is diamond-shaped and the band plays downstage of the P.A. for most of the show. He is manning a Yamaha PM5DRH (the same model as when *Mix* caught up with this Linkin Park crew back in 2008) with a DSP5D (PM5D-EX system); outboard is all done via Waves SoundGrid multi-rack system. "I'm using all 24 mix outs, all eight matrices and the stereo out B," McCarthy says. "I also use two outputs on the DSP5D. There are eight sidefill/wedge mixes, six IEM stereo mixes and a mono ear mix; the rest are effects and shakers." The entire band except guitarist Delson are on JH Audio JH-16 ear monitors. The wedges (12 Adamson M12 underhung and two M12s onstage) and SX18s sidefills are for Delson, who wears generic foam earplugs with Peltor gun muffs over them. Power is via Lab.Gruppen PLM10000 amps.

In 2008, McCarthy was mixing from underneath a rolling stage. This time out, he's located at upstage-center, completely behind the band, and using spy cams to keep track of what's happening out front. "I am in constant contact with the band if they need something," McCarthy says. "Plus, my assistant, Paul "Pablo" White, is an extra set of

## Program Me

Programming and playback are heavily involved in any Linkin Park adventure—be it in the studio or live. After engineer Dylan Ely receives the full album multitrack and the band determines which parts will be played live, he will make stems of those elements from the album that need to be programmed. He uses two Mac laptops (one is a redundant system) running Pro Tools M-Powered playing back all of the stems. The redundant machine is synched to the main machine via MTC, and the backup machine is set to Jam Sync the incoming MTC, “so if the main computer stops, loses power, et cetera, the backup machine will run infinitely at the same rate as it was when it lost timecode.”

### Ely breaks down the eight tracks that comprise the stems:

**Track 1:** typically any low-frequency material, like 808s or maybe the low end of a drum loop that has the high frequency filtered off.

**Track 2:** usually any type of mono drum loop element that cannot be played live by the drummer.

**Tracks 3 and 4:** used for any type of sound that has to be stereo, typically a synth or string pad-type sound or a drum loop that is full-frequency with a stereo element to it.

**Track 5:** any high-end arpeggiated-type synth or a swell.

**Track 6:** click track that only is going to the bandmembers' ears onstage.

**Track 7:** a reference track or a keyboard and/or vocal only heard in the singers' ears onstage as a pitch reference. Also sometimes a click to “automate” a section for a certain member in their ears, only for a cue or reference.

**Track 8:** SMPTE. Timecode is used to run/sync the lights and video during the show.

eyes and ears for me. Linkin Park and production manager Jim Digby are wonderful to work for and they give me all the tools I need for my job.”

Van Druten echoes McCarthy's sentiments: “Truly, we are family on this tour. Some of the people here I have known for 20 years. When you are away from your ‘real’ family, it is really nice to know that your ‘tour family’ is always there for you. I couldn't be happier with the situation. Great band, awesome crew—what's not to love?” III

Sarah Benzuly is Mix's managing editor.

# SCHOEPS

□ □ Digital



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**E**ric Conn's life shifted with the change of a head stack. "I was a music major in college, but I didn't know anything about recording and I'd never even heard of mastering," says Conn, who runs Independent Mastering in Nashville with friend and fellow musician Don Cobb. "A friend was doing a project at Doug Sax's Mastering Lab [then in Hollywood], and I walked in there and Doug changed the head stack on a tape machine, and all of a sudden the sound changed. That moment was where I fell in love with mastering, and thought, 'Whoa, this is what I want to do.'"

Conn wound up working at Sax's Sheffield Lab Recording for three years, and then at Denny Purcell's Georgetown Masters for four years. Cobb was also a staff member at Georgetown, where he worked for 14 years under Purcell, perhaps the most celebrated and best-loved mastering engineer in Nashville history.

"I started as a recording and mix engineer," says Cobb, who worked in that capacity with James Taylor, Quincy Jones, Waylon

petitive in the marketplace," Conn says. "We have conversations regularly about where people want to fit in the marketplace. Does someone really need to be as loud as Nickelback? A lot of clients are saying, 'No, I don't need it that loud.' If all they want is for it to be loud, we can do that, but we show everyone the other options and show them what they're gaining or missing."

The board at Independent Mastering is a custom job that started in Conn's living room.

"We wanted simplicity and a good signal path," he says. "Everything in the signal path is discrete and a lot of it is unbalanced. It's just simple: Less is more. It's the same with the monitors. We went through six months of listening to different monitor boxes, and we couldn't find anything that sounded better than what we built, which basically has a couple of switches and an attenuator. You can put relays in and complicated switching and a lot of pretty lights, and you may wind up with something that looks good and sounds like crap."

Conn and Cobb operate on a "four ears is better than two" system, working through most projects together, though Conn tends to deal more with equalization while Cobb handles the bulk of the editing duties.

"The common denominator is the Sonic Solutions editing system we use," Cobb says. "We rely

on that, daily, and it's a great system."

The studio monitors are based on Pioneer components, but they're custom jobs as well, with Bryston amplifiers on the low end and McIntoshes on top. "We used to have near-fields up, and we like these so much that we don't even use the near-fields anymore," Cobb says.

Independent Mastering is located in the same complex as Masterlink, the studio that was formerly Monument and that

has housed sessions by Neil Young, Kris Kristofferson and many others. Every now and again, Cobb and Conn record something at Masterlink, always for fun and always live to 2-track.

"We like that because we're musicians," Conn says. "I think one thing that puts us at a good place in this game is that we know what acoustic instruments sound like, so there's a benchmark for fidelity and a benchmark for the way an acoustic instrument sounds in real life. We've got four different sets of line amps, and two are solid-state, and each one sounds different. Spending the time to know the gear is an important part in the process, and the goal is to make the instruments sound like instruments. Some people feel that they must impart their signature on a record, but we don't feel that way: The mix engineer and the artist have worked hard to achieve that level of integrity with the mix, and it's not our job to change it. We'd rather the artists create their signature, and we're just part of the process to make sure that comes through." III

Peter Cooper can be reached at [peter@petercoopermusic.com](mailto:peter@petercoopermusic.com).



Don Cobb (left) and Eric Conn of Nashville's Independent Mastering

Jennings and others. "In the studio, it's a great process, but mastering is a little more sane schedule. What's interesting to me is that someone comes in with a data drive or a reel-to-reel tape or whatever it is, full of different mixes, and you spend the day EQ'ing and editing, and at the end of the day you can have a complete album. You get the excitement of the project, and the next day you're on to something else."

Since opening Independent Mastering in 2001, Conn and Cobb have mastered music from Garth Brooks, Kenny Chesney, George Strait, Martina McBride, Earl Scruggs, Janis Ian and numerous others, yet they talk as enthusiastically about the recent Chris Pandolfi album as about any million-seller. Pandolfi, after all, is a particularly deft Nashville banjo man, and his *Looking Glass* album—well, it sounds good.

By background and inclination, Conn and Cobb are musicians who concern themselves with signal path rather than engineers who concern themselves with music. "We do a lot of educating here, about levels and retaining dynamic range versus being com-

# SOUNDCHECK



Above, from left: WSDG partner/European general manager Dirk Noy, Club 'Tis (at left) general manager Timo Ruesch and M&R Multimedia Productions general manager Alain Mueller

PHOTOS: DIRK NOY

## Quick-Turnaround Install

Switzerland's largest and most popular music hall for the past 63 years, Atlantis Basel (otherwise known as 'tis) underwent an acoustic and system upgrade, spearheaded by the club/lounge/restaurant's host, Jürg Wartmann, and resident DJ, Cedric Eichenberger. WSDG Europe was brought in to collaborate on the project, which also included Jürg Arpagaus from Audio Partner and Alain Müller and Christoph Ritter from system installer M&R Multimedia Productions.

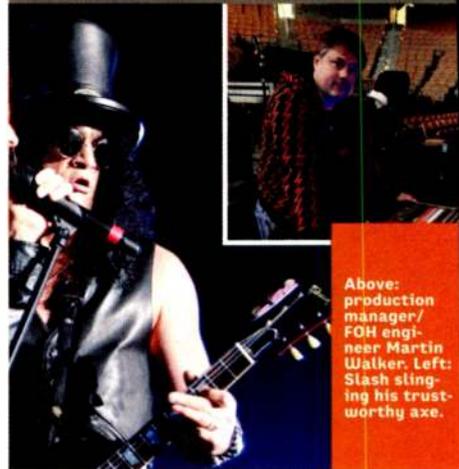
Two JBL AM6212s and an Application Engineered Series two-way speaker are centerstage. The upstairs art gallery and auxiliary zones (which host concerts and other events) are covered by 12 JBL AC 28/26 systems; Kling & Freitag 15-inch subwoofer systems were installed under the stage. Electronic signal processing and distribution is handled by a BSS SoundWeb London processor with a BLU-160 and BLU-BOB breakout box. The amplifier rack is stacked with eight Crown I-Tech HD devices.

Because the club is situated in a mostly residential area, to keep noise to a minimum WSDG recommended the Martin Audio Engineer, an audio processor that employs Residual Pitch, a proprietary psychoacoustic effect that permits the audience

to discern LF energy not actually produced by the system. The overtones of this missing, suppressed or phantom fundamental frequency lack a specific sound component, but the brain perceives the pitch of a tone by the ratio of its higher harmonics. Ultimately, listeners in the club are unaware of the Residual Pitch effect, but the club's neighbors benefit from a subtle adjustment in volume. The installation is a first for the processor in Switzerland.

Because 'tis is open six nights a week, the install had to be meticulously planned and implemented. M&R project manager Christoph Ritter reports, "At 5 a.m., when the Saturday Club Night ended, we started rocking. At 7 a.m. Sunday morning, we began dismantling the old equipment. By mid-afternoon, all the loudspeakers and old amplifier racks were dismantled. Then we immediately started the installation of 18 new loudspeaker systems. By early Monday morning, despite a sleepless night, we had set up and rewired all the new amplifiers and system racks. That afternoon we began running tests and fine tuning." As early as noon on Tuesday, the club was able to play background music and launch Friday Night Club with full power.

## tour log



Above: production manager/FOH engineer Martin Walker. Left: Slash slinging his trust-worthy axe.

## Slash

Guitarist extraordinaire Slash is currently on the European leg of his worldwide tour. Mix caught up with production manager/front-of-house engineer Martin Walker.

### How did you get involved with this tour?

The previous engineers are good friends of mine, and they needed someone to take over when they left to go back to their main gig: Linkin Park (see page 53). Ken "Pooch" Van Druten [Linkin Park FOH] and I go back a long way and we worked together on Judas Priest, so he offered me the gig.

### Why did you choose the DiGiCo SD8 board?

I love the DiGiCo range and felt that this was the most sensible desk to take from that range when we were doing a U.S. club/theater tour [last year]. I've carried it on through this year because it was just so easy to use and I was already set up to go on it.

### Do you have a mixing style for Slash?

I keep things very simple—no plug-ins, no outboard. I use the graphics a lot and I use just four onboard effects. I feel that Slash's style is very straightforward and needs no fancy treatment. The sounds coming off the stage are great and easy to work with. It's a joy to work on—there's plenty of dynamic and plenty of room for a few nice effects to come through. I have a great range of Shure mics, particularly the new KSM313s that I use on Slash's guitar, but nothing out of the ordinary to be honest.

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

I live in the middle of nowhere in a tiny village in Lincolnshire, England, and spend as much time as I can with my wife and two small daughters, but time not on the road is rare. I have been with Judas Priest for the last 11 years and they keep me busy a lot of the time, and when I'm not out with them, Major Tom keeps me busy on Rod Stewart or I find myself behind the desk on Whitesnake, Testament and Mastodon, among others.

## fix it

## Kings of Leon Monitor Engineer Saul Skoutarides



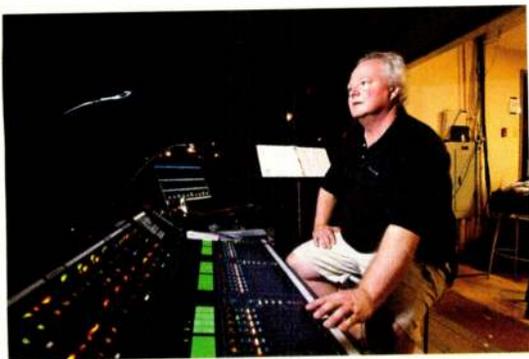
I'm currently using the POP groups [on the Midas XL8] for instant access to groups of instruments. However, I'm now considering making some of the groups specific to the individual musicians. The great thing about the XL8 is that it accommodates your preferences and thought processes on how you like to lay out your show. At the moment, I mainly automate mutes and use the scene memory for notes and cues. I also save the show file for every venue so that when we return, I'll be at a good starting point, even if the show

has evolved. Over time, that will give me a preset library for EQs and other settings. Other digital systems are designed around sharing preamps. But let's face it: In the real world, people rarely do this, which means carrying a split. Having dedicated, remote-controlled preamps built into the system is a lot more flexible, and still gives us the option for a third split, say for recording, if need be.

## iLive is a Digital Peach

Focusing on audio for live theater production, sound company Suburban Legend Audio (Fayetteville, Ga.) upgraded from an analog console to a digital Allen & Heath iLive-T 112 with iDR-48 MixRack. According to owner Jonathan Wade (pictured below), "I had experience with digital, both from mixing at my local church and in the recording studio, but this was my first time using an iLive. I felt very comfortable with it right away."

After a few small initial shows, Wade's first large gig with the iLive was Twilight Theater's production of the musical *Les Misérables* at The Frederick Brown Jr. Amphitheater in



nearby Peachtree City. "We had a live orchestra and a cast of 85," Wade says. "We also had 24 wireless mics and some people playing multiple roles, so there was a lot to keep track of. With the iLive, I was able to program the entire show, scene by scene, in advance. When rehearsals started, the audio was 90-percent

done, which was incredible. In addition to the stage miking and the orchestra, we had multiple cast members swapping mics, which meant compensating for the differences in the strength and EQ of their voices. Having the ability to write and instantly recall scenes allowed us to do that seamlessly."

During the production, Wade maintained control of the mix via audio groups and DCAs, with inputs grouped together. "I've got the main P.A. system on one DCA and the orchestra on the second one. All the wireless mics are on a third DCA, which I then have broken down by four additional DCAs—bass, tenor, alto and soprano—so I can control the vocal mix with just four faders. And if someone is too loud or too soft, I can go to the source group and adjust that mic on the fly."

Wade configured the board so that the top layer, Level A, gave him control of the 24 wireless channels, with the last three faders showing the aux outputs dedicated to the stage, orchestra and side-stage monitor mixes. "I can configure

the surface the way my brain works and what makes sense for the show. All I do is hit Next/Go to change scenes, and I can mix 90 percent of the show without changing layers. And if I do have to make a minor tweak, I don't have to stress about it because the next scene is already programmed."

## load in



Numerous Audio-Technica mics were in use for the 2011 Grammy Awards show, including a hardwired AE5400 on Barbra Streisand.

Front-of-house engineer Chris Trimby is manning a Midas Pro6 for the current *Manic Street Preachers* tour...The Verona Opera's (Verona, Italy) first live sound reinforcement system comprises K-Array KK50 Kobras at the foot of the stage, KR 200s around the perimeter of the arena and KK50s aimed toward the terraces; the system was provided by Musical Box Rent...Rat Sound Systems has taken delivery of 18 small-format L-Acoustics KARA line source elements...Aviom Personal Mixing Systems are now part of the scene at the New National Theatre Tokyo, where the crew can move the systems between the venue's three stages...Recently opened Miami-based The Stage club brought in a D.A.S. Audio system supplied by Interface Sound.

## road-worthy gear

### Soundcraft Vi1

This Vi1 stand-alone console package offers 32 channels of analog input to 27 analog outputs, six digital inputs, four stereo FX returns and six digital outputs. Input-to-mix capacity is 46 channels; users can add a StageBox to increase channel count to 64. Channels are routable to 24 multifunction buses, plus L/R and mono mix buses. Up to eight of the buses can be configured as matrix mixes, each with up to 16 sources. The desk is compatible with Vi4 and Vi6 show files through the Virtual Vi offline editor, available as a free download from the company's site. [soundcraft.com](http://soundcraft.com)



### Avlex MIPRO ACT-7

The new MIPRO ACT-7 Series wideband wireless mic systems comprise the ACT-717a single-channel, ACT-727a dual-channel and ACT-747a quad-channel UHF receivers; the ACT-7Ta wideband UHF bodypack transmitter; and the ACT-7Ha wideband UHF handheld transmitter. The receivers offer 216MHz bandwidth across three 72MHz-wide bands and provide up to 48 interference-free operating channels in bands 5UA and 6UA and up to 44 interference-free operating channels in band 5US. The ACT-7Ta and ACT-7Ha feature improved RF circuitry, with expanded 36MHz bandwidth. [mipro.com](http://mipro.com)



### D.A.S. Audio Road Series

These new stage monitors will replace D.A.S. Audio's SM and SML Series. The 12-inch and 15-inch, two-way powered monitors incorporate Class-D power amplification and a switch-mode power supply. The amp offers 550 watts for LF and 220W for the highs. Two EQ presets are available (monitor and main), and there is an advanced DSP that includes FIR filters for constant phase response. The monitors are made of Birch plywood and finished with Iso-Flex paint. [dasaudio.com](http://dasaudio.com)



## ALL ACCESS

Photos and text by Steve Jennings



This Australian drum 'n' bass/electronic five-piece band straddles between electronic and rock music, finding a happy medium for an increasing fan base. The band is out supporting their latest, *Immersion*, on which they collaborated with Prodigy. *Mix* caught up with the band and crew at San Francisco's Fillmore.

# Pendulum



Vocalist Ben Mount sings through a Shure UR2 radio mic with an SM58 capsule. The rest of the band's vocal mics are Shure SM58s.



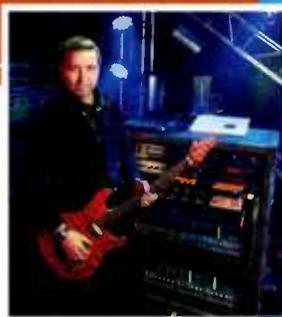
According to front-of-house engineer Antony King, he mixes on an Avid VENUE, whether the tour is carrying production or relying on house-provided gear. "All you need is two iLoks and a USB stick, and everything recalls," he explains. "For plug-ins, I use [TC Electronic] VSS3 and Waves. Outboard rack gear includes the TC D2 delay, TC System 6000 and Smart [Research] C2 compressor."

King's preferred P.A. for this band is an L-Acoustics V-DOSC, with 15 a side and three dV-DOSCs underneath. The rest of the system comprises 20 SB28 subs stacked

per side with three ARCs on top. Four dV-DOSCs are spread along the downstage edge; Lake processing is also employed.



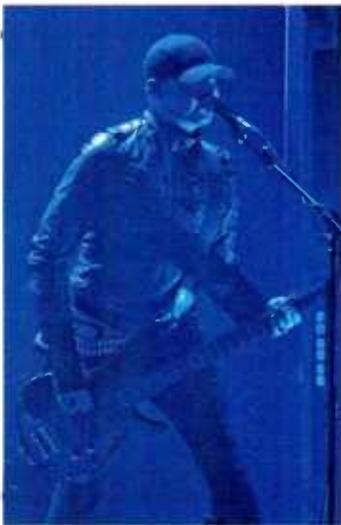
Monitor engineer Colin Burrell mans a Yamaha DM2000, using external A8R preamp/A/D converters for extra inputs into the board, and Aviom A16R and Squirrel Labs Defibrillator. "The band is on in-ears, with no wedges or sidefills," Burrell says. "We're using a Sennheiser IEM system that is great-sounding and very reliable. Some of the band is on ACS ears; others are on Ultimate Ears. I stuck with which models they were using when I started as everyone was happy already."



Guitarist Peredur ap Gwynedd plays through Hughes & Kettner CC 412 A 30s miked with Shure SM57s. According to guitar/bass tech Adey Wilson (above), at the core of Gwynedd's electric guitar rig is a TC Electronic G System. "The 'brain' is separately rackmounted and connects to the foot controller via a Cat-5 link," Wilson says. "It switches the Hughes & Kettner preamp channel-select to the desired sound/recall settings and interfaces."



Bassist Gareth McGrillen uses a Boss GT-8 foot controller unit for its onboard FX and an Ampeg SVT Pro II bass head (miked with a Neumann U87) into an Ampeg SVT-810E bass speaker cabinet, with the front grille removed. Both McGrillen and Gwynedd use Sennheiser UHF radio transmitter and receiver systems as the primary inputs to their rigs.



Drum tech Martin Gavrilovic (inset) breaks down Kevin Sauka's drum-miking scheme: Shure SM91 (kick), Beta 52 (kick), SM57 (snare top/bottom, Tama Octobans), Beta 56 (toms), KSM 137 (hi-hat) and Earthworks SR25s (overheads).



When Rob Swire plays keyboards (he's also vocalist, guitarist and producer), he uses three MIDI controllers to trigger his sounds: Korg K49, a CME UF70 and a Starr Labs Z6S custom Ztar MIDI controller guitar. He also has a Novation Launchpad used for locates and transport control while at the keyboards. "The K49, UF70 and Z6S MIDI outputs are merged into two Muse Research Receptor 1 Pros: one as a main and one as a backup," says keyboard tech Ben Adams (inset). "Rob uses a vast array of plug-ins inside the Receptors. Some of the most used and abused synth/samplers are rgc audio z3ta, Lennar Digital Sylenth, NI Kontakt and Absynth, and Novation VStation. These are only two out of the eight Receptors we use. Each band-member has their 'own' unit that is exploited heavily."

Adams uses two MacBook Pros with 266GHz Intel dual-core processors running Ableton Live V. 8.02. These are each connected to MOTU 828 Mk3 audio interfaces via FireWire and MOTU MIDI Express MIDI interfaces via bus-powered USB 2. The audio from the 828 Mk3s runs through a Radial SW8 audio switcher, and both the MIDI interface outputs are merged accordingly.

"Upfront, Rob uses a Roland FC-1 foot controller that allows him to modulate certain sounds with the two foot pedals and sustain with the foot switches while playing the Ztar," Adams explains. "I've been a keyboard tech for 16 years and this is without question the most challenging gig I've had to deal with."



# Tech

## NEW PRODUCTS

### Suite Sounds

#### SSL Duende Native Plug-Ins

The new Duende Native Plug-In Suite from Solid State Logic ([solidstatelogic.com](http://solidstatelogic.com)) is a group of processors functionally and sonically identical to the now-discontinued DSP-powered Duende plug-ins, but they run natively using a host computer's processing. The collection (VST/AU/RTAS, Mac/PC) is 64-bit capable and includes the EQ & Dynamics

Channel plug-ins, Drumstrip and Vocalstrip, X-EQ and X-Comp mastering-grade processors, and X-Verb, a hardware standard reverb for the DAW. Duende Native plug-ins are available for purchase individually or priced in bundles from the SSL Web store.



### Wireless Wonder

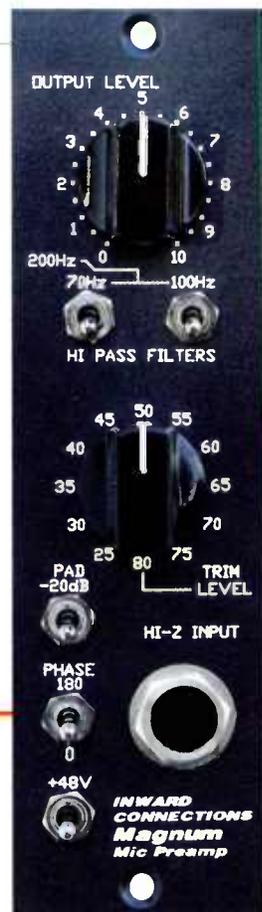
#### Sound Devices CL-WIFI Controller

Sound Devices ([sounddevices.com](http://sounddevices.com)) has released the latest hardware accessory for its 788T digital recorders. The CL-WIFI (\$249) works with its companion iOS software app to allow iPads, iPhones and iPod touches to control a connected 788T. The hardware CL-WIFI is a Wi-Fi access point when the iOS device connects to it over Wi-Fi. The CL-WIFI app then uses the Wi-Fi connection to communicate with the 788T. The iOS app controls metering of 788T input and track levels, timecode, file length, frame rate display and record start/stop input-to-track routing, enabling take list and take name editing.

### At Your Surface

#### Audio-Tecnica U851RO Boundary Mic

The Audio-Tecnica ([audiotechnica.com](http://audiotechnica.com)) phantom-powered U851RO offers outstanding speech intelligibility and transparent sound quality for surface-mount applications, professional recording, television, conferencing and other demanding sound-pickup situations. The U851RO's (\$313) small-diameter UniPoint® capsule near the boundary eliminates phase distortion and delivers clear, high-output signal. The unit is equipped with a PivotPoint® rotating output connector, allowing the cable to exit from either the rear or the bottom of the microphone; a UniSteep® filter, which provides a steep low-frequency attenuation to improve sound pickup without affecting voice quality; and UniGuard® RFI-shielding technology, which offers outstanding rejection of radio frequency interference.



### Boutique, Portable Gain Box

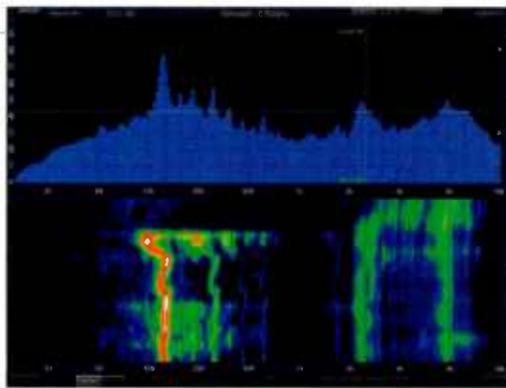
#### Inward Connections MAGNUM 500 Preamp

Inward Connections ([inwardconnections.com](http://inwardconnections.com)) has released the Magnum 500 Series (\$950) preamp. Replacing the discontinued MPD-500 mic preamp, the Magnum 500 features the VF-600 discrete amp block giving it a much warmer-sounding response than its predecessor. Other features include three highpass filter settings (70 Hz, 100 Hz and 200 Hz), separate input and output gain for tonal variation, +48VDC phantom power, polarity reverse and hi-Z DI input. The Magnum fits standard 500 Series slot configurations, mechanically and electronically.

## Captured Live

### EastWest Quantum Leap Spaces Reverb

Quantum Leap Spaces from EastWest ([www.soundsonline.com](http://www.soundsonline.com)) is a 24-bit true stereo convolution reverb created with an arsenal of gear from Neumann, Neve, Telefunken, TG, Manley, Sennheiser and Fairchild. Produced and engineered by Nick Phoenix, Quantum Leap Spaces includes custom impulses with a focus on the Western U.S. Impulses were taken of concert halls, churches, cathedrals, caverns, recording studios, soundstages, forests, a swimming hall, parking garages, water tanks, a tunnel and more. Most impulses are in 8-channel format to accommodate surround mixes. Quantum Leap Spaces is available for Mac and PC for \$299 MSRP.



## Power to Your iPhone/iPod/iPad

### Studio Six Digital Smart Tools

Studio Six Digital's ([studiosixdigital.com](http://studiosixdigital.com)) Smart® Tools (\$19.99) was developed by the company with Rational Acoustics and is based on the proprietary algorithms, techniques, features and color mapping found in the Smart® Version 7 acoustic test and measurement software. The bundle brings the analysis of Smart to the iPhone and iPod touch and iPad mobile platforms. The single-channel module includes Smart V. 7's RTA bar graph, RTA line graph, RTA bar and FFT graph, as well as Spectrograph. Plus, all of the RTA banding options available in Smart V. 7 are available in Smart Tools, including log, lin, octave,  $1/3$ ,  $1/6$ ,  $1/12$ ,  $1/24$  and  $1/48$ -octave modes. On the iPhone and iPod touch, there is an additional spectrograph with the RTA line graph overlay. On an iPad, split-graph mode is available so you can put any two graphs on the screen at the same time.

## This Way or That

### Drawmer 4x4R 1U Active Splitter

Aimed at any situation that requires audio signals to be split and fed to multiple destinations, the rackmountable 1U Drawmer ([drawmer.com](http://drawmer.com)) 4x4R (\$1,255) has four inputs and 16 balanced outputs. Each input features a mic preamp offering up to 66 dB of gain. The 4x4R's I/O may be configured in a variety of ways, ranging from a single input routed to all 16 outputs, to four different inputs each with four outputs and any configuration in between. The 4x4R features bargraph metering and switchable phantom power on every input channel. A front panel headphone jack provides a "listen" facility to monitor any of the four inputs. Transformer isolation is available for some or all of the outputs.



## Virtually Mixing

### Firelight Technologies FMOD Studio

FMOD Studio from Firelight Technologies ([fmod.org](http://fmod.org)) is an entirely new mixing platform that offers management of assets by running them through a virtual mixer, giving sound designers the ability to improve their mix without continual code adjustments. The platform will also support pro-audio DSP effects from companies such as iZotope. Users will be able to set snapshots for environments and actions within their title and use the mixer to automate tasks that were previously performed manually.

### Mics for Studio and Stage

#### Sontronics DM-1T, DM-1S, DM-1B

Designed by Sontronics ([sontronics.com](http://sontronics.com)) founder Trevor Cole, the DM-1T and DM-1S (\$159 each) are small-diaphragm, pencil-style condensers designed to work on tom and snare, respectively, while the DM-1B (\$399) is purposed for kick drum, bass and guitar cabinets. With a cardioid polar pattern and switchable -15dB pad, the DM-1T and DM-1S each come with a metal drum mount and mic clip. The DM-1B is a large-diaphragm, end-fire condenser mic that can cope with up to 150 dB (with the -15dB pad switched in) and comes in an aluminum flight case. All mics are covered by Sontronics' Lifetime Warranty and come with a free download of Toontrack's EZdrummer Lite.



### Now Hear This

#### Nugen Audio VisLM Loudness Metering Plug-In

VisLM from Nugen Audio ([nugen.com](http://nugen.com)) allows U.S. broadcasters to comply with the ATSC A/85 standard as referred to the CALM Act by offering a scalable system for metering. Two versions (VisLM-H, \$449; VisLM-C, \$299) offer a range of parameters including true-peak level metering (intersample-accurate level monitoring), loudness range (to help decide if and how much dynamic compression to apply), momentary "instantaneous loudness" for mixing by ear, short-term loudness (3-second time window) and program loudness (long-term integrated loudness measurement). VisLM-H offers additional features including offline data file export, multiple export parameters and post-mortem time logging.

### No More Scrolling

#### AV3 Software Get Dialog Search Tool

AV3 Software has released Get ([get-phonetic.com](http://get-phonetic.com)), a dialog search tool for Final Cut Pro editors. Get locates footage based on a patented phonetic search technology, powered by Nexidia, producing the most accurate representation possible of the true spoken content. Its unique combination of spoken-word search and traditional methods of content identification makes Get a revolutionary search tool for the enhancement of any Final Cut Pro editing workflow. Other features include combined dialog and NLE metadata searches, as well as dialog and desktop metadata searches, and the ability to pre-select content to be used within editing applications and projects.



### Now in Software Form

#### SoundField UPM-1 Stereo-to-5.1 Upmix Processor

Originally released as hardware only, the UPM-1 (\$975) plug-in from Soundfield ([soundfield.com](http://soundfield.com)) uses a unique algorithm that analyzes the stereo input material and separates ambient sounds from the direct sounds—or what might broadly be referred to as the "distant" and "close-miked" sounds. As with the original hardware unit, the plug-in allows detailed adjustment of the relative levels of direct sound and front and rear ambient sound in the final 5.1 mix, with continuous software rotary controls for width and center-channel divergence. Level, mute and solo controls are also provided for each channel. III

## SE Electronics Voodoo VR1, VR2 Ribbon Mics

**Active and Passive Models Offer Versatile Use, Low Profile**

I don't hide the fact that I'm a ribbon mic-aholic. The category is rich with manufacturers producing a range of mics—both active and passive—that are all sonically diverse and innovative. One of the later entries into this market is SE Electronics. Based out of Shanghai, China, SE announced a partnership with Rupert Neve Designs in 2008 and soon after released its first active ribbon, the RNR1. The latest ribbon release from SE is the Voodoo line, comprising the VR1 passive and VR2 active models.

Both mics ship in a sturdy wooden box and come with a simple stand mount and fabric sock to protect the ribbon element from environmental damage during setup; an optional shockmount is also available. On the outside, both mics sport a front and back grille with a series of 78 holes split into groups of threes separated by a solid metal piece at the middle. Behind this outer grille, the ribbon element is protected by a fine steel-mesh material. The engines in both mics are the same, but that's where the similarity ends. The VR2 is active, needs phantom power to operate and has twice the noise as its little brother (20 dB as opposed to 17 dB, A-weighted).

### Into the Studio

My first listen to the VR1 was on a tuba in a small orchestral ensemble. The mic brought plenty of the horn's low-end personality to the recording while toning down the blattiness at the top end. The VR1's output is considerably lower than the VR2, so a good preamp is



The VR1 and VR2 are both low profile, making it easy to position around instruments.

necessary; API Legacy Plus console preamps were just the ticket. In this session, the VR2 was employed on an upright bass placed near the bridge facing up from the floor. Like the VR1, the VR2 had plenty of low-end personality, but the need for gain from the preamp was greatly reduced. Because you don't have to add a lot of boost on the preamp side, the noise added by the internal electronics of the mic is negated.

Next, I used the mic on various parts of a drum kit. I first heard both the VR1 and VR2 on the outside of the front of a kick drum. I preferred the VR2 in this situation, which seemed to offer a more raw low end that I could pair with a Shure Beta 52 placed inside the drum. The Beta 52 provided the attack while the VR2 ably brought up the low end. I also used it underneath a low tom, which

added a great low tone to the top mic's stick attack.

I'm not usually a big fan of ribbons on lead vocals but I had to see what the Voodoos brought to the mix. In this case, the VR2 was very good at giving me a warm vocal with an extended top that was close to what I was looking for. The top end was further extended later with an EQ plugin, making it hit the reverb perfectly and sweetening the upper register.

I later had a chance to hear how the VR2 fared against the much more expensive SE RNR1. I had done a voice-over for a Webcast using the RNR1 and now had a chance to try the VR2 for the same application on another project. The VR2 was markedly darker in personality than the RNR1, calling for a cut in the lower mids and an additional EQ boost at 8 kHz to bring it up close to the RNR1's natural tone.

Both mics were stellar in front of a guitar amp. They are rated the same at 135dB SPL, and I needed little extra EQ after the recording.

### Was It Magic?

The Voodoo VR1 and VR2 mics were a joy to use. Both are sturdily constructed and have a very low profile, offering the ability to put them easily in and around a variety of instruments. From upright bass, drums, percussion, horns, guitar amps and vocals, the mics would give me, at minimum, something I could work with by adding EQ, and at maximum the perfect outcome without having to touch it at all. Both are affordable and street well below their asking price. If I had to pick a favorite, I'd have to go with the VR2. I felt it was more usable over a range of applications and preamps, but that's not to say I didn't like the VR1. No matter which you choose, the Voodoo VR1 and VR2 mics are both capable of delivering solid, musical results across a range of applications. III

Kevin Becka is Mix's technical editor.

### PRODUCT SUMMARY

**COMPANY NAME:** SE Electronics  
**PRODUCT NAME:** Voodoo VR1 and VR2  
**WEBSITE:** seelectronics.com  
**PRICES:** VR1, \$799; VR2, \$1,199

**PROS:** Sonically versatile, extended top end.

**CONS:** Shockmount an optional purchase, not included.

## Sound Devices USBPre 2

**Versatile DAW Companion Brings I/O Muscle, Clean Gain, More**

About 10 years ago, Sound Devices released the USBPre. It offered a multitude of I/O options and clean mic/line gain. The sequel, USBPre 2, is as new and improved as you'd expect, but sells itself short in its name. It's more than a USB mic preamp, offering some of the most flexible I/O options you'll find on an interface this size. It's also built like a tank and is the perfect back-pocket tool to bring to any gig.

The physical connectivity is impressive. There are a pair of XLR mic inputs, a pair of 1/4-inch TRS line-level inputs, a pair of unbalanced RCA inputs, a dedicated RCA coaxial S/PDIF input and a Toslink S/PDIF input. Outputs are also deluxe: a pair of male XLR connectors that will output mic or line-level; individually selectable, unbalanced RCA outs; S/PDIF outputs on RCA or Toslink; and headphone outputs including a 1/4-inch TRS and a 3.5mm mini-headphone jack. Computer connectivity is handled through a USB 2 B-Type connector. With all of these I/O options, combined with an array of DIP switches to toggle available signal flows, the possible functions of this device are incredible.

### Versatility Defined

The USBPre2 is quick on its feet. It can be used as a stand-alone preamp, A/D converter, D/A converter or monitoring interface for a computer. Many of these components can be chained together in any desired combination.

#### PRODUCT SUMMARY

**COMPANY:** Sound Devices  
**PRODUCT:** USBPre 2  
**WEBSITE:** sounddevices.com  
**PRICE:** \$649.95 (street)

**PROS:** Great sound, versatile I/O.

**CONS:** No word clock input.



The USBPre 2 offers numerous I/O options and records at up to 192 kHz.

Considering its potential use as a portable front end for another device, aside from a computer, you may share one of my original concerns: The device can only be powered from a USB connection. After becoming aware of the wide world of wall-wart-style power supplies that terminate to a USB connection, this concern was erased. For portable use away from a computer, a representative from Sound Devices turned my attention toward the Energizer Energi to Go XP8000 Power Pack, a rechargeable battery pack that he had used to power the USBPre 2 successfully.

I tested the USBPre 2 in a variety of workflows, first as a simple back end for computer monitoring. The headphone amp provided generous gain, which is accessible through a clean, sturdy control knob. The sound of the D/A conversion clocked internally was widely dynamic, open in frequency response and remarkably clean. The top end sounded soft and natural, the midrange free of congestion, and the bottom end round and full. All of these qualities were well complemented by a tastefully engineered headphone amp, but also translated to a vivid stereo image when fed through the line outputs to a pair of active monitors.

I tried out the front end of the USBPre 2 both as a stand-alone pre and as an interface feeding Pro Tools 9. I used the preamps

to record Foley and ADR, relying on an Avid Pro Tools HD 96 I/O for conversion. In this case, I would have appreciated a dedicated BNC word clock input so I could have simply taken a tap off of the same master clock that was feeding my Pro Tools SYNC | HD and video machine, and fed S/PDIF out of the USBPre 2 to the 96 I/O. Granted, clocking through the USBPre 2's S/PDIF input may have been a possibility, but with all of the other connections considered, a dedicated word clock input doesn't seem outside the realm of expectations.

That aside, the preamp performed impressively, providing a well-detailed recording without excessively coloring the output of the microphone. The sound was full throughout the lower ranges, never brittle, and free of any noticeable hum. In fact, I was somewhat surprised to notice how low the preamp's noise floor was. Upon further investigation, I heard the noise change with each microphone selection and arrived at the conclusion that the self-noise of the microphones exceeded the noise of the USBPre 2 itself. Using a TLM 103 (a microphone known for low self-noise) in a quiet room, I had to crank the mic into distortion before any noticeable hiss or noise could become apparent. According to the Sound Devices Website, on the topic of the USBPre 2's microphone pre-

amps, "Their topology is shared with Sound Devices award-winning 744T digital audio recorder," which is well known as an industry standard in field recording.

### Able DAW Companion

Using the USBPre 2 as a Pro Tools 9 interface provided a pleasant experience all around. I was equally impressed with the A/D converters as I was the D/A converters. Again, recorded sounds were detailed and smooth at the top end. The conversion was accurate and lacked the garbled phase discrepancies often found when using portable USB interfaces. A physical analog control allowing the blending of input signals with output from computer allowed a means to A/B the signal pre- and post-conversion—the two sounds were strikingly similar. Sample rates are available from 44.1 kHz through 192 kHz for recording and playback at 16 or 24 bits per sample. Recording or playback are selectively metered with an onboard peak meter. Each channel, left and right, is segmented into 24 LED segments displaying values from 0 dBFS down to -44 dBFS. This proved very useful, as accurate input or output metering (toggled with a convenient button on the front panel) was achievable even in poor lighting conditions.

The USBPre 2's build quality is quite impressive. All connectors and knobs are sturdy and feel very solid. Two smaller front panel knobs (main output level and the pre/post-monitoring knob) pop up or recess into the unit to keep them safe during transit. All of the front panel buttons are tiny, sturdy metal toggles, rounded on the top, that sit low enough to prevent bumping or snagging. Additional functions like highpass filtering, phantom power and various other options are provided using DIP switches to toggle their functions. Though slightly less convenient than some alternatives, the tradeoff is that they're safely housed beneath a rubber dust-cover. Moreover, other devices would rely on a software control panel to make selections provided here with controls on the hardware unit itself. Thus, there is no software to install, no drivers, no control panel or anything else. Plug it in, and it works.

### This Is a Buy

The USBPre 2 is one of the most practi-

cal and convenient portable USB interfaces available. It offers great-sounding analog circuits, impressive clocking and conversion, and a generous selection of I/O combinations. It provides clean, honest recorded sounds via its onboard pre's, or gives you clean A/D conversion if you connect a more flavorful preamp. Likewise, it provides clear and detailed monitoring with a headphone

amp that will never fall short on gain. And while I assumed it would price out just a bit more than \$1,000, the price tag is a far more reasonable at \$650 street. If you're looking for a stepped-up portable interface, this would be an excellent pick. III

*Brandon Hickey is an engineer and educator who likes hoppy beer and the Blackhawks.*



### CRITICAL DETAILS

Are just that - critical. They are the difference between a mix and the perfect mix. So while you sweat the details, from mic placement to mastering, the m903 ensures that none of those details go unattended.

With unrivaled DAC performance, absolute purest analog circuitry and smart ergonomics, the m903 is the ultimate, svelte playback control for any computer based recording facility.

- Stunningly detailed sonic performance
- High-speed asynchronous USB interface for bit-perfect computer audio playback
- 24/192 AES, S/PDIF and TOSLINK digital inputs
- Balanced and Unbalanced analog inputs
- Dual line outputs for control of two sets of studio monitors
- Passive crossfeed circuit great for mixing with headphones
- Optional infrared remote control
- Mono mode
- Five-year transferable warranty
- [www.gracedesign.com](http://www.gracedesign.com)

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AT4081  
Bidirectional  
Active Ribbon  
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Introducing the silky smooth, classic sound of Audio-Technica's first-ever ribbon microphones, the AT4080 and AT4081. With 18 patents pending, Audio-Technica's proprietary handcrafted ribbon transducer advances the evolution of ribbon microphone design, offering remarkable durability and phantom-powered active electronics. Use these breakthrough microphones in recording studios and live-sound settings. Wherever your passion for music takes you, experience more inspired sound. [audio-technica.com](http://audio-technica.com)

**AT4080 & AT4081 Bidirectional Active Ribbon Microphones**

- Smooth, warm and natural high-fidelity sound
- Groundbreaking ribbon design with 18 patents pending
- MicroLinear™ ribbon imprint for superior durability
- Dual ribbon construction for increased sensitivity
- Powerful N50 neodymium magnets for high output level
- Ultra-fine mesh helps protect against ribbon damage
- High-SPL capability and extended frequency response
- Handmade production – including ribbon corrugation, imprint & assembly
- Phantom-powered active electronics provide stable impedance and higher output for maximum compatibility with microphone preamplifiers



**audio-technica**  
always listening

## Antelope Audio Zodiac+ HD Mastering Converter

### Great-Sounding D/A Box Offers Input Switching, Versatile I/O

Years ago, Robert Hadley at the Mastering Lab (Hollywood) rocked my audio world when, with a push of a button, he re-clocked my master mix to an Aardsync II. I was so amazed by how much better it sounded that I bought one the next day. Aardvark is no longer in business, but Aardsync II's designer, Igor Levin, continues to innovate new word clock designs for Antelope Audio.

In 2010, Antelope Audio released the Zodiac line of D/A converters. These converters incorporate technologies developed for the company's word clocks such as the "Oven Clock," 64-bit "Acoustically Focused Clocking" and jitter management. For this review, Antelope sent me a Zodiac+ (its midline model), along with an external power supply called the Voltikus.

### Jitter Me This Batman

Before I began this review, I believed that all jitter was bad. Not so, according to Levin, who says that jitter is both good and bad. Converter chips need to have small amounts of random noise or dither added to break up or randomize naturally occurring repetitive patterns generated by the converter chip. Levin says that properly controlled jitter serves to randomize these patterns and helps make the converter sound more natural and less "digital." To accomplish this, Antelope starts with a temperature-controlled sealed container that keeps the clock crystal at exactly 65 degrees C,  $\pm 0.1$  degree. Then the company applies its proprietary technique of controlling clock jitter called Acoustically Focused Clocking.

### Well Connected

The Zodiac+ has multiple inputs and out-

#### PRODUCT SUMMARY

**COMPANY:** Antelope Audio

**PRODUCT:** Zodiac+ D/A converter; Voltikus external power supply

**WEBSITE:** antelopeaudio.com

**PRICES:** Zodiac+, \$2,695; Voltikus power supply, \$1,090

**PROS:** Crystal-clear sound, great connectivity.

**CONS:** Headphone outputs exhibit a distracting "sizzly" sound.



The Zodiac+ offers a wide variety of analog and digital I/O.

puts. Digital inputs include an AES/EBU, two Toslink/optical connectors, two S/PDIFs and a custom-designed, high-speed mini 2 B-Type USB connector that operates at up to 192 kHz. It also has analog balanced +4dBu and unbalanced -10dBv inputs. The analog inputs allow the Zodiac to function as an input switcher for multiple sources, both analog and digital. For outputs, the Zodiac has balanced and unbalanced analog outputs. The balanced outputs have small trim pots for precise output adjustment, and have up to 26 dBu of output. It also has an AES and two S/PDIF de-jittered, re-clocked outputs to feed other digital equipment. There is an external word clock input in case you want to use an external clock.

The front of the unit has a digital readout showing the source's sample rate and the precise setting of the analog output. All of the Zodiac+ volume adjustments are done in the analog domain. When the large output knob is turned all the way up, it shows 0dB attenuation. When the knob is turned counterclockwise, the display shows the exact amount of attenuation. The front also has a small volume knob for two headphone outputs and dedicated buttons for power, source, mono and mute.

### In My Ears

To do comparison tests, I configured a Pro Tools session to feed the same output to four different pairs of stereo converters: stock Avid HD 192, BLA/RAE FM192, a Lavry Blue and the Zodiac+. I calibrated the converters to a 1k tone. All of the converters exhibited extremely flat frequency responses, from 20 to 20k Hz. I listened on my normal converters to some familiar mixes to get my bearings. I was unprepared for my reaction when I switched to the Zodiac+. It was dramatic—the difference was not subtle. The mix was instantly more punchy and clear. There was a perceived increase of upper midrange and lower-high frequencies as compared to the other converters. I say perceived because all of the converters were level-matched and they all looked the same at all frequencies. As I listened to different types of source material, I had the same experience. The bass did not increase, but tightened up. The soundstage seemed to widen slightly. Both of these effects generally happen with the addition of high midrange to high frequencies, but with the Zodiac+, these changes in the sound were not due to any EQ.

I then listened to the other digital inputs. I plugged the optical output from my Apple

G5 into the Zodiac+. I rarely listen to music directly from the Mac so it was difficult to form an opinion, but the tracks sounded very good. To listen to the USB input, I transferred a mix from a CD into iTunes as an MP3 at 192 kb/sec. I plugged in the USB cable into my MacBook Pro, and when I opened the sound preference, Zodiac+ showed up as an output choice. I put the CD into a player connected to the AES input of the Zodiac+. I hit Play on both and then switched back and forth between CD and the iTunes MP3. This was not a fair comparison, but I thought the iTunes MP3 sounded pretty good, considering iTunes had thrown away 90 percent of the original data.

### Power Play

To test the Voltikus external power supply, my assistant helped me with some blind listening. Calling out A and B, she alternated the power supplies, each time playing the same piece

of music. Zodiac's Anti-Thumping Speaker and Ear protection guarded against pops as we freely switched the power connectors without having to mute or turn anything off. At first I wasn't sure if I was hearing much of a difference, but once I sonically latched on to the difference, I could identify it every time. The Voltikus tamed the perception of an enhanced midrange (mentioned earlier), making the output sound smoother while retaining the definition and depth in the bass. It also seemed to enhance the stereo field. The Voltikus definitely improved the sound of the Zodiac+.

Antelope says that its headphone amp is ultralinear and designed to work with a wide range of impedances. I listened to three different brands of professional headphones, and while I agree that Antelope's headphone outputs sound good, all three headphones exhibited a somewhat "sizzly" sound that I found a bit distracting.

### Wrapping It Up

To say that the Zodiac+ is "over engineered" is probably an understatement. It has more inputs than just about anyone would ever need. It has two headphone outputs; accepts voltages from 100 to 240 and outputs signal up to +26 dBu; will operate up to 192 kHz; and has a custom-designed USB implementation. It is loaded with technical innovations and built with audiophile philosophies such as separate power supplies and PCBs for its analog and digital circuits. Sonically, the Zodiac+ has a bold footprint—you will instantly hear a difference.

The Zodiac+ sound is very forward, tight and in-your-face. For that reason, I am not sure the Zodiac will replace everyone's favorite D/A, but I sure liked it on my mixes. III

*Erik Zobler is an L.A.-based recording engineer and producer.*

## USBPre 2

Precision Mic Preamps | XLR Outputs | USB Connected

**USBPre 2** is the perfect, portable audio interface to easily connect microphones, line-level signals, and digital sources to your computer (Mac, Windows, and Linux). Its microphone preamps give you the highest audio performance available in a USB-powered interface and include peak limiters, phantom power for condenser mics, and 24-bit /192 kHz converters. The **USBPre 2** also includes balanced line-level outputs to connect to powered speakers or large-venue sound systems. Use it in Stand-Alone mode as a mic preamp with analog and digital outputs, or as an A/D converter for digital sources back to analog. All in an extremely durable and lightweight (1 lb.) extruded aluminum housing.

**USBPre 2: The Only Box You Need.**

Reedsburg, Wisconsin | 800.505.0625 | **SOUND DEVICES** | [www.sounddevices.com](http://www.sounddevices.com)

## Blue Microphones Spark Condenser Microphone

### Clean Sound for Half the Cost of Its Siblings

Blue Microphones' Spark is a cardioid-only, FET-based studio condenser microphone that borrows its all-discrete and Class-A FET design from the company's more expensive models, yet sells for \$199. Spark retains the "lollipop" look for which Blue mics are known, and comes in a festive burnt-orange color with a custom shockmount, pop filter, wooden storage box, excellent recording guide and a three-year warranty.

Spark is 7.76 inches long, 1.77 inches in diameter and weighs 1.75 pounds. It is manufactured using minimal parts and screws to hedge against possible mechanical resonances. The 25mm-diameter capsule has a 4-micron-thick, nickel-sputtered diaphragm and is mounted in a soft-rubber isolating sleeve "tuned" to dampen its mass.

Spark has two switchable response curves that are toggled in/out by a flush-mounted pushbutton at the back of the mic called the Focus control, which changes the capsule's input driver rather than the signal output of the microphone circuit. With Focus switched out in the Normal mode, Spark exhibits a response curve characterized by a lift between 8 kHz and 12 kHz, a small presence bump at 1 kHz, a dip within the 200 to 400Hz area and a healthy boost centered at 90 Hz. With the Focus button in, the response is the same except for a roll-off starting just above 100 Hz.

### Spark In the Studio

I first used Spark for a male vocal recording and compared it (probably unfairly) to mics that cost from five to 16 times as much: David Bock's U195 (another FET mic) and a Neumann U87. I found that Spark held its own in comparison to these pro stalwarts. Spark offered a lot of out-

put—the studio's API console mic preamp gain was used minimally for most sources.

My male singer sounded big and warm on Spark with a similarly wide pickup pattern as the U195. The U87 sounded great, although it had a much "drier" sound with less of the room mixing in as compared to the other two. All three mics sounded good, and I would have no trouble recording a vocal for a demo, record or jingle with Spark.

It is essential to use the included wind-screen for most close vocals, but plan to supplement it with a secondary screen for singers who are big mic poppers. Operationally, the Focus button is a little tough to get at when the mic is in the shockmount, but I liked that switching between Focus modes requires no special tool and produces nearly no noise, making A/B comparisons possible while listening loudly.

I used Spark to record two different acoustic guitars and two ukuleles. I pushed the Focus button in to remove some boominess coming from a Goya gut-string guitar. I had Spark placed at about the 10th fret and, as I would do for any mic for this recording, boosted upper midrange and high frequencies to get this somber instrument to speak within a bright pop music track.

When recording a Collings D2H Dreadnought acoustic guitar and 4- and 6-string handmade Hawaiian Mele ukuleles, I had an all-tube signal chain using a Manley EQ500 preamp followed by a Tube-Tech CL1A compressor. I used no EQ and had the Focus button pushed in for the Collings, but switched Focus out when recording the ukes. I place the mic at the 12th fret for the guitar and closer to the sound hole for the ukes. With a good squash provided by the Tube-Tech, the sound was marvelous. I got a little room tone mixed in because I was no closer than about a foot away in all cases.

Another good application was for electric guitar. I have always loved condensers on guitar amps, but some are brash-sounding and can overload. Spark sounded wonderful when placed midway between the dust cover and the surround of the 12-inch speaker in a Fender



Spark comes in a wooden box and ships with a shockmount and pop filter.

Deluxe Reverb amp. My guitar player used a Strat and was impressed by the thick tone, even using the back pickup and treble boosting on the amp. Spark's diminutive size is a plus when recording instruments, allowing it to be precisely placed in any spot using a small mic stand.

### Spark Me Up!

Spark is a genuine "jack of all trades" working for male vocals, steel- and gut-string guitars and in front of a guitar amp. In these situations, I was able to get good to excellent results every time. III

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

### PRODUCT SUMMARY

**COMPANY:** Baltic Latvian Universal Electronics (Blue)  
**PRODUCT:** Spark  
**WEB:** [bluemic.com](http://bluemic.com)  
**PRICE:** \$199

**PROS:** Excellent all-purpose and inexpensive workhorse studio mic.

**CONS:** Focus button hard to access when mic is in shockmount.



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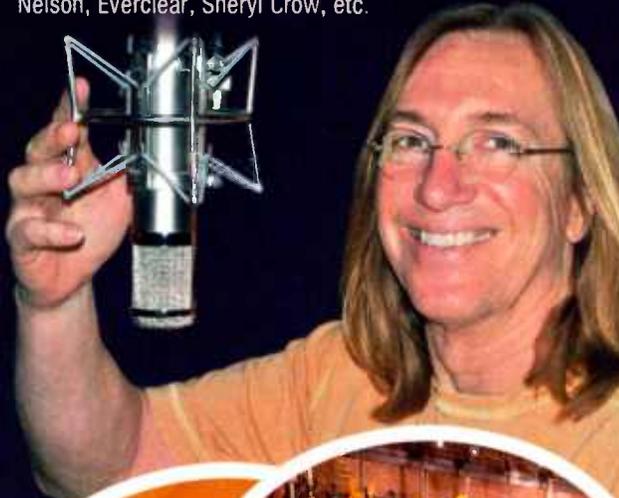
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## Jeri Palumbo

One day in the A1 hot seat led to a career in live sports audio.

*I saw you on the NAMM panel for "Women Behind the Console." That's a pretty good story of how you got started in live sports. Can you tell our readers?*

I was doing audio sweetening at a post facility in Charlotte [N.C.] in the mid-'90s. At that same post house, they had a show called *Race Day*, then on TNN. In those days, *Race Day* was a live news studio show. One day, the director and producer walked into my audio room, and said, "Can you mix our show on Sunday?" I replied, "I'm not a live broadcast mixer." What I didn't know at the time was every audio mixer in town had turned it down because it was a fast-paced "hot seat." That was also the first time I would hear the long-standing joke, "But audio is audio, Jeri!"

So I walked into the show green as green can be. I think there was an old 32-channel Mackie console. We had four stereo tape playbacks, three stereo music sources, CD, DAT and the DigiCart with Bernoulli disks. We had two live satellite remote feeds coming into the board so we had two site mix-minuses going on. I remember looking at the EICs in the studio, and asking, "What's a mix-minus?" [Laughs] Everybody was stone-cold silent. This wasn't even close to what I was doing in the other room. I somehow made it through that show with no major problems. I may have bobbed the mix-minus at first, but I overcame it. I think you have to screw up at least one mix-minus to figure out how it works. Every A1 has done it at least once, at least the one's I know. Anyway, that's how it happened—baptism by fire. Once you crawl into that hot seat and you make it through a pretty aggressive show, you make it to the network's call list because there's not a lot of people who like that sort of pressure. I believe my next offer was something on the upcoming Final Four.

**So what hooked you? The adrenaline rush?**

Yes, you have to be an adrenaline junkie and you have to love the craft. You are forced to think and troubleshoot on your feet. There are unimagi-



nable amounts of things you are pulling together in that room. I got seduced by the money, of course. [Laughs] That's what happens. But I do like the dynamics of live TV.

**What about on location?**

There's two types of gigs that go on in sports remotes. On same-set shoots, you set up the same day you go to air. You usually have crew call six hours before air and you have to build everything from scratch. Most of the NBA is like that. A lot of college football is like that. The NFL has a full set day before air date. Set days are always preferable as you have that time to ring everything out properly. On a set-shoot-day remote, you're starting from scratch under a tighter deadline. The only thing not wired is your jackfield going to your board in the truck, but you still have to patch it and everything else. You don't always know what your truck is going to be like or in what state of repair.

**Wireless is a big concern in your industry now.**

There's been so many changes to the spectrum, I'm not sure how they plan on regulating it, particularly in rural areas. I try to stay in contact with those who have written the white papers on this and who are in regular meetings with the FCC. I love RF, however. It's volatile and non-terrestrial, and yet technical. A lot of what I've learned in RF has come from James Stoffo. He is one of the best in the biz coordinating such events as the Super Bowl, NBA All-Stars and many more. And Dave Bellamy and Jason Bellamy at Soundtronics are also superb. But there's not many on that level.

**Sports seems to always be an innovator in TV technology. Why is that?**

I think you have to look at the number and type of viewers. Sports is a live, dynamic living thing. And the viewers are part of that living, breathing entity. That is also why I believe it serves cutting-edge technology so quickly. If you're going to try something new, you get instant feedback. People want to drive the audience passion even more. They want them to feel it more, they want them to hear it more, they want the action more.

**Is it getting more complicated?**

Oh my gosh, yes! That's why I don't like mixing as much! [Laughs] It's gotten way more complicated and the pay scale hasn't been commensurate with the added responsibility. I cannot reiterate what a critical role the A1 plays in TV. You are not just an engineer anymore; you are an EIC, a comms tech, fiber tech, transmission tech, you need to "wet" this SAP and "dry" this SAP and know when and where. You end up in charge of a lot of things that have nothing to do with your mix. In sports, the majority of the entire hub of transmission is in the hands of the A1.

**If it's a one-woman band, how do you pass on knowledge to the next generation?**

First, if you have a thirst for this business, contact somebody in your area that does sports and ask to intern. If somebody is there and is willing to help you, you can find them! The college circuit is a great place to learn. Plus, regionals can usually use the extra help!

Audio is not just audio when it comes to TV. There's ENG crews, there's communications, there is RF, submixing and then there is A1 broadcast mixing. If you want to be in this business, it is up to you. III

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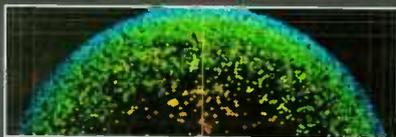
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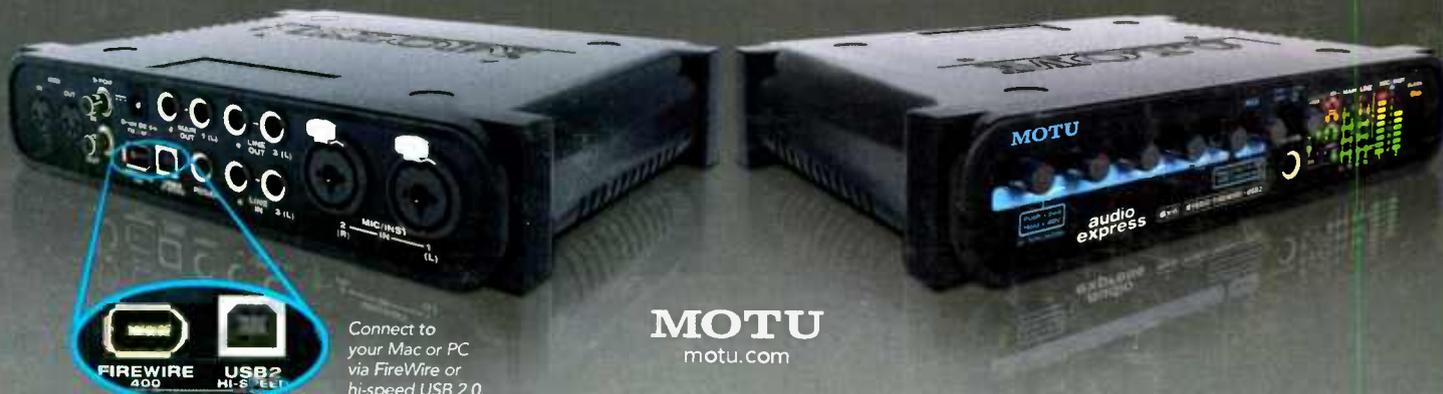
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