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# Chuck Leavell

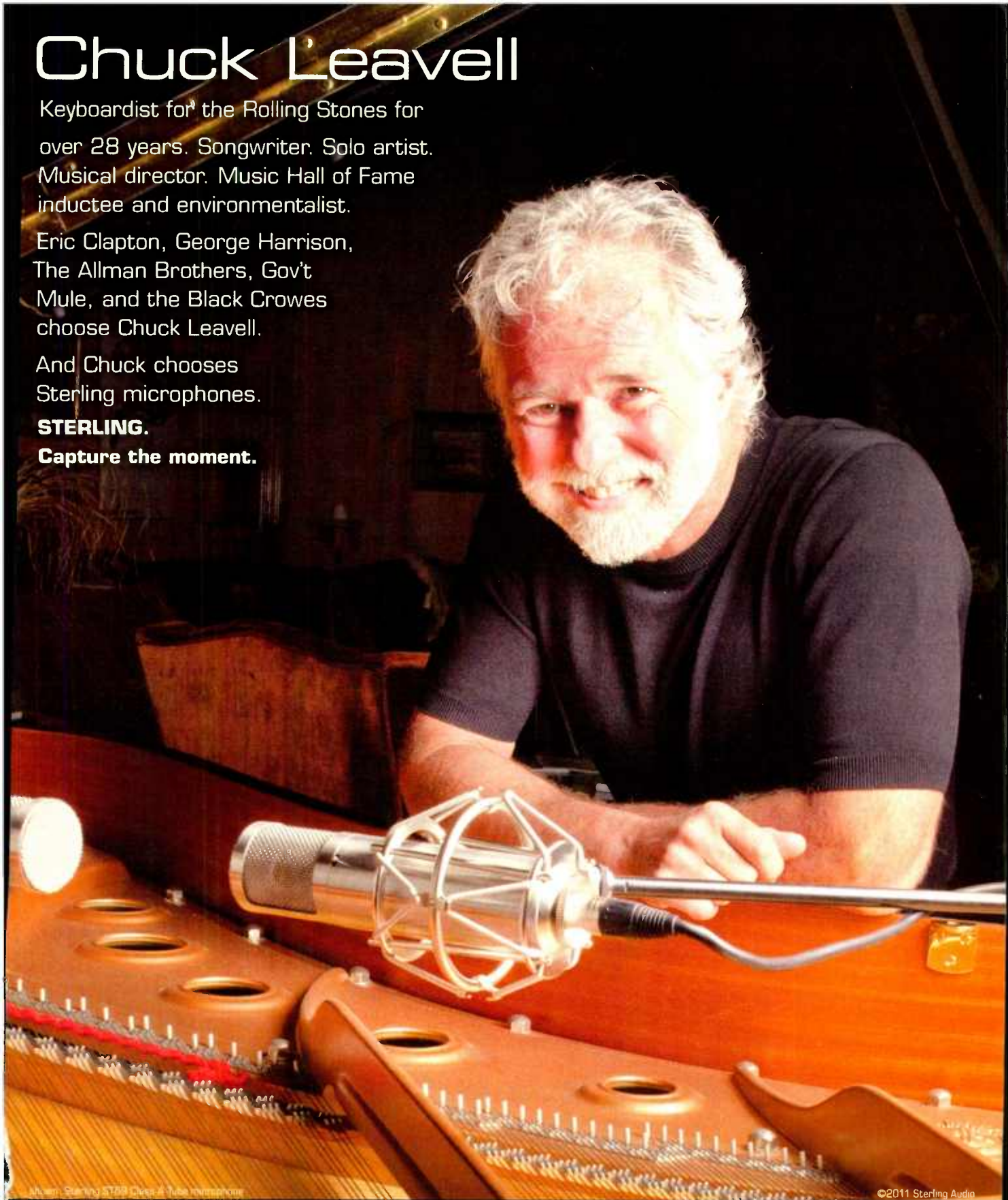
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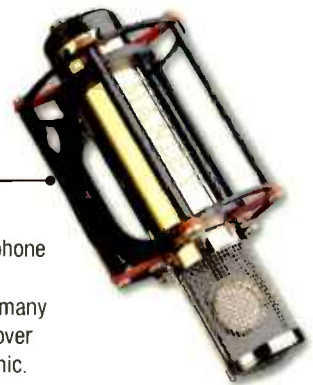
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## :: on the cover

On the Cover: Dave Snyder's Guilford Sound (southern Vermont) features a design by Francis Manzella of FM Design and an API Legacy board. For more, read the story on page 8. **Photo:** George Roos.





# It's Academic.

"The API Vision sets the standard for how a great audio console should sound. In an educational environment you need a well equipped platform that clearly lays out the signal path, structure, routing, eq and dynamics. The fact that it's also the best sounding console I've ever heard is...well, Visionary."

*Dave Maclaughlin, Executive Director of Audio  
New England School of Communications*



*48 Channel Vision, NESCOM, Bangor, ME*

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*Dan Pfeifer, Recording Industry  
Middle Tennessee State University*

"The best way to teach sound quality is to provide students constant exposure to the extraordinary dynamic range and gorgeous frequency response for which API is famous. When you provide that – not just with outboard gear, but throughout the entire console, the students truly get it. They just can't miss it!"

*Alex Case, Sound Recording Technology  
University of Massachusetts Lowell*

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## Change, Challenge, Opportunity

**D**riving into work the other day, the first week of February, I caught a KCBS radio report on double-digit percentage stock drops at McClatchy Media and Warner Music. Traditional ad buyers weren't purchasing at the start of the year, and apparently neither were consumers. The story veered toward doom and gloom and then it was gone, quickly followed by traffic and weather. It almost didn't register. It felt a little like background chatter—same song, different players. And it's been going on for nearly a decade. First Napster, then Google ads. Then YouTube and streaming and subscription vs. download. Media budgets slashed, prerecorded music not selling. It's scary because it's true.

Then I got to work and prepped for that morning's Webcast on Wireless Theater (available at [mixonline.com](http://mixonline.com)), sponsored by Lectrosionics and presented by Suzanna Bailey, director of audio at America Conservatory Theater. It wasn't text on a page, but it was a story. A good one that reached the people who most wanted to view it directly. And there were advertising dollars attached, so *Mix* benefited by what we have learned to call an alternative revenue stream. Media has to evolve, same as everybody else.

Right after the Webcast, I got a call from Allen Sides, thanking me for the February cover shot from Ocean Way, with Josh Groban. Josh sells a lot of records the old-fashioned way, but he's also putting himself out there in the larger mediasphere. He had performed a hilarious sendup on Jimmy Kimmel, singing the tweets of Kanye West, and he and Allen had just returned from New York where they did a live Webcast, direct to fans, from Avatar Studios. Big audience. Loyal audience.

Later that same day, I received an e-mail with a link to Echo Mountain Recording's Facebook page, where I found that more than 30,000 people had clicked to watch a Webcam stream of Dierks Bentley live in the studio, 24/7, for five days. (The link itself was actually to Dierks' site if you want to go find it.) Fifteen songs tracked in a work week, writing and recording live with producer Jon Randall Stewart and engineer Gary Paczosa. Fans chatting among themselves. The ultimate access to the studio. Promoted through Facebook.

All this in one day, and it got me to thinking about the old saw that with every challenge or every change comes opportunity. It's been particularly relevant in the *Mix* office of late because the week before, we, along with *EM* and *Sound & Video Contractor*, were sold to NewBay Media, publishers of *Pro Sound News*, *EQ*, *Pro Audio Review*, *Guitar Player*, *Keyboard* and many other magazines and sites. It's not the first time we've been bought, but it promises to be a most exciting time in the audio press, and we are thrilled to be part of a group that knows professional recording.

But there are challenges, too, as there were a few talented people who won't be making the move with us: our art director Isabelle Pantazis, publisher Shahla Hebets, the extremely talented *EM* editor Mike Levine and a couple of *Mix* editors near and dear to my heart: Barbara Schultz, a talented writer, superb editor and good friend who anchored our music and studio coverage these past 18 years, and George Petersen. What can I say about George? I've spent half my life greeting him each morning at 6400 Hollis St. When I joined in 1988, he was a legend, and when I watched him pack a box last week, he was even more of a legend. He taught me the ins and outs of recording, and he was always gracious with his knowledge. He remains a dear friend, and I rest easier at night knowing that we haven't seen the last of George.

  
Tom Kenny  
Editor

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BACK ISSUES: Back issues are available for \$10 each by calling 866/860-7087 or 818/487-2020.

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

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CORPORATE OFFICE: Penton Media Inc., 249 West 17th St., New York, NY, [www.penton.com](http://www.penton.com).

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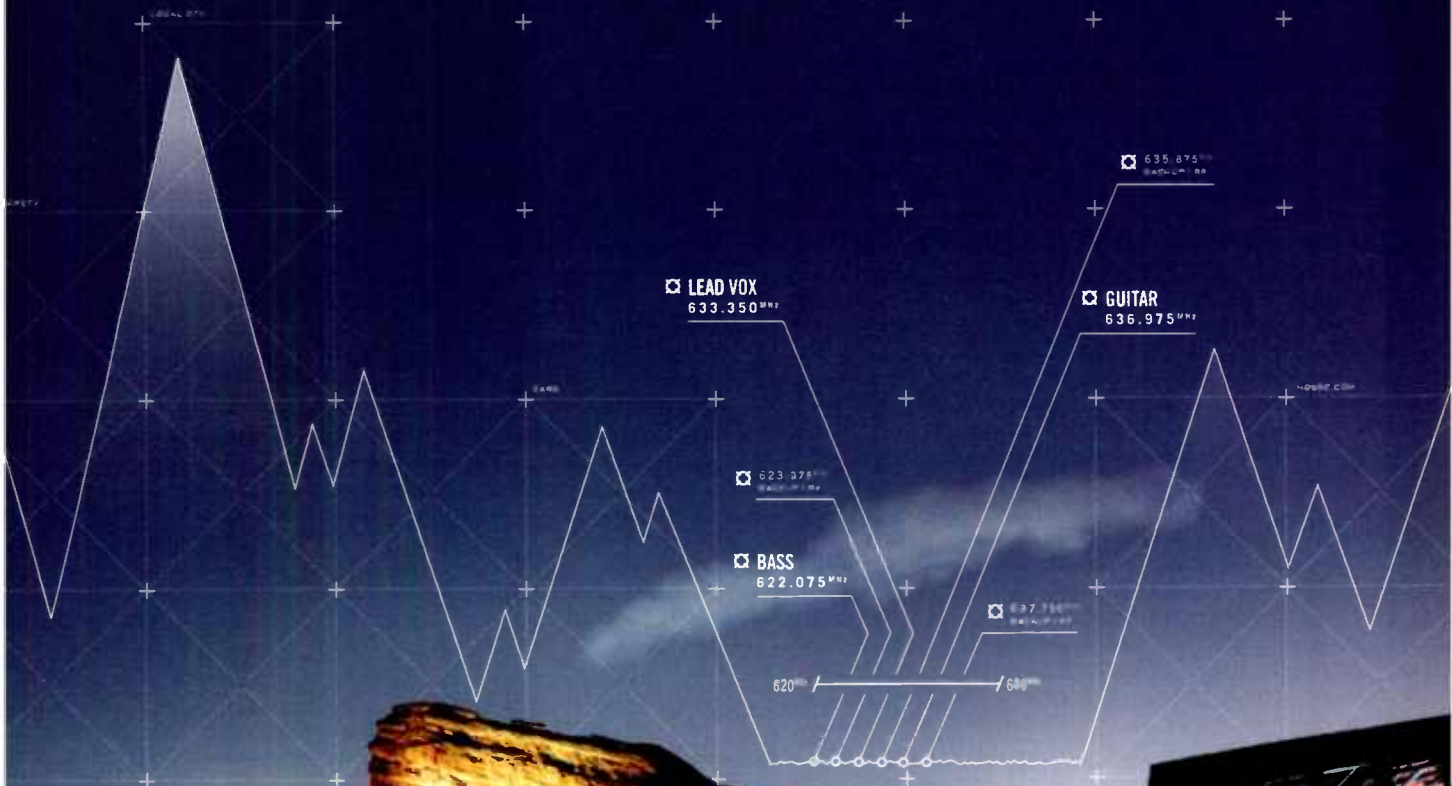
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World Radio History

## Guilford Sound

PHOTO: GEORGE ROOS



The tracking room can hold a big band or a small orchestra as there's a lot of chamber music in the area.

**G**uilford Sound, Dave Snyder's new studio in southern Vermont, is at once a blast from the past and the wave of the future. On the one hand, it's the kind of facility almost no one builds anymore—ground up, big tracking and control rooms, multiple iso rooms and even an echo chamber in the attic—but it's also among the most environmentally friendly studios *Mix* has featured, and its complement of acoustical finishes and equipment blends the best of old and new.

Snyder is the former owner of mix room Jarvis Studio (Susan Tedeschi, Los Lobos, Hal Wilner) in New York City. When he and his wife, Sarah, decided to move their young family to 300 wooded acres in Vermont, their plan included building a studio as well as their new home. It's a lucky man who can afford to build his dream facility in an idyllic location, and to have Francis Manzella of FM Design help create it.

"I'd heard a bunch of mastering rooms [that Manzella designed for, including] Sterling Sound—also Stratosphere [Sound, New York City]—and I just loved the treatments he did," recalls Snyder, who says that one of the main

things he wanted from the new design is "a lot of space. I was in a band called Ruth Ruth, and we worked in a bunch of places that had cramped control rooms. I was really excited to be able to build from the ground up—to have a large enough control room for people to be able to hang out in the back of the room and not be on top of each other."

### Inside the Control Room

The control room Manzella designed is 27 feet deep and 24 feet across at its widest point. It's an ergonomic setup where Snyder can roll easily between the API Legacy console that came home with him from Jarvis, his Pro Tools HD rig (with 48 channels of Mytek conversion) and the custom racks of outboard gear located behind him (Pultec EQP1As, Neve 32264s, Neve Melbourne Sidecar with Flying Faders, a rack of original Neve 1073s rebuilt by Matt Marinelli of Coral Sound and more). And there's still plenty of room for musicians and producers to hang out in back.

Adjacent to the control room is a machine room that houses—among other things—two Studer A827 tape machines. "They have virtu-

ally no hours," Snyder says. "Somebody bought them at a studio right at the end of the analog Golden Age, and they just sat there. Matt Marinelli rebuilt the power supplies so they're as good as new."

Technical consultant John Klett and Marinelli created all of the wiring/infrastructure within the facility—the unglamorous, but crucial, part of studio design: "I've been working with Coral Sound as my go-to for prefabricating complex wiring and interconnect systems since the mid-'90s," Klett says. "On this project, I did specify some different wire for certain parts that we normally use. We use enormous amounts of Mogami cable. No one stocks enough to fill our orders these days. But we're also looking at other products all the time. We use Gepco cable for specific things, and after testing, listening and comparing, I decided to go with their X-Band multipair mic cable for the fixed-in-place mic ties. This facility is physically large and some of the cable runs are quite long so I wanted to look at and review steps we could take to reduce potential loss in the mic runs—there is no lossless cable.

"On this project, as with many," Klett con-





Pictured above, from row, from left: contractor Dave Ross, owner Dave Snyder, Coral Sound's Matt Marinelli and Tech Mecca's John Klett. Back from, from left: Guilford Sound staffer Bill Esses, studio designer Francis Manzella and FM Design architect Bill Seegmuller. At left: Numerous RPG acoustical treatments were used throughout, including this room.



PHOTO: GEORGE ROOS

tinues, "I provided overall guidance and specified equipment and specific aspects for the power conditioning/isolation, technical Earth systems, power and technical isolated ground distribution. There are little details about this that you have to pay attention to, especially within large systems. No matter how awesome the gear and wiring are, it all rests on the power and ground systems. Digital studios don't escape this—the problems just manifest differently. Guilford is a hybrid, having both extensive analog and large digital workstation components."

### Varied Acoustics

"On the performance side of things," Snyder says, "I really wanted to have a room that could accommodate a big band or a small orchestra. There's a lot of chamber music in this area;

the Marlboro Music Festival [Marlboro, Vt.] is a well-known chamber music festival that has been around for 50-plus years, and it brings a lot of notable musicians from that world to the area. I knew I wanted to pursue those clients, so we built our studio to be big enough to accommodate those groups comfortably, but there's [still] plenty of isolation for us to work with amplified music."

Manzella approached the recording rooms with the idea of providing varied acoustics to enhance different types of instruments. The main recording room features a live side/dead side design, and the iso rooms offer a variety of sonic environments: "All of the iso booths are fairly unique in their acoustics," Manzella explains. "There's a very dead, smaller-sized booth adjacent to the control room, which is a great vocal booth; and there are three other rooms that open off of the main room, and you've got good sightlines between them all, as well as sliding doors or windows to the live room. There's a very diffuse room. There's what we would call a medium room with a slate floor—there's wood flooring in most of the bigger rooms—and another booth that has a tighter sound with a carpeted floor, and another dead-to-medium room. You can also vary the sound by close- or far-miking, opening or closing the sliders; there's all sorts of possible variations."

As he often does, Manzella made use of numerous RPG acoustical treatments in these

rooms, as well as "a very large, maybe the largest, custom diffuser at the rear of the control room," he says, "which is great because you get diffusion down to much lower frequencies, and in the diffuse iso booth, we did a custom overhead wooden skyline diffuser."

Recently, Snyder hosted engineer Lawson White and the So Percussion group, recording a piece written for them by composer Steve Mackie, and after the sessions, Snyder sent Manzella this e-mail message: "[We had] marimba in the live room, drums in Iso 3, percussion in Iso 4, steel drums and vibes in Iso 2. Steve, a veteran studio patron who attended the session, said he's never heard the low end of marimbas sound so huge and so tight as it sounded in your live room through your amazing [Griffin] speakers...It was fun to watch the giddy reaction to all of the amazing sonics created."

### Green Design, Green Power

An equal source of pride for Snyder is the green footprint of his studio. All of the wood used for the project construction, furniture and interiors was milled from trees cleared on the studio site. The studio also uses three alternative energy sources: solar power via roof panels, ground-source heat pumps for HVAC and a wood-fire boiler system (also fed by firewood from the property) that heats the Snyders' home and studio. "It's got very low emissions," Snyder explains. "You pack it full of wood and there's a fan that blows everything down into this catalytic converter chamber that then injects it with a second input of oxygen, and it combusts everything. It burns 90 percent of the particulate, so when you look at the chimney, it's just vapor coming out."

Also representing the studio's commitment to green building is its extensive use of LED lighting and natural light: Almost every room has windows to the beautiful wilderness that surrounds the studio. "We're very close to civilization," Snyder says, "but when you're up here, you feel like you're in the middle of paradise. We're 10 minutes from a town [Brattleboro, Vt.], from 24-hour stores, only two hours from Boston, three-and-a-half hours from New York, but you get that retreat aspect—like you're in the middle of nowhere." ■

Find more photos of Guilford Sound at [mixonline.com](http://mixonline.com).

## Farewell to a Friend

On January 31, 2011, the professional audio industry lost a dear friend and colleague when Bruce Jackson died in a single-engine plane crash near Furnace Creek, Calif., in Death Valley National Park. He was 62. We are especially saddened by this tragic news, as Bruce had been part of our Clair "family" for more than 30 years.

We came to know Bruce back in 1969 when he introduced himself to Clair Brothers co-founder Roy Clair during Blood Sweat and Tears' Australian tour. Roy noticed quickly that the young Bruce was smart, knowledgeable and extremely interested in everything about the audio industry, and invited him to visit the next time he was in the U.S. Bruce would eventually accept the offer—not only to visit, but to work for the company.

"Bruce and I became instant friends and had a lot of great times both professionally and personally," Roy recalls. "He had the ability to think through problems and always come to a resolution. Bruce brought us a fresh perspective and some cutting-edge ideas while we were still a young company, which were, quite simply, integral in setting us and our systems apart from others in the business. We were fortunate to have had someone like him on our team."

He worked for an impressive list of artists, providing front-of-house duties for acts that included Elvis Presley, Fleetwood Mac, Bruce Springsteen and Barbra Streisand, and earning him Grammy®, Parnelli and TEC Awards. The respect he achieved in the industry was unmistakable when he was named audio director for the Sydney 2000 Olympic opening and closing ceremonies.

Jackson was also a pioneering force in digital audio, helping to launch the Fairlight CMI, followed by his founding of Apogee Electronics. After selling his share of Apogee, he helped lead a co-development project between Clair Brothers and Lake Technology, a partnership that resulted in the Clair iO digital loudspeaker controller. With Lake and business partner Dave McGrath, he would go on to develop a commercial version, the Lake Contour. When Lake was acquired by Dolby Laboratories in 2004, he became a Dolby employee, helping to bring the Dolby Lake Processor to the market and establishing the company as an important player in the world of live sound.

"We were incredibly fortunate to witness first-hand how Bruce's talent and abilities were able to literally change the whole live event experience," says Troy Clair, Clair Global president. "Our heartfelt condolences go out to Bruce's family; he was an incredible friend and will be dearly missed." For more on Jackson's life and contributions to the audio world, see page 12.

*The Family at Clair Global*

## Best Practices

Record Plant president Rose Mann Cherney shares a letter she received in response to her "On the Cover" interview in *Mix's*

November 2010 issue:

Rose, I felt compelled to write to you. I'm a senior revenue manager for a Minneapolis-based lodging franchise company. I've worked in the hotel

industry for 13 years in a variety of capacities. I live and breathe a job that rides the roller coaster of a volatile industry that depends on

customer satisfaction to the core. My connection to sound and music comes from my husband, who works at Orchestra Hall in Minneapolis as the assistant sound engineer and is a partner in Pi Audio (themiclocker.net), a high-end microphone rental company.

It was very refreshing to read an article outside of my industry that sung the praises of [what] we teach our employees at my job each and every day—from hiring quality employees, to training them, to the treatment of your customers. I plan to share this article with my hotels because you are someone outside of our industry doing [what] we strive for each and every day. I applaud

your hard work and can only imagine what you have overcome being a woman in such an industry. I feel you should know the impact of your efforts beyond the studio walls.

*Jennifer Mooney  
CSM Lodging  
Minneapolis*

## The New World of D.I.Y.

I read Sylvia Massy's article in the October 2010 issue ("Gear

Stories: The Spirit of American Gadgetry"). It seems she wrote the best story she could without doing any research. That's too bad because it is a huge disservice to your readers not to mention what is going on today in the D.I.Y. audio world online.

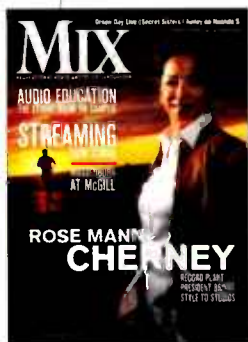
If she had done her homework, she would have discovered that today is the golden age of D.I.Y. audio. And I'm not talking about the D.I.Y. synth guys like PAiA. I've built my own mic preamps, tube amps and effect pedals from scratch and from commercially available kits. I've been able to do this with a minimal electronics background because of the numerous Web forums that offer guru-level support to anyone willing to read, learn and experiment with electronics.

Heathkit has been out of business for more than 20 years. Radio Shack is now called The Source and sells phones. D.I.Y. audio lives on the Web forums now, and the creative creations from builders around the world are the inspiration for tomorrow's commercial products. Countless times I've seen an innovation in the D.I.Y. world appear on a commercial product one or two years after the D.I.Y.ers post their creation on a Web forum.

It's great if Sylvia wants to review the ancient past of D.I.Y. audio. We all need to know our roots. But the current D.I.Y. trends are what should be important to your readers and there is more out there than just D.I.Y. analog synthesizers.

*Dave Smith  
Radial Engineering*

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# CURRENT

compiled by Sarah Benzuly

## BRUCE JACKSON

Live sound pioneer Bruce Jackson was killed on January 29, 2011, when the single-engine plane he was piloting crashed near Death Valley National Park. Details were not available as of press time, but the loss of Jackson is reverberating in the live sound world, as he helped shaped this industry.

At an early age, Jackson was intrigued with electronics and sound. In his first SR venture, then 18-year-old Jackson co-created JANDS, a lighting and sound rental firm with an electronics design and manufacturing division, along with his partner, Phil Storey, in their native Australia. There, Jackson helped build column P.A.s, guitar amps, power amps and simple mixers. "We even made the printed circuit boards," Jackson recalled in an interview with *Mix* in 2005. "It was a great experience." Three years later, Jackson sold his share in JANDS, traveled to the U.S. and joined a young Clair Bros. Audio (now Clair Global).

While at Clair, Jackson mixed for many Elvis Presley tours, designing and building equipment during his down time. Jackson helped develop the first hanging sound systems and a sophisticated mixing console that folded out of the case and was the first to use parametric EQ. This board became a Clair mainstay for more than 12 years.

After the passing of The King, Jackson hooked up with Bruce Springsteen from 1978 to 1988.

Jackson remembered: "I hacked into Bruce's favorite guitar to install special waterproof pickup selector switches and an electronic buffer to drive his 100-foot-long guitar cord so there were highs left at the end. In places with poor acoustics, Bruce supported hanging curtains and other acoustic improvements most acts would never consider." Jackson "founded" other companies in-between tours, including promoting and setting up distribution for Fairlight's first music sampler.

Jackson's next venture was creating Apogee Electronics, where the company was the first to create Soft Limit, low-jitter clocks, UV22 dither, reference-standard AD/DAs and more.

In the early '90s, Jackson began working with legendary performer Barbra Streisand, who, at that time, hadn't toured in more than 30 years. But while on tour, Jackson missed "playing with digital audio" and so suggested to Clair Bros. that they work together. He pulled friends Dave McGrath, founder of Lake Technology, and Ed Meitner into a partnership with Clair Bros. Audio that was named Clair Technologies LLC. "We wanted to be able to create any-shaped EQ curve with non-minimum phase response. I always felt that the basic



parametric EQ with frequency, shape and boost/cut controls was too limited. The shape of the classic parametric EQ spills over into neighboring areas you don't want to affect, regardless of chosen shape; and why should you be stuck with just a bell curve when it would be great to EQ whole areas of the spectrum as one?" And the Clair iO processor was born. Lake Technology went public and purchased the proprietary technology from Clair LLC.; in 2005, Dolby Laboratories acquired Lake.

"It seems the more you learn, the more you realize what you don't know," Jackson said. "The more you dig, the more you find needs attention. A true perfectionist's dilemma."

## Register Now

McNally Smith College of Music (Minnesota) is again offering summer session workshops in jazz, hip-hop, guitar and music business designed for students ages 13 to 19. Early Bird pricing is through March 31, 2011. Summer Workshop Housing will be available in McNally Smith's new dormitory, giving students a taste of the residential college experience with 24/7 college counselors providing activities such as jam sessions and evening concerts to recording opportunities and other social scenes. To register, visit [summerworkshops.mcnallysmith.edu](http://summerworkshops.mcnallysmith.edu).



## Mark Your Calendar



The 131st AES Convention will be held October 20-23, 2011, in New York City. Watch this space for more details.

The AES Nashville chapter's Audio Masters Benefit Golf Tournament will be held May 26 and 27, 2011, at the Harpeth Hills golf course. The event benefits the non-profit corporation created by the organization, the Nashville Engineer Relief Fund. For additional information, contact Nicole Cochran at [nicole@nicoftimepr.com](mailto:nicole@nicoftimepr.com)



# Industry News



Mark Posgay

**Blue Microphones** (Westlake Village, CA) taps Martin Wolf as VP of manufacturing and operations...**Lab X Technologies** (Rochester, NY) promotes Chris Pane to VP of business development...**Crown Audio** (Elkhart, IN) changes to senior-management team: John Fitzgerald, general manager amplifier business unit; John Batliner, VP of sales; and Matt Bush, senior director of operations...New U.S. sales director at **Harman Professional** (Elkhart, IN) is Mark Posgay...Yves Rathe joins **Sennheiser Canada** (Montreal) as director of technical services...New to **Wohler** (San Francisco): Larry Enroth, Western regional sales manager, and Keith Andoos, Eastern regional sales manager...Semi Tehrani, hardware design engineer, joins **Renkus-Heinz** (Foothill Ranch, CA)...New distribution deals: **KK Audio Labs** (Huntington Beach, CA) appoints Tandem Sales & Marketing for Southern California and southern Nevada; and **Aviom** (West Chester, PA) names Studiotec as distributor in Finland; Peavey (Meridian, Miss.) taps Kyoritsu Corporation for Japan sole distribution; and **TransAudio Group** (Las Vegas) will distribute Sonodyne loudspeakers in the U.S.



From left: Skip Lievsay, Greg Orloff and Byron Wilson

## SoundWorks Collection Update

*True Grit* is not your typical Western movie. It is a tale about some nasty, brutish times that has been adapted by directors Joel and Ethan Coen from the parodic Western novel by Charles Portis. The sounds of the Wild West include tough-talking characters, vicious animals and harsh environments that play a large role in the telling of this story. Helping craft these duties include longtime collaborators sound re-recording mixer and supervising sound editor Skip Lievsay, sound re-recording mixer Greg Orloff and dialog/ADR editor Byron Wilson. The 60-minute discussion was moderated by Bruce Carse.

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  - *Studio Monitors*
- Coming Soon: *Recording the Band*, more!  
Available exclusively at [mixbooks.com](http://mixbooks.com)

## Studio Unknown Update

What do a classically trained pianist and a highly decorated hip-hop mixer and engineer have in common? In the case of the talented Andrew Dawson (Kanye West Ne-Yo, Lil Wayne, Jay-Z)—everything. Check out the March 2011 edition of *Studio Unknown*/PopMark Media's "Confessions of a Small Working Studio" to find out how the Grammy Award-winning mixer/engineer has piloted his way to success.



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# BUILD YOUR RIG

## TWO SETUPS TO FIT YOUR BUDGET

By Kevin Becka

One of the best things about being an audio pro is shopping for gear. This is especially true in 2011 when the options are plentiful, prices are reasonable and the quality is high. We came up with the ultimate audio computer rig in two price categories: \$10,000 and \$25,000. We are taking for granted you already have a computer, so we're just concentrating on the DAWs, plug-ins and hardware needed to get audio in and out of the box. Prices are mostly street value and offered with a range of options so you can build your own virtual dream rig to custom-fit your budget, workflow and must-have features. So get out your calculator and enjoy concocting your ultimate audio playstation.

### \$10,000 Dream Rig

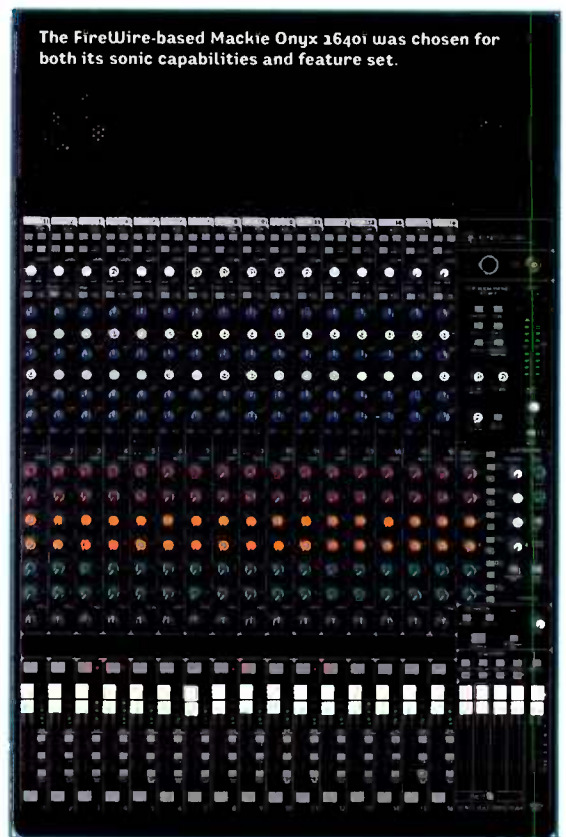
In this price category, although you have to be careful with your money, there are some solid options that bring pro features within the range of the tighter studio budget.

There are a lot of freshly upgraded and affordable DAWs in the \$10,000 price range including the new Cakewalk (cakewalk.com) SONAR X1 Producer Edition (\$399, reviewed on page 52), Apple (apple.com) Logic Studio (\$499), Steinberg's (steinberg.net) Cubase

6 (\$599) just released at NAMM, Avid (avid.com) Pro Tools 9 (\$599) and EM 2011 Editor's Choice-winning MOTU (motu.com) Digital Performer 7.2 (\$795). All of the above sport a wide range of features found in more expensive DAWs while offering unique toolsets aimed at performers, composers, mixers and remixer. For instance, Logic Studio offers not only the Logic Pro 9 DAW, but also MainStage 2, Soundtrack Pro 3 and the Waveburner, Impulse Response and Compressor utilities, putting it high on the bang-for-the-buck list. MOTU's Digital Performer won its EM accolades for solid performance, workflow upgrades, custom design features and its range of included instruments, plug-in processors, deft MIDI editing and film-scoring features. The field is broad here, and doing your homework may get you a DAW that fits your needs all-in-one rather than having to own a few to get the job done.

Plug-ins are always a consideration no matter your DAW of

choice and it's important not to clog up the resident computer's DSP. For this reason, I've chosen some afford-



The FireWire-based Mackie Onyx 1640i was chosen for both its sonic capabilities and feature set.





able OB plug-in accelerators. The FireWire-based Duende MINI (\$1,799) studio pack from SSL ([www.solidstatellogic.com](http://www.solidstatellogic.com)) includes a 16 to 32-channel upgrade, plus the Bus Compressor, Drumstrip, Vocalstrip, X-EQ and X-Comp plug-ins. The new UAD-2 Satellite DUO Flexi (\$1,199) from Universal Audio ([uaudio.com](http://uaudio.com)), also a FireWire box, comes bundled with the LA-2A and 1176LN compressor/limiters, and the Pultec EQP-1A EQ plug-ins, plus a \$500 voucher to buy more UAD plug-ins from a sizable list that should fit anyone's processing

needs. If you have the heart of a gambler, you could go with the discontinued but now-heavily discounted Waves APA 32 or APA 44 audio processing accelerator from Waves ([waves.com](http://waves.com)). I found an APA 32 for \$99 at Guitar Center (formerly \$800) that runs six IR-1 reverbs or nine linear-phase equalizers or 12 C4 multiband parametric processors at 44.1 kHz. The APA 44 is discounted to \$1,350, boasting 30-percent more plug-in power than its little brother. Keep in mind, these boxes are no longer supported by Waves beyond Version 5.9 so

you could never upgrade, but for \$99, this is a bargain-hunter's dream. I'm throwing another \$1,000 into this basket for other plug-ins I could purchase from a range of companies like McDSP, Waves, SoundToys, Nugen Audio, Sonnox and more.

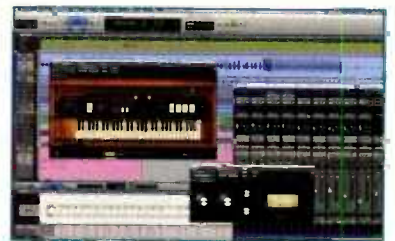
There are a lot of affordable preamp/converter options on the market, allowing me to get into my DAW cleanly and in style. To best optimize the remaining dollars, I think it's important to have a rack of at least eight solid, affordable preamps, then purchase at least two

## build your rig

channels of boutique signal path for vocals and other A-list overdubs that will sit high in the mix. For my front end, the win in the value category goes to the FireWire-based Mackie (mackie.com) Onyx 1640i, both for its sonic capabilities and feature set. It offers 16 phantom-powered preamps, a full mixer with EQ, six sends, four stereo returns, talkback, grouping and more—all for \$1,499. If you don't need all that firepower, you could save some money and go with a simpler 8-channel FireWire pre-amp like the MOTU (motu.com) 8pre (\$599),



The API 500-6B (left) provides six slots and an internal power supply. Avid Pro Tools 9 (right) is just one of the many DAWs on the market to satisfy the \$10,000-budget rig.



M-Audio (m-audio.com) ProFire 2626 (\$699) or the Lightpipe-only PreSonus (presonus.com)

DigiMAX D8 (\$399) or Focusrite (focusrite.com) OctoPre MKII (\$499). For boutique I/O options, there's no beating a 500 Series rack for versatility and future upgrades. It all starts with the empty rack to hold our modules. The API (apiaudio.com) 500-6B (\$425) gives me six slots and an internal power supply. Or, I could go with the Radial Engineering (radialeng.com) Workhorse 5000 (\$1,399) that holds eight modules and includes an integrated summing mixer. As for modules, the world is my oyster: There are many companies making 500 Series-compatible units. They're generally priced between \$250 and \$800, with some companies offering D.I.Y. bargains below that. Look at Five Fish Studios (fivefishstudios.com) and DIY Audio (diyaudio.com) and diyrecordingequipment.com for some great projects and options.

At \$10k, it's about the picking and choosing. But just because your dollars are limited, it doesn't mean you can't have a great-sounding rig. By starting with the choices above and doing some careful homework with your personal workflow in mind, you can find the best combination of gear within your budget to get the best sound possible.

## \$25,000 Dream Rig

Thanks to the ever-expanding range of affordable audio products, creating the ultimate computer-based audio rig for \$25,000 offers a range of choices that only the pickiest pro would scoff at.

For a DAW, I've chosen Pro Tools 9 HD Native (\$3,495). This offers all of the features expected of a world-class workstation, plus the ability

The SSL Duende MINI includes a 16 to 32-channel upgrade, plus numerous plug-ins.



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At the \$25,000-budget level, the Universal Audio UAD-2 Satellite QUAD Omni Version 5.7 offers 50 UAD plug-ins running on the latest and fastest DSP chips.

to operate with a range of I/Os from a number of manufacturers, offering unsanctioned, “back door” Pro Tools compatibility. Pro Tools 9 HD Native works exactly as a TDM system excluding TDM plug-ins and Pro Tools 9 TDM’s HEAT (Harmonically Enhanced Algorithm Technology). So I don’t miss out on any virtual flavor, I’ve opted to buy Crane Song’s (cranesong.com) Phoenix plug-in (\$450) designed by Dave Hill, who was brought in by Avid to collaborate on the design of HEAT.

Speaking of plug-ins, I’ve got plenty from

which to choose, starting with the new UAD-2 Satellite QUAD Omni Version 5.7 (\$4,499) from Universal Audio. The Omni bundle offers 50 UAD plug-ins running on four of the latest and fastest DSP chips, providing me with glitch-free processing that won’t tax the computer’s internal DSP. In addition, UAD-2 Satel-

ite is FireWire-based, meaning it doesn’t eat up valuable PCIe slots reserved for my Pro Tools card and possible future system expansion. For processing inside the box, I’ve opted to buy the Waves Diamond Native bundle (\$2,500) and the company’s Tony Maserati Collection (\$375) to add some star-engineer personality to my virtual processor package. For more virtual emulation, I’ve chosen the Slate Digital (slatedigital.com) Virtual Console Collection (price TBA but I’m guessing for less than \$500). It comprises two plug-ins, the Virtual Channel and Virtual Mixbus, each allowing you to choose from one of six modeled consoles. This gives me the power to sculpt my tracks’ sonic signatures in a nearly endless number of ways. Rounding out my plug-in collection is SoundToys (soundtoys



For I/O selection, the Lynx Aurora 16 provides 16x16 analog and 16x16 AES/EBU.



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**Greg Calbi @ Sterling Sound**

*The National, Cold War Kids, Antony and the Johnsons*

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## build your rig

.com) Native Effect Bundle (\$495), which includes the Decapitator, PanMan, EchoBoy, FilterFreak and more. Lastly, I'm buying the McDSP Emerald Pack Native V. 5 (\$1,495). This bundle offers the 6030 Ultimate Compressor, Analog Channel V. 5, Channel G V. 5 and much more.

I'm not neglecting the all-important I/O department; rather, I choose to go with a 16x16 system that leaves room for future expansion, should I need it. The most cost-effective for starters is the Lynx Aurora 16 (\$2,995, plus \$360



When thinking about analog summing, keep in mind the Dangerous Music 2-Bus.

Pro Tools expansion card). The system offers 16x16 analog and 16x16 AES/EBU. Other more pricey options include Avid's HD IO (\$4,995),

which has 16x16 analog I/O and two channels of AES/EBU I/O (supports 192kHz single-wire), two channels of S/PDIF I/O and eight channels of ADAT I/O (supports S/MUX II and IV). Next up the ladder in price is the Apogee Symphony Chassis (\$1,695, plus \$1,995 for 16 analog in, plus \$1,995 for 16 analog out, plus the \$530 X-HD card for Pro Tools—bringing the total for this option to \$6,215). Still higher are similarly spec'd converters from Mytek for \$7,785, leaving little money for necessary extras (which I'll mention in the next paragraph), but the option is there should you want to go high end.

Analog summing is the ultimate outside-the-box extra for discerning mixers, and I've got a range of products from which to choose. The Dangerous Music (dangerousmusic.com) 2-Bus (\$2,649) offers 16 inputs, stepped attenuator output control and is fully linkable with 2-Bus, 2-Bus LT and MixerDAW Studio for later expansion. The Neve 8816 (\$3,695) analog-summing mixer includes 16 input channels offering level, pan, cut and cue controls, plus +15dB gain range accommodation for both -10dBV and +4dBm input levels. The SPL (spl-usa.com) MixDream (\$3,499) analog summing mixer offers adjustable insert level, stereo expansion control with infinite gradation, an adjustable analog peak limiter and adjustable outputs with added in/out switching of Lundahl transformers. For tube-lovers, there is the Tube-Tech (tubetech.com) SSA-2B (\$4,275) stereo summing amplifier. The unit can handle 10 stereo channel inputs, with the first two stereo ins switchable to function as four mono inputs. The outputs are balanced with fully floating transformers, and there are 23-step gold-plated output gain controls for level matching.

By picking and choosing your personal favorites from these lists and balancing the budget across the other choices, you can put together a killer system for \$25,000 that is upwardly expandable and able to handle a range of input and output needs for tracking, mixing and mastering. III

# Sonnox ELITE

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## Oxford TransMod

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# KEEPING IT IN THE BOX

## NEW EFFECTS PLUG-INS

By George Petersen

Just last summer, we covered a ton of hot new plug-in debuts in our July issue and figured that would hold back the tide for perhaps another year. In fact, our prediction wasn't even close—in the past few months alone, a couple dozen cool new effects plug-ins have come to market and we couldn't wait to spotlight some of these new entries. Here, listed alphabetically, are a few recent plugs that are just the thing for in-the-box mixing and production. And if you're interested in checking these out firsthand, most are available in downloadable demo versions from the Websites listed.

### Abbey Road Plug-Ins RS124 Compressor

The RS124 Compressor from Abbey Road Plug-Ins ([abbeyroadplugins.com](http://abbeyroadplugins.com)) models the famed tube compressors that were introduced in 1960 and in constant use at the studios throughout that decade. The plug-in models three different units (each having its own character), which allows users to make quick A/B/C comparisons and select the one that suits any particular need—or all three can be used and routed to individual L/C/R-panned tracks. Another plus is a SuperFuse mode that provides more aggressive compression. It's offered in TDM (\$580) for Pro Tools 7x or higher and in Native LE/AU/VST (\$335) versions for Mac or PC.

### Antares Auto-Tune 7 TDM

Following the release of Auto-Tune 7 Native versions, Auto-Tune 7 TDM (\$649) brings the latest incarnation of the world's largest-selling audio plug-in to Avid's Pro Tools HD platform V. 7.2 or later. The software includes second generation of Antares' ([antarestech.com](http://antarestech.com)) Evo™ Voice Processing Technology, a new, from-the-ground-up time-manipulation system; new MIDI capabilities in Graphical mode; and more. As a bonus, Auto-Tune 7 TDM also includes a license for all of the Auto-Tune 7 Native versions. Supported formats include Mac OS X (10.5.x and above) and PC (Windows 7, Vista and XP).

### Avid HEAT

Designed specifically to add the warmth and sonic character of analog to "in-the-box" mixes on V. 8.1 or higher Pro Tools HD systems is HEAT (Harmonically Enhanced Algorithm Technology) from Avid ([avid.com](http://avid.com)). HEAT was designed with Crane Song founder Dave Hill, and is accessed directly from the Pro Tools Mix window without having to manage multiple instances. It's priced at \$495 for separate purchase or is bundled free with all new Pro Tools HD core system purchases.

### Brainworx Bx\_XL Mastering Limiter

Designed for insertion as a last-stage stereo bus

limiter for mixing or mastering, the bx\_XL processor from Brainworx ([brainworx-music.de](http://brainworx-music.de)) is designed to get your mixes as loud as possible without distorted or over-squashed effects. It operates by converting stereo signals into M (mid/sum) and S (side/difference) signals, and splits the M channel into high and low bands for independent processing of each, such as separating the kick drum and limiting it differently from other center-panned instruments. Automated presets; 32 steps of undo/redo; detailed level meters; and multiple solo, auto-solo and link features let users make precise, repeatable adjustments. Direct pricing is approximately \$400, and bx\_XL supports RTAS, AS, VST and AU on Mac and PC hosts.

### Dave Hill Designs RA

Another creation from Dave Hill ([davehill-designs.com](http://davehill-designs.com)), RA mimics amplifier overload, providing control over even harmonics, compression of low-level audio (almost like a detail control) and peak level, with the latter acting like an adjustable soft clip that adds saturation while rounding peaks. A PC TDM version will be offered in the near future, but at press time RA is only available for Mac TDM platform.

### Flux IRCAM Tools

IRCAM Tools from [fluxhome.com](http://fluxhome.com) is a \$1,999 bundle (also offered separately) with three spa-





From left: MOTU MasterWorks Collection, Universal Audio Studer A800, Soundtoys Juice, Focusrite Mignight Suite and iZotope Nectar



tial- and spectral-manipulation plug-ins. Based on perceptual modeling, IRCAM Spat (\$1,799) is an extensive room acoustics simulator and localizer, with eight I/O channels allowing 7.1 or 8.0 configurations. Also with eight I/Os, the \$899 RCAM Verb is an algorithmic room acoustics and reverberation processor. And the third component, the \$499 Transformer—or TRAX—uses phase vocoder technology and a transformation algorithm to manipulate the characteristic properties of a voice (or any sound) such as gender, age and breath, as well as expression, formant and pitch.

### Focusrite Midnight Suite

The Midnight plug-in suite (\$99 street) from Focusrite (focusrite.com) offers models of the ISA110 EQ and ISA130 compressor from its legacy Forté console and are compatible across VST, AU and RTAS formats. The EQ features variable high- and lowpass filters, sweepable high- and low-shelving bands ( $\pm 16$  dB), and fully parametric high and low mid bands. The compressor has threshold, ratio, attack, release and makeup gain controls, plus a variable wet/dry control for parallel compression effects.

### iZotope Nectar

The \$299 Nectar plug-in suite from iZotope (izotope.com) provides 11 vocal effects, including breath control, compression, de-essing, doubler, EQ, noise gate, limiter, delay, reverb, saturation and pitch correction. A manual Note Editor lets users capture a segment of audio, with piano-roll-style editing of pitch and timing. Onboard presets offer quick access to 110 Style settings in 12 genres, such as '60s Motown sound, early '90s grunge rock, a radio-ready Podcasting template, jazz vocals or a modern pop sound, ranging from delicate improvements to robotic effects. It's PC/Mac-compatible, supporting Pro Tools 7 or higher (RTAS/AudioSuite), VST, MAS, AU and DirectX hosts.

### McDSP V. 5

Now shipping, V. 5 from McDSP (mcdsp.com) includes the new 6030 Ultimate Compressor plug-in, Classic Pack V. 5 and Emerald Pack V. 5. In addition to Pro Tools, McDSP V. 5 plug-ins now support all AU-compatible DAWs. Supported formats include Mac OS 10.5.x (Leopard) and 10.6.x (Snow Leopard), Mac PowerPC (RTAS only) and Windows. The 6030 Ultimate Compressor offers 10 different compressors, some designed completely from the ground up by McDSP, mixed with unique twists on vintage emulations. Prices are \$449 HD or \$249 native, or as an upgrade to Emerald Pack V. 5 for \$349 HD or \$299 native.

### MOTU MasterWorks Collection

Originally developed for MOTU (motu.com) Digital Performer, the MasterWorks Collection (\$295) audio plug-in bundle runs on Mac 10.5 or higher hosts that support RTAS, AU and VST. The bundle includes MasterWorks EQ, MasterWorks Leveler and ProVerb, which are modeled after classic studio processors such as the Teletronix LA-2A, analog British console EQs and a convolution reverb with dozens of preset acoustic spaces from halls and stages to plates and cathedrals. All three plug-ins feature 32- and 64-bit internal floating-point processing, and CPU-efficient performance, and support mono, stereo and surround channel configurations.

### Nomad Factory Magnetic

Magnetic (\$129) from Nomad Factory (nomadfactory.com) is a stereo warming effect created to emulate the sound of classic tube circuitry and analog tape saturation. It offers control of reel-to-reel tape "speeds," tape/tube saturation and coloration, and a vintage-style EQ. Its interface is designed to appear modern and simple,

and promises to be user-friendly for dialing in usable sounds. It supports AU, RTAS and VST on PC and Intel-Mac hosts.

### NuGen Audio NuGen Studio Standard Edition

This bundle (\$365) from NuGen Audio (nugenaudio.com) puts some serious audio tools into one collection. It includes the SEQ 1/SEQ 2 linear phase equalizers; Monofilter (to add focus and definition); Stereoizer to create two channels from mono sources or enhance stereo perspectives with space and width; Stereoplacer (with frequency-based panning, parametric EQ, stereo spectrum correction and more); and, as a bonus, the Visualizer plug, which provides precision audio analysis of phase, stereo, level, correlation and spectrum display. Each of the plug-ins is also offered separately.

### PSP Audioware N<sub>2</sub>o

Based on the concept of its popular Nitro, the new N<sub>2</sub>o (\$129) from PSP Audioware (pspaudioware.com) is a semi-modular, multi-effect plug-in offering up to four sound-processing operators at a time, including morphing, resonant and formant filters, EQ, delay, reverb, pitch shifter, compressor/expander, bit-crusher, distortion, full-wave rectifier and more. It supports AU, RTAS and VST on Mac and PC hosts.

### Serato Pitch 'n Time Pro 2.5.1

This AudioSuite time-stretching and pitch-shifting plug-in from Serato (serato.com) is designed for use with Pro Tools, and now offers Pro Tools 9 support. Time compression/expansion can range from eighth through 8x speed, independent of pitch and pitch shifting of up to 36 semitones. Price (box or download) is \$799.



Left: URS Phat C analog-sounding compressor for individual tracks and buses. Below: Nomad Factory Magnetic stereo-warming effect.

### Slate Digital Virtual Console Collection

The Virtual Console Collection from Slate Digital (slatedigital.com) comprises two plug-ins: Virtual Channel (applied to mixing channels) and Virtual Mixbus (applied to the master fader). Each plug-in lets users select from six meticulously modeled consoles, where the user's DAW assumes the subtleties and nuances of an actual analog board. It supports Mac/Windows hosts on VST, RTAS and AU.

### Softube TSAR-1

TSAR-1 from Softube (softube.com) is a modern stereo reverb algorithm with extensive user parameter control, as well as 41 well-designed presets categorized into a Modern and a Vintage set. It's also bundled with the TSAR-1R, a simpler version with the same sound quality

but control of just three reverb parameters—pre-delay, color and time—with the last being a single-control combination of multiple time parameters. It runs with any VST, AU or RTAS-compatible host application.

### SoundToys TDM Effects V. 4, Native Effects V. 4, Juice

SoundToys (soundtoys.com) puts all 11 of the latest V. 4 TDM plugs into a \$1,195 bundle. TDM Effects V. 4 includes the new Decapitator analog saturator and PanMan auto-panner, as well as EchoBoy, SoundBlender multi-effects, Speed tempo/pitch control, FilterFreak resonant analog filter, PitchDoctor, PhaseMistress phase shifter,



PurePitch, Tremolator and the reverse echo effects of Crystallizer. For Native Mac/PC users, the company has also assembled eight of those plug-ins (sans SoundBlender, PurePitch and PitchDoctor) into a Native Effects V. 4 package priced at \$495.

Coming soon, SoundToys' Juice is a virtual analog-input-channel-modeling plug-in based on classic and high-end consoles and mic pre-amps, with the intent of providing something a bit more subtle than its Decapitator plug. Juice's simple interface includes presets with intriguing names like Los Angeles, London, Cambridge and Huntington—mated with drive, low-cut, phase reverse and tone controls. It will only be offered in Native versions (RTAS, AU and VST) for Mac and PC hosts.

### SPL Passeq

SPL (spl-usa.com) expands its Analog Code plug-in series with Passeq (\$199 retail), which models the company's high-end stereo passive equalizer in software form, retaining the look and 72 filters in three bands per channel design, including the full interactivity between filters of the original and emulation of the sound of its input/output transformers. The plug-in can display as a standard 2-channel interface or as a space-saving single-channel version, and a switchable M/S mode provides independent processing of mid and side signals. It supports VST, AU, RTAS, TDM and Avid VENUE on Mac and PC.

## Sonnex Fraunhofer Pro-Codec

### The Final Step in Making Better Mixes

While we're on the subject of mixing within the box, we couldn't help but take a look at the new Pro-Codec, a cooperative effort between Sonnox (sonnoxplugins.com) and Germany's Fraunhofer Institute for Integrated Circuits (Fraunhofer IIS). After hours (or weeks or months) perfecting the ultimate mix (in stereo or surround), the concept of simply slamming it into a codec for encoding to an MP3/AAC file for distribution and then forgetting about it seems unthinkable. This new Pro-Codec plug-in makes it possible to audition codecs precisely in real time, allowing fast changes of mastering or mix parameters to optimize the file for any particular codec, without the need to encode it, preview it, make changes and then re-render.



Pro-Codec lets engineers audition up to five codecs within a DAW environment, tweak an optimized mix, and batch-encode to multiple formats simultaneously. All major codecs—including MP3, MP3 Surround, AAC-LC and HE-AAC—are supported, as are lossless codecs such as MP3 HD and HD-AAC. The plug-in is compatible with major DAWs and supports both Mac and Windows. It's slated for delivery this spring at \$499.



## Universal Audio

### EP-34 Tape Echo/Studer A800

Designed for Universal Audio's (uaudio.com) UAD-2 platform, this plug-in offers the warm tape-delay effects and specific behaviors of the EP-3 and EP-4 vintage Echoplexes. The plug-in is available as part of the new UAD Software V. 5.7 release or separately at \$199. In addition to the EP-34 Tape Echo, V. 5.7.0 includes the officially licensed dbx 160 comp/limiter plug-in and performance enhancements for all Windows UAD-2 users.

Also for the UAD-2 format, UA's Studer A800 Multichannel Tape Recorder plug-in (\$349) was modeled by UA with help from AES magnetic recording expert Jay McKnight. Perfect for adding some tape warmth to tracks, this plug-in faithfully models the entire tape path, including input, sync and repro paths and circuit electronics of the hardware, plus the sounds of four distinct tape formulae and calibration levels.

### URS Phat C

Phat C from URS (ursplugins.com) is an analog-sounding compressor for individual tracks and buses, replicating the characteristics of many hardware compressors. Its input stage adds saturation to color, and affects the compressor's response to different program material. The six saturation models (VCA, opto, FET, transformer, tape and tube) re-create vintage harmonics and soft clipping that affect transients before compression, while a Spank mode lets users hit transients even harder. It's \$99 and supports Native (RTAS/AU/VST) Mac/PC hosts.

### Waves V. 8/Aural Exciter

Waves (waves.com) is now shipping its V. 8 plug-ins, which add the horsepower of the vintage-modeled V Series to select Waves bundles, and bring a fresh new look to several classic plug-ins: L1, C1, S1, Q10, DeEsser, TrueVerb and AudioTrack have all received makeovers. New technical features include an improved preset-management system, mouse-wheel control, and enhanced ICON and Automap support. For WavesLive Yamaha users, V. 8 provides MultiRack SoundGrid-flexible direct-to-DAW recording and sidechaining capabilities. In other news, Waves collaborated with Aphex to create a plug-in version of its vintage prototype tube Aural Exciter hardware units, and Waves is now offering more of its plug-ins for individual purchase. III

Mix executive editor George Petersen also operates a small record label at jenpet.com.

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Dianne Reeves performing with the Colorado Symphony Orchestra and her quartet for a special jazz Christmas show that would later be broadcast in DTS surround to NPR stations.

# CROONING WITH STRINGS

## DIANNE REEVES PERFORMS ONE-OFF WITH COLORADO SYMPHONY ORCHESTRA

By Candace Horgan

A jazz quartet walks into a concert hall and meets a symphony orchestra. That's not the opening line to a tall tale, but a concert put on at Boettcher Concert Hall in Denver on December 14, 2010. The Colorado Symphony Orchestra (CSO) and Marvin Hamlisch paired with Dianne Reeves and her quartet to put on a jazz Christmas show.

The show was recorded for later broadcast in DTS 5.1 on NPR by Mike Pappas and Thucydides "Duke" Marcos. Boettcher Hall is a tricky place to work in, with lots of shallow angles and an open, in-the-round feel. That presented a lot of challenges for Paul Boothe, Reeves' sound engineer. Boothe has been working on sound engineering since the early 1980s, and has been with Reeves since 2004. Prior to that, he was with Michael Brecker.

"I started in 1983," says Boothe. "Before that, I was

a musician. In '83, I was so hungry that I looked in the paper for a gig. I was a cellist in a rock band for many years, and cellists in rock bands have time to walk the house, so I was also doing sound from the stage—I thought I knew something about sound. I saw 'Soundman Wanted' in the paper, and the soundman who had the gig took pity on me.

I was horrible; I had not a clue because I had worked on tiny 6-channel P.A.s. So I did that for a while, then was a production manager of a nightclub. It started out as a blues club, but you couldn't make a living doing seven nights a week blues.

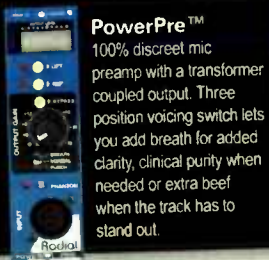
"I'd always had an affinity for jazz, and I met some artist managers as they came

through this club in Cambridge, and I met a guy who I liked who was from the area and was managing Michael Brecker. He put me on a USIA tour with a small Bose P.A., and we went behind the Iron Curtain and did shows for the fans. It was a lot of work. That was my first one, and then a year later I got another of those. The second one had a pianist who I became friends with. Later, she was in a manager's office who was managing a drummer named Tony Williams, and his road manager had called up while she was in the office about



Although there were close to 100 mics onstage, about half of those were used for the eventual broadcast in DTS 5.1; the others were used for SR in the hall.



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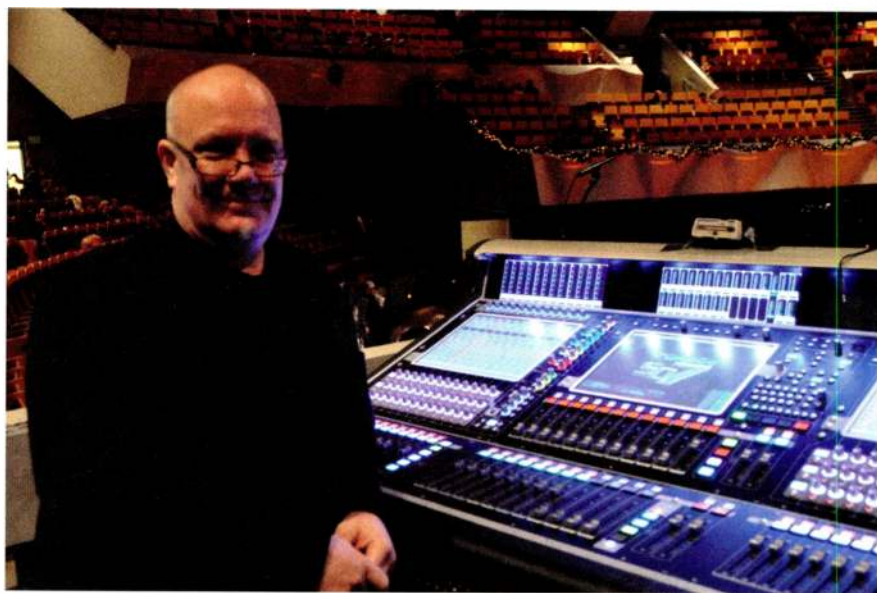
## crooning with strings

a Japanese tour. It was Tony Williams' first time back to Japan in 40 years; he had some problems with the authorities on the Miles' tour a long time ago, so it was his first time back and it was a big deal for the manager, and she was all up in arms, and my friend Rainey said, 'Oh, I know a guy,' and that was my last sound company gig. From that time on, I was doing audio and road managing. It's a work in progress still."

For the Reeves/Colorado Symphony Orchestra show, Pappas brought in a DiGiCo SD7 console with MADI capability. Although there were close to 100 microphones onstage, only about half of those were used for the broadcast while the others were used for sound reinforcement in the hall. The SD7 allowed Pappas and Boothe to split the feeds. Fine-tuning the SD7 before Boothe arrived was Aric Christensen, the house engineer for the Boettcher.

"It's really set up well to do theater stuff," says Christensen of the SD7. "You can set up each scene and have multiples within that scene. You can do stuff like change the delay settings of where a performer is. Let's say they start at an upstage position; you can move to a scene after that where they are crossing so you can change the delay times and time-align your P.A. with where the performer is onstage. In an analog world, there's no way of doing that. It's really versatile."

Boothe, who does "production du jour," had some experience with the SD7, as well as the SD8, from previous tours in Europe. "We don't travel with production at all," he



Reeve's sound engineer, Paul Boothe, mans a DiGiCo SD7, using few effects off the board with the exception of some compression on Reeves' vocals.

says. "We don't even carry instruments. Guitar player carries a guitar, we carry cymbals, and that's it. We have production du jour, backline du jour every day, and I'm blessed that I get to work with every desk that's out there. The SD7 and SD8 are desks that I don't work on a lot, but the ergonomics of them are friendly, unlike some. There hasn't had to be a lot of study. Of course, I don't know the inner workings; the techs come in and take care of all the routing and all that so I don't deal with much of the guts, the hardcore uses of the machine, but for the top layer it's easy to move around on and it sounds good."

Boothe didn't use much in the way of

effects on the SD7, except for some compression on Reeves' vocal. The hall itself is difficult to mix in.

"Tonight, the room is the effect; I wish I had a reverb sucker," Boothe says with a laugh. "I just finished doing a chamber orchestra tour with a pianist named Brad Mehldau, and he has a record out called *The Highway Rider*. We did a bunch of shows in Europe, and again it was production du jour. We had three orchestras on the tour but many nights in a row with the same orchestra, which helps, and I used the SD8 a couple of times over there. You're not seeing another console that has the gang feature that has the sonic quality of the SD8. What a godsend that is.

"This room presents a lot of challenges," Boothe continues. "The engineer here, Aric [Christensen], has done a great job balancing the P.A., so it's made it really easy for me to come in and mix and be somewhat accurate. It's a mono mix. Typically when I mix orchestras, and I typically do 30 orchestra shows a year, I do a lot of shameless panning because orchestras are that way acoustically; it's not mono by any stretch. It helps when you can do that to reinforce an orchestra when you use hard panning of the mics. It's a lot less demanding on the mix. You can get a lot more leeway, but when you have a mono mix of a whole orchestra and a band, that involves everyone coming out of the same speaker and you've got to multiply it all over the room. You have to really careful. Aric has done a good job of making that a possibility."



Handling monitor duties is Bret Dowlen (of Dowlen Sound), who is mixing on a Paragon P2 for the wedge-only stage musicians.



One concession to carrying gear that Boothe makes is a Neumann KMS 105 microphone for Reeves, which he feels is one of the best for her dynamic vocal technique. "She has an incredible instrument—absolutely incredible, huge instrument," he says. "And she uses the mic like a lot of other vocalists, but she has the instrument that can allow her to sing a foot-and-a-half to two feet off the microphone and not totally be a catastrophe. She will also get right up on the microphone, but she knows when to do that. She has really good microphone technique, but the 105 is one of the only microphones I've found that allows her to have that freedom."

Reeves' backing band included pianist Peter Martin, bassist Reginald Veal, drummer Terreon Gully and guitarist Peter Sprague, in addition to the CSO. The quartet required monitors, as did the orchestra's percussion and the brass sections. In charge of mixing was Bret Dowlen of Dowlen Sound. The wedges were proprietary ones built by Dowlen Sound using a 12-inch and a 2-inch driver.

[Reeves] uses the mic like a lot of other vocalists, but she has the instrument that can allow her to sing a foot-and-a-half to two feet off the microphone and not totally be a catastrophe.  
—Paul Boothe

"Monitoring is on wedges for this application because that is what Dianne is most comfortable with," Dowlen explains. "There are five out there for her and her musicians. It's pretty simple; they're not asking for much and they're nice people so it's been a good day."

Dowlen mixes on a Paragon P2 desk, and found the mixing relatively simple as the musicians were not very demanding in what they wanted. "Wedges get louder than the orchestra, so the real challenge is trying to get them to be happy at much lower volumes than they might be happy with normally," Dowlen says. "I kind of get the impression from the way they play together that they are jazz guys and

listen to each other pretty well, and maybe monitors aren't as critical to them as rock guys.

"Dianne's getting her vocal, a little bit of piano and a tiny bit of guitar," Dowlen continues. "The drummer really isn't getting very much: a little bit of vocal, little bit of bass, little bit of guitar and a tiny bit of piano. The guitar player has a bit of her, some of the other vocals; they each sing on three songs so they each have a little bit of each other and themselves for when they sing. The piano player is getting a tiny bit of piano, a little bit of her

and a tiny bit of guitar because they are kind of spaced far apart onstage. The bass player, he was the most particular of the bunch. I got his bass finally sounding the way he wanted it to, and we added a little bit of guitar and a tiny bit of Dianne, plus a tiny bit of the other guy's vocals and tiny bit of his vocals, and that's it for him."

An estimated 1.5 million listeners heard the DTS Neural Surround broadcast on Christmas Eve 2010. III

Candace Horgan is a Denver-based writer.

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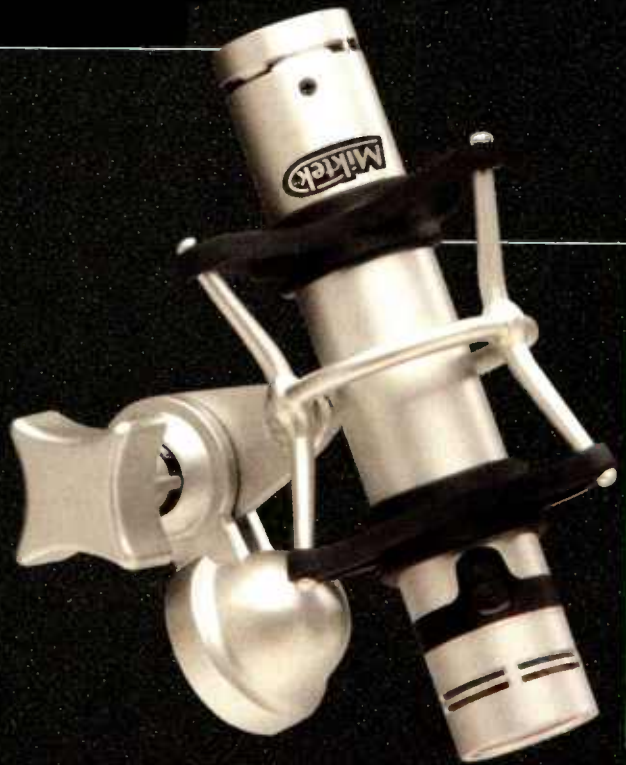


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Los Lonely Boys, from left: Henry, Ringo and Jojo Garza

## Los Lonely Boys

By Blair Jackson

### MUSICAL FAMILY KEEPS RIFFING AND ROLLING ALONG

When Los Lonely Boys, a trio of very musical brothers, exploded out of the small city of San Angelo, Texas, in 2004 with the hit single "Heaven" from their eponymous debut album, many wondered, "What can they do for an encore?" After all, rare is the band that hits the jackpot first time out: "Heaven" rocketed to Number One on *Billboard's* Adult Contemporary chart, made the Top 20 on

the pop charts and won a Grammy; the album sold more than 2 million copies. The appealing and versatile Garza brothers—guitarist Henry, bassist Jojo and drummer Ringo, all in their mid-20s when the album hit—turned up everywhere, it seems, for the next couple of years, including TV awards shows and on other people's albums (such as Santana's *All That I Am* and the Amnes-

ty International John Lennon tribute album, *Instant Karma*).

And while their subsequent albums haven't made the splash of their debut, Los Lonely Boys continue to tour successfully worldwide while further developing their craft onstage and in the studio. Drawing from a broad range of musical styles, from rock to soul to folk to various "Texican" traditions (includ-

ing *tejano* and *norteño*), and united by the brothers' patented harmonies (which have always reminded me of Los Lobos), the group has carved out a unique niche in the mainstream music world and managed to stay true to themselves along the way; never an easy feat.

Their latest studio album—their fourth, not counting a Christmas set and their fine 2009 covers EP, *1969* (on which they covered Santana, The Beatles, The Doors, Tony Joe White and Buddy Holly)—is called *Rockpango*, and it's a solid collection of 11 tunes that really shows their maturity as a band. There's a good dose of heavy rock riffs, with Henry Garza getting a chance to flash his Hendrix/Stevie Ray side on the exciting title cut, while dipping into more of a Clapton bag on the bluesy "Porn Star." There's funky clavinet on a couple of tracks, a wonderfully breezy acoustic romp called "Fly Away," sumptuous ballads accompanied by strings, a strange but cool spoken-sung number called "16 Monkeys" and catchy riffs throughout that recall everyone from The Beatles to Cream, while still hewing to the Los Lonely Boys sound.

*Rockpango* is their first album where they have been the sole producers, but to keep things in their comfort zone, they once again worked with engineer Steve Chadie (pronounced "shady"), who cut the group's first two albums (*Los Lonely Boys* and *Sacred*), plus *1969*. They recorded in their favorite room, Willie Nelson's Pedernales Studio, where Chadie is on staff.

"That studio feels like home to us," comments Jojo Garza. "When we actually build our own studio [in San Angelo], it's going to be a lot like Willie's place. I told Chadie we're going to clone him to make sure we have somebody good behind the board at all times."

Chadie originally came to Pedernales (located in the Hill Country 30 miles west of Austin) as an intern in 1995, "and my first day, Willie Nelson and the Beach Boys were there. I met Brian Wilson, and I thought, 'Yeah, I could enjoy doing this!'" he says with a chuckle. He learned the ropes assisting under Larry Greenhill and Stuart Sullivan (who ran Pedernales' sister facility, Arlyn Studios, in Austin), and after Greenhill left in 2003, Chadie took on more lead engineering duties—like that first Los Lonely Boys album.

Actually, Chadie first encountered and recorded Los Lonely Boys three years earlier. "I think the first time I ever saw them was in 2000. They were at one of Willie's Fourth of July Picnics [concert extravaganza], and they came on Willie's bus, and we were like, 'Who are these kids, man?' And they sat down with these acoustic guitars and they played, and our jaws just *dropped*. Wow!



**Above: Jojo and Henry Garza at Pedernales Studio. Right, front row, from left: Steve Chadie, Jojo Garza and Ringo Garza. Back row, from left: Henry Garza, Frenchie Smith and Kush.**



After that, I did an acoustic demo with them, and I also assisted and did some Pro Tools work on a record with them, but that never came out. It had some of the songs that turned up on the first album, but they weren't happy with it so we basically re-did it later; and then there were some other songs that they wrote in between, of course."

Chadie says recording the first album was very straight-forward. "It was totally different than the way they work now because, as they say, you have your whole life to write your first record, so they had the songs together and then we made the whole thing—recorded, mixed and gone—in 28 days."

Then and now, the band recorded live in the studio as a three-piece. Pedernales' large main room has a high, irregular ceiling and wooden floors, and the control room is based around an SSL 4048 G+ console and a 1970s 80 Series Neve that Chadie describes as "like a huge sidecar."

Having a hit is always thrilling, but it also usually leads to greater expectations from the record company suits, and such was the case with Los Lonely Boys and Epic Records. As Chadie notes, "When you make a hit record, the label then wants the same thing over and over, and the band took a lot of heat for not giving them 'Heaven, Part II.' And you can't really blame them—they're a business, not a band. I understood both sides, but being a musician first I understood what these cats wanted to do. They wanted to progress and keep making original-sounding music. I've heard

some callous things said about that second record—'What's with that accordion? Why aren't they playing the game?'—but I think it's a great record. I respect them for making the music they wanted to make. And they're still that way."

Adds Jojo Garza, "We write what we see, what we feel, what we hear and what we experience in this world and in our personal lives. That's what it is to us—it's write what you feel."

When the band went into the studio to make that second album, they didn't have most of the songs written, and it was during those sessions that they adopted the writing/recording technique they favor today (and used on *Rockpango*). Chadie notes, "I would say the process is they have basic ideas, they come in and vamp and jam on them, and I run the machine. They come in, play off these ideas, figure out structures, and somehow it morphs into songs. And the music is usually written before the lyrics—at least it was on this new album. If people came in and looked at it, they'd probably think it was inefficient, but it's really not—it's the way they work. It's not a structured thing."

Chadie cites "Porn Star" and "16 Monkeys" as new tracks that evolved that way, and Jojo Garza adds, "Love in My Veins" is another that was



written completely in the studio. On that one, the first lick was written on piano and then it went to Henry and me messing around, and then Ringo got involved and it turned into this really cool tune. Sometimes we might have some lyrics we had written down a long time ago, and we'll go, 'Hey, that might work for this.' But most times it will start with a guitar riff or a piano riff, and we'll go from there."

To capture the trio's sound at Pedernales, Chadie says, "I like to put Ringo's drums where the ceiling is highest. I put up two pairs of room mics and then a mono room mic, and gate them and blend them." For the close-in mic, he'll use a stereo AKG 422 in a mid/side configuration; then the next set back will be Neumann U87s or U47s; and then the most distant mics are U47s or U48s "because they're kind of smooth. A lot of people use ribbon mics for room mics, but I like the 47s. I'll also stick a mono [AKG] 414 in the hallway and gate that—that's strictly for snare. On the kit itself, I put [Shure] 57s on the snare, [Sennheiser] 421s on the toms, [Electro-Voice] RE-20 inside the kick and a FET 47 on the outside. Overheads are some kind of Neumann, usually KM100s.

"The guitar rig is 57s and 421s," he continues. "Henry's got a great setup—we run a Marshall and a Fender in tandem, four channels. I used to sum 'em back in the days of tape; now we've got so many channels I don't bother summing them. I'll pan those hard. We also had an Echoplex on the Marshall and we matched it up with some delay on the Fender later on." Traditionally, Henry Garza has played a Strat almost exclusively "but on this album, he was busting out some [Gibson] ES335 and Les Paul. Four or five songs are Gibson.

"On bass I use a Demeter tube DI and Joey's got a huge SWR rig with an 8x10 cabinet and I put a [AKG] D12 on that. Even though we'll sometimes put [Henry Garza's] amps off in another room, Joey wants the bass amp in the room with him so I baffle it off, about 10 feet from the drum kit. There's a significant amount of bass bleed in the room mics, but I've decided not to worry about it—it's part of the sound."

Chadie will use a couple of Shure 58s for scratch vocals, though he notes they often don't have the lyrics finished when they're laying down the instruments, so the singers might just be humming along or singing fragments. Keeper vocals happen in one of the studio's iso booths. "Joey likes to have four passes to work off of," Chadie says. "We'll do a comp, listen to the comp and go back in and take care of anything we need to. Usually we get a good comp, though. These guys can sing, man! It's so nice not to have

to tune the vocals." Chadie uses a U47 going through the Neve's mic pre's (1079s) and a Tube-Tech compressor.

Although the actual recording time for *Rockpango* was fairly minimal, the project spread out over several months when Jojo Garza had to lay low after a growth was discovered on his vocal cords and he underwent (successful) surgery. Two other studios in addition to Pedernales saw some work on the project: Strings were cut at Church House Studio in Austin by David Boyle, and some B-3 and vocals for two songs were done at Wire Studio in Austin by Chadie.

The engineer mixed the album in the box at his home. He has a number of plug-ins he employs, including the Bomb Factory 1176, Trillium Lane Labs' TL Space reverb, PSPaudioware delays and compression, and FilterBank EQs.

What changes has Chadie seen in his 10 years working with Los Lonely Boys? "They've gotten a lot tighter. I mean, they were tight to begin with, but it just seems like all the years on the road have really pulled their sound together. They're playing like one three-part person. It's amazing!" III

To read more of this interview, go to [mixonline.com](http://mixonline.com).

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# SESSIONS

## Miller Unites Guitar Masters for 'The Majestic Silver Strings'

Musician/composer/producer/engineer Buddy Miller is celebrating a couple of deserved Grammy noms for producing Robert Plant's *Band of Joy* album and Patty Griffin's gospel record *Downtown Church*. He's also getting ready to release his latest project, *The Majestic Silver Strings*, which he produced in his home studio, and which brings together four eclectic guitarists—himself, Marc Ribot, Bill Frisell and Greg Leisz—along with drummer Jay Bellerose, bass player Dennis Crouch and guest vocalists including Lee Ann Womack, Emmylou Harris, Griffin, Shawn Colvin, Chocolate Genius and Miller's wife, singer/songwriter Julie Miller. *Silver Strings* offers unusual takes on some country songs, emphasizing the bent beauty and restraint that are hallmarks of all four guitarists.

Miller says that the hardest part of pulling this project off was coordinating the schedules of such a stellar group. But once the dates were booked, each of the guitar players brought in songs for discussion. Miller himself came in with 50 possible choices. The track list was eventually narrowed down to 13 songs, including chestnuts like "Return to Me" and "Why Baby Why"; instrumentals "Freight Train" and "Cattle Call"; and the most dramatically altered track, Chocolate Genius singing an intense, aggressive version of Roger Miller's "Dang Me."

"You think you know that song as kind of an up, funny little ditty, and when you hear [Chocolate Genius sing] it, you realize you don't really know that song," Miller says. "It's really dark when you hear the lyrics sung in a sort of minor key and slowed down."

All of the songs went down live, with the musicians sitting in a wide circle. Engineer Mike Poole, who also tracked Griffin's album, recorded about three songs a day. "Buddy always works with such great people," Poole says, "and what he does is really different even from what other people are doing in their home studios when you consider the consistent quality output and the high-profile artists he works with."

Poole tracked to a 2-inch analog MCI JH1624 16-track, which gave them just a little trouble; the flanges on the reels made noise on some of the songs. "So while the singers were singing, Mike would be holding a big piece of foam in front of the tape machine," Miller says.

Poole captured almost all of the vocals with a Telefunken AK-47, but Miller recorded his wife's vocals and some of his own after hours using an Avantone BV-1. As for the guitarists and their tremendous arsenal, Miller's electrics took a Royer R-121 mic and a Vintech 473 mic pre; acoustics were to a Sony C-37A or Telefunken AK-47 through an API



L-R: Bill Frisell, Buddy Miller, Greg Leisz and Marc Ribot

3124 pre. Frisell's electric guitars went to a Cascade Fathead II and Vintech 473; acoustics to an AK-47 or ELAM 251 and an API 3124. Marc Ribot's electrics were miked with a Sennheiser 409 to a Vintech 473; acoustics took the ELAM 251 and an API 3124. And last but not least, Greg Leisz's pedal/lap steel guitars were miked with a Cascade Fathead II to a Vintech 473 pre.

Miller mixed the record himself, which he says was a fairly simple process: "There might have been a couple of overdubs, but all the sounds on this record we just got live off the floor," he says. "But I didn't want it to be a record of guitar players getting together and just jamming and playing over each other. We wanted to make a song-based record, a singer-based record, with guitars being more of a melodic voice."

—Barbara Schultz

## Studio Profile You Hang Up in Off the Wall

Producer/engineer Robert Venable spent the month of January in his Off the Wall Studios (Nashville, co-owned by drummer/engineer Lester Estelle) tracking alternative rockers You Hang Up. Based in Phoenix, the band is fronted by singer/songwriter/musician Aaron Brown, and features a famous drummer: Frankie Muniz, the actor/musician best known for his role as the star of the hit TV show *Malcolm in the Middle*.

Venable had recorded Brown's previous You Hang Up project when the "band" was simply Brown playing every instrument and singing every vocal part. When those recordings generated some buzz, Brown and Venable recruited actual bandmembers (Henry Ebarb on bass; Aaron's brother, Chris Brown, on lead guitar; and Muniz) so that You Hang Up would be able to play live. Now, with a few labels interested in new recordings, they're making their first full-length album



L-R: Studio partners Lester Estelle and Robert Venable, bassist Henry Ebarb, drummer Frankie Muniz and lead vocalist Aaron Brown



## ❖ Northern Lights Integrates Sound and Picture

Northern Lights is one of a new breed of multifaceted, creative companies that offer comprehensive graphics, video and audio services under one roof. Relatively new to the company is sound designer/composer/engineer/musician Damon Trotta, whose audio studio within Northern Lights went online this past August.

"The business was starting to integrate," says Trotta, who previously worked for close to 19 years



at the now-defunct Sound Hound. "Video was putting in audio; audio was putting in video. Everybody was trying to get into the package business. It seemed like a natural fit for me to end up here."

Trotta is one of two audio engineers within Northern Lights; Ted Gannon joined in 2007. Trotta now works from a new studio designed by Walters Storyk Design Group; it's a 350-square-foot space

that incorporates his workstation running Logic and Pro Tools (which he favors for music composition and post-production, respectively), 5.1 Focal Twin and Solo 6 monitors, D-Command controller, a selection of real and virtual instruments, and outboard gear including Millennia mic pre's, dbx 160s, Empirical Labs Distressors and more.

One of the most appealing aspects of working at Northern Lights for Trotta is the variety of projects the facility handles—often, he says, from "concept to delivery," providing audio and video post for TV commercials and promos, Websites and documentaries. A recent project included sound design, post and even a brief uncredited voice-over for History/New Animal Productions' four-hour World War II documentary *The Rise and the Fall of the Third Reich*. "There are few angles you could take on that subject that haven't been covered," Trotta acknowledges. "This company specializes in what they call experiential TV. They create programming from found footage and string it together to create a story. This one included home movies, diary entries and soldiers' battlefield footage, and they created the story of being an average citizen in Germany during the rise and fall of the Third Reich. These guys do great work."

Find more photos and information about Northern Lights at [mixonline.com](http://mixonline.com).

—Barbara Schultz

by Barbara Schultz

with Venable and co-producer Joe Fitz.

Off the Wall has been online since November of '09; Venable and Estelle built it out in an existing 1914 house. Most of their equipment came had been accumulated throughout the years (outboard from Vintech, API, Focusrite, UA and others; KRK E8 monitors, Pro Tools 8 and lots more), but the owners did acquire their Trident Series 24 board for the new studio. "We love the way they sound, and the EQs are really clean," Venable says. "It's punchy on drums. We had it recapped and the master section modded a little bit; it sounds great."

Venable had the band lay down tracks one part at a time, working from drums and rhythm guitars to bass to vocals, and actually adding guitar solos last. He also brought in a string quartet made up of music students from nearby Belmont University. "We're going to use some library strings for thickening," he says, "but we have the quartet pushed forward in the mix for that timbre and feeling that real strings have; you can't get that with plug-ins or emulators."

As this issue went to press, Venable and Fitz were getting ready to mix. "Aaron is such a great songwriter," Venable says. "Wait till you hear this stuff."

## Jason LaRocca Mixes, Masters Mark Isham's Score for *The Mechanic* ❖❖



Composer Mark Isham kick-started his new record label, MIM, with an adrenaline-charged film score for the 2011 movie *The Mechanic*. Isham tapped veteran engineer Jason LaRocca to mix and master the composer's hybrid creation comprising elements of rock, electronic and orchestral music. "The [original 1972] score was a jazzy, small orchestral ensemble score," LaRocca explains, "and very different from the one we did. [Laughs] Mark went in a very particular direction with it: lots of metal, detuned guitars, big string sections and giant drums. The main challenge was trying to get it all to speak as one coherent piece, and to make those worlds sound like they made sense together and [have an] impact against car crashes and gunshots. We had our work cut out for us in terms of the competition that surrounded us in the final dub."

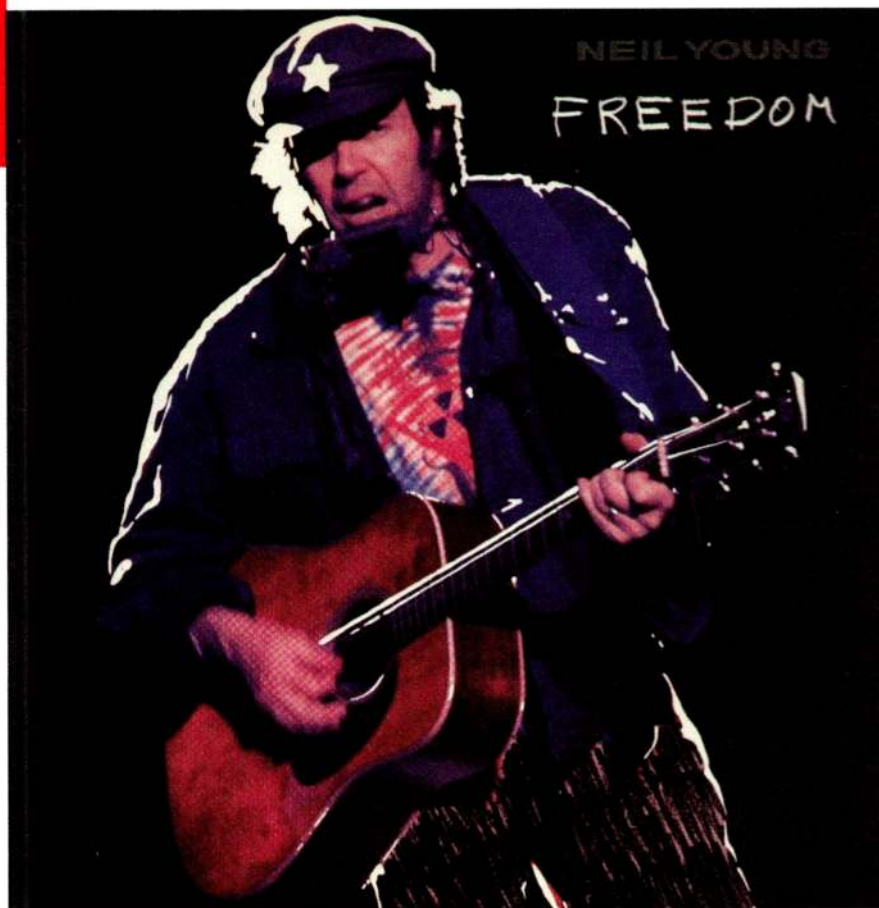
LaRocca mainly mixes in Clockwork Labs in Van Nuys, Calif., a private facility owned by producer/engineer Hector Delgado. Assisted by Delgado, LaRocca worked on *The Mechanic* in Clockwork Labs' "A" room, which features a 40-channel Trident 90 analog console with 32 channels of Apogee AD/DA conversion; Genelec 1037b mains with a Genelec 7070A subwoofer; and Blue Sky mains and surrounds. For additional recording duties, LaRocca used Royer and Neumann mics; Eisen Audio and Grace Design mic pre's; Empirical Labs Distressors; and an Avalon Vt-747sp compressor/EQ. LaRocca notes that the mix was "very plug-in intensive [with] lots of processing," and that he used UAD-2, Sonnox and Waves plug-ins, as well as Native Instruments Guitar Rig 4, PSP VintageWarner, and Steinberg Reverence and Nuendo 5's parametric EQ.

"I used Nuendo 5 for all internal 5.1 mixing, with the Trident 90 used for select analog treatment of mix elements," LaRocca says. "We can throw anything out onto the board or leave it in the box—however we want to do it. My print masters and stereo fold-down all work within the same system. I do video on a separate system."

"It was a pretty long score—almost 70 minutes. Mark gave me between 100 and 200 tracks of synths and the orchestra. On a couple of cues, elements would fly in at the last minute; orchestra files would show up [from Prague] and we'd have to throw them into the cue and mix them and print them out." Isham and LaRocca worked with the film's sound designers "to some degree. We would get a pretty good idea of the effects so we knew we had to add another 20 drum tracks to make them impactful enough. I think we were probably mixing at about 15dB below reference volume at one point because we were printing so hot. It sounded great on the dub stage."

—Matt Gallagher

# CLASSIC TRACKS



## Neil Young

### "ROCKIN' IN THE FREE WORLD"

By Blair Jackson

Pick an era, almost any era since the mid-'60s, and you can make a "Classic Tracks" argument for a Neil Young tune: Maybe "Mr. Soul" from *Buffalo Springfield*; "Down By the River" from his second solo album; "Helpless" by CSNY; "Heart of Gold" from *Harvest*; "Comes a Time"; "Hey Hey, My My"; "Like a Hurricane"; "Cortez the Killer"; "Harvest Moon"—stop me 'cause I can think of a lot more. This month's classic is relatively recent—it comes from his 1989 album, *Freedom*, but just to show you how prolific this guy is, he's made more than 20 albums since then!

In the early and mid-'80s, Young was hopping all over the map stylistically: *Trans* ventured into electronic textures (including extensive early use of a Vocoder); *Everybody's Rockin'* was a stab at modern rockabilly; *Old Ways* was a wonderful (and criminally under-

rated) exploration of hard-core country stylings; and *This Note's for You* introduced a big, brassy R&B/blues band called The Bluenotes.

A few years before that rollicking Bluenotes album, L.A. engineer Niko Bolas drifted into Young's orbit. "I came in around 1984 or '85 when Neil was working on *Landing on Water*," he recalls today. "Danny Kortchmar was producing the record and wanted me to engineer it because I'd worked on Don Henley's record with him. So Neil and I met and we became good friends, and after that record he called me and asked me to continue working on *Life* with David Briggs, and after that one I actually called Neil and said I wanted to do a Big Band record because I really like horns. So he called me back, and said, 'Well, I want to do this thing called The Bluenotes, and I want you to produce it.' It was one of those kismet

things where I wanted to do horns and he had these songs that needed horns."

That album and band marked quite a departure for Young, not just stylistically, but also in terms of personnel—this is a guy who thrived using certain "go-to" players on most of his albums, whether it was Crazy Horse or perennials like Tim Drummond and Ben Keith, yet this was largely a new cast of characters. "I got into The Bluenotes through

**Young is famously spontaneous and will summon players to the studio at a moment's notice to capture the feeling he's suddenly possessed by for a given song.**

Niko," says drummer Chad Cromwell, who today lives in Nashville and works with the likes of Lady Antebellum, Miranda Lambert and many others. "At the time, Neil was trying to do this blues thing and he ran through his typical list of guys he always wanted to work with, but I guess they didn't work out, and I think it was Niko, who I'd worked with on a project in 1986, who was able to convince him to try a couple of outside guys. At that point, [bassist] Rick Rosas and I were playing for Joe Walsh, and that led us into an invitation to come out and give it a go.

"The subsequent Bluenotes record and tours happened, and then we started a second Bluenotes record, but somehow that got put on hold because Neil suddenly drifted off into wanting to do a much heavier rock sort of thing again. Rick and I and Poncho [Frank Sampedro of Crazy Horse fame; he also toured with The Bluenotes] fell into this four-piece hard rock—almost punk rock—thing with Neil, and that was the band known as The Restless. The *Freedom* record was a culmination of the end of The Bluenotes sessions that sort of melded into the heavier rock stuff that became The Restless and finally, ultimately, became the *Freedom* record." Indeed, *Freedom* is a typical Young hodge-podge with some tracks featuring members of The Bluenotes (like the epic "Crime in the City"), others based around The Restless (like the album-ending "Rockin'



in the Free World” and “Cocaine Eyes”), and for good measure there’s a solo live acoustic version of “Rockin’ in the Free World” to kick off the disc.

The exact origins of “Rockin’ in the Free World” are a little hazy. In Jimmy McDonough’s definitive Young biography, *Shakey*, he says that Young and Poncho were watching TV footage of the bedlam surrounding the funeral of Iran’s ruler Ayatollah Khomeini, when Poncho casually said, “Whatever we do, we shouldn’t go near the Mideast. It’s probably better we just keep on rockin’ in the free world.” Young was immediately struck by the phrase and asked if he could write a song around it. (This is a good story but cannot be correct, as Khomeini didn’t die until many months after the song was written and premiered. Maybe it’s just the wrong *mullah*.) Though often thought of as a patriotic flag-waver (because of the chorus), the song is actually a bleak portrait of an American landscape that includes the homeless, drug addicts and selfish energy consumption.

According to Cromwell, “I know when we were working on the never-to-be Bluenotes’ second record, Neil had brought ‘Rockin’ in the Free World’ to the studio and we would play it. He had the guitar lick and a couple of verses and would play those and we’d reconvene the next day and he’d have another verse. I have a really distinct memory of this giant notepad he always used at the time—a sketchpad on an easel—and he would write out these lyrics in really big print. He didn’t always do that, but he did on this project, and I remember seeing those verses coming in, and thinking, ‘Wow, this is a *mighty* song coming together here!’”

The song was performed for the first time on February 21, 1989, in Seattle on a tour with The Restless, but it’s not exactly clear in which month the session for the song took place. Bolas believes he heard the song for the first time a few months later, after Young’s Far East/Australia tour with the Lost Dogs: The Restless plus multi-instrumentalist Ben Keith, who is on the track. We do know this, however: It was recorded in a barn at Young’s ranch in Northern California in a makeshift studio that was nicknamed “Plywood Digital” (but more formally called Redwood Digital).

“It was built in this big plywood room that was originally designed to store gear,” Bolas

relates. “We walked in there one day when they had just finished putting up the walls, and just the sound of footsteps on the floor sounded great, and we thought, ‘Man, we’ve gotta record here before we fill it up!’ So we did. We brought in the Record Plant [remote recording] truck with a big API console and parked it outside and set up a studio inside.” Bolas engineered and co-produced the sessions with Young. Some earlier sessions for the *Freedom* album had taken place at the Hit Factory in New York City.

Bolas managed to construct a few crude baffles by putting carpets or blankets over 4x8-foot frames, “But the two things you learn with Neil right away are where to put mics so they’re as directional as you can get ‘em—what leakage is good, what leakage is bad and, most importantly, where he can hear everything; then *that’s* the spot where you put the vocal mic and the band can hear him, and you’re done.” Cromwell recalls there being “a bit of baffling between the drums and the bass cabi-

crophone, in that order, because if he sees a microphone and he’s feeling it, he’ll just let it flow and start singing or playing. I’ve got masters where you can actually hear guys setting up mic stands in the background and Neil has already started. So we don’t always have time to think endlessly about what mics we want to use; we just have to get in there with whatever’s around at the moment.”

Because of this rather relaxed methodology, Bolas is light on specific memories about microphones for the sessions. He thinks he might have used a Shure SM58 on Young’s lead vocal, and Cromwell says, “I remember seeing a lot of 57s, SM7s, 421s—bombproof kind of stuff because there was so little isolation you couldn’t expect to throw up a roomful of [Neumann] 47s and 87s and expect it to be manageable.”

Bolas recalls them running down the song a number of times, with Young always playing his solos live with the band. Young’s backup vocals, which punctuate key words so

**The two things you learn with Neil right away are where to put mics so they’re as directional as you can get ‘em—what leakage is good, what leakage is bad and, most importantly, where he can hear everything.**

**—Niko Bolas**

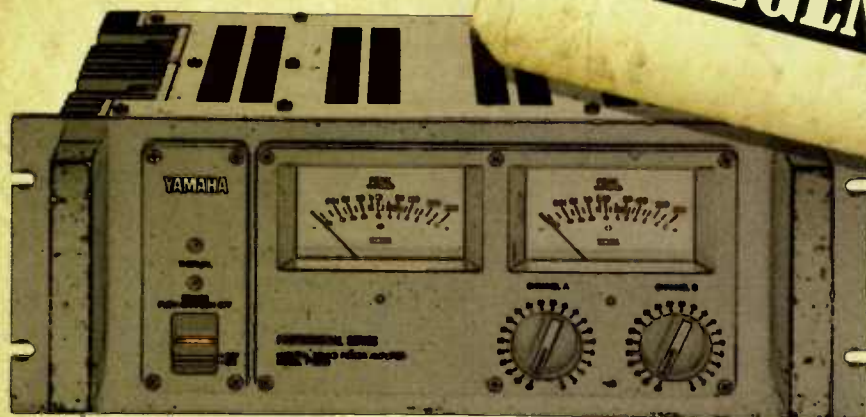
net, and the drums and Neil’s guitar stuff, but in terms of him singing and trying to isolate the vocal mic, forget it!”

Young is famously spontaneous and will summon players to the studio at a moment’s notice to capture the feeling he’s suddenly possessed by for a given song. He likes to record the whole band at once and go for “keeper” vocals as the track is being laid down. “The thing with Neil,” Bolas explains, “is he’s got an amazing conduit to whatever you want to call it—the great spirit, the muse, the higher power—and when it’s flowing for him, he won’t let anything get in the way, and he’s very aware of things that impede that, whether they be distractions or technological breakdowns. My gig is to make sure you can always play it back. My rule with anybody who’s working with us, no matter where we are, is hit Record and then plug in the mi-

effectively, were obviously added later and Bolas says he also experimented with some other keyboard overdubs that were ultimately rejected. It was mixed by Bolas at the ranch “on a combination of two boards: This old, green DiMedio console that used to be the Beach Boys’ board from United Western, and we also had a Neve sidecar.”

By the time *Freedom* was released in October 1989, “Rockin’ in the Free World” was already a concert favorite and radio immediately jumped all over the track—it rocketed to Number 2 on *Billboard’s* Mainstream Rock chart and the album made it to Number 35 (good for later Young releases). The song has been a live staple for Young (both electric and acoustic) ever since, and it has also been performed by such diverse artists as Pearl Jam, David Byrne, Maroon 5, Simple Minds and many, many others. III

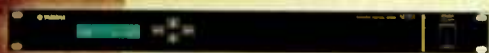
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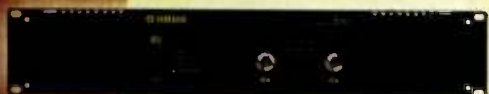
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PHOTOS: STEVE JENNINGS



Naomi (left) and Wynonna Judd performing at the Oracle Arena (Oakland, Calif.)

## The Judds

By Sarah Benzuly

### MIXING FOR COUNTRY ROYALTY

When mother/daughter team Naomi and Wynonna Judd decided to join forces onstage for their *The Last Encore* tour, the duo looked within their road family to bring their vocal harmonies to adoring fans. Front-of-house engineer Curtis Flatt has been mixing for Wynonna on and off since 2002, while monitor engineer Pete Parenteau has toured with her since 2005. Both have done a few Judds dates in the interim and so were able to create this tour's sound design relatively quickly.

"We started designing the show first because it's real different from the Wynonna show," Flatt says. "The band's a little bit bigger, with the Palmetto State Quartet added to it; a little bit different instrumentation. The

nice part was that one of the key players in the band is the Judds' producer, Don Potter. So during rehearsals, I recorded everything in Pro Tools and I could set up my mixes and have [Potter] come back, and we could say 'This works,' 'This doesn't work,' 'Can we change what they're playing?' 'Can I use more EQ?' It's really nice to have somebody in the band who fluently speaks audio."

Enriching the sound design was Flatt's experience with a d&b system; he's been with Spectrum Sound (Nashville) for the past 25 years and found that it was a no-brainer to go with the sound company's J Series system. "I sat down with Jeremy Seawell, who is my assistant on this tour,

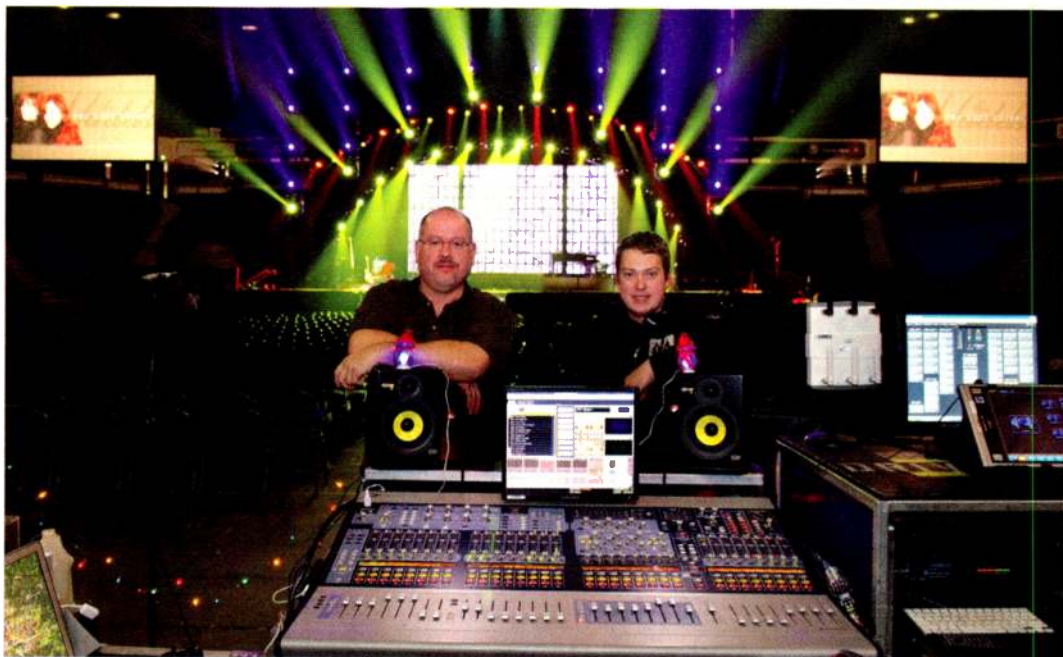
and we talked about what we thought would be the best for coverage in the arenas so that we could get things as even and as smooth as possible," Flatt says. "We're both fans of the d&b J Series; it was pretty easy to lay out exactly what we wanted and tailor it around the thrust—we didn't find out about the thrust until after we had made the design."

The system includes 14 J8s over two J12s for the front hang. "They pull down pretty hard," Flatt describes. "We had to take it up pretty high. Trim was 30 to 35 feet to the bottom of the P.A. every night so that the sightlines weren't obscuring the big video wall behind it." Side system included 14 J12s, five J-sub for side hang and

a dozen B2s distributed evenly across the front of the stage to even out the ground-fill. The pockets saw Q10s, while E3s were at the edge of the thrust. Two Q-subs (one SL and one SR) helped warm up Parenteau's ear mixes. "We had a few different settings or macros brought up so that when [The Judds] went out on the thrust, we would pull down the lower part of the P.A. a little more and bring up the thrust fills a little more so that you felt like they were right there," Flatt says.

Performing in so many different types of arenas made it key to ensure that the engineers could create an accurate-sounding system each night. And because there are, at any time, up to eight vocalists in front of the thrust of the P.A., the system must be perfectly tuned. Flatt uses a combination of his ears and Smaart, the latter for time-alignment issues and to "look and see if there was anything strange. I'd also use a couple of tracks that were shown to me by d&b—the ones they used when they were designing the boxes—that really fill out well. The only difference [in the system hang] was the angles depending on the room. Outside of that, the coverage was fine every night and we just tried to keep it off the walls.

"We're trying to keep as much energy in the show as we can, but, literally, they pulled somebody out of the audience last night who was four, [and] we know there was a man in the audience celebrating his 92<sup>nd</sup> birthday—so it's a pretty broad age range. We find a nice, comfortable level that still has the energy in it; it's very dynamic. The parts of the show that are quiet, they're really quiet. The songs that are more pop or R&B-oriented we tend to push a little bit more, but not to the point where the people who don't want that are going to get up and leave; they're going to enjoy it as well. We want to make sure the coverage is as even as we can get across the room. While we may have as many boxes as they have on shows that are



**Above: Curtis Flatt (left) and system tech Jeremy Seawell. At right: Pete Parenteau (left) and monitor tech Andy McDaniel.**



louder than this one, we want to make sure it's tapered and tailored to the room."

### Board Selections

Flatt mans an Avid Profile, which he calls his go-to desk because it's a good-sounding board and it doesn't take up much space (helpful for a tour that has a large lighting world). "Also, I can span my arms from one side of it to the other so it's easy to move around. It's very intuitive to use; I've been on it since it came out, so it's very familiar to my fingers." Flatt's using most of the onboard stock plug-ins, including ReVibe reverb and Bomb Factory models. He's also working with a Massey CT4 plug-in for Wynonna's vocal ("I find it to be a really nice, fat compressor/limiter"), Serato ("Having eight vocals in front of the P.A. at once, it's very handy") and

SPL Transient Designer. "I only keep a little bit of the impact that I want on the percussion elements, which is a pretty low level because it's a family-oriented show."

With the addition of Naomi Judd and the increased band, Parenteau switched from a Yamaha PM5D to a Midas XL8. "In the past, my first choice would have been the PM1D: I love the control surface, workflow and stability of that system. But Spectrum Sound had just acquired an XL8 and I was happy to be the first one in the company to take it out! The pre's sound amazing, and the band has noticed a big difference right away. They commented on the overall sonic quality and natural, open feel to all the inputs." Parenteau is using 12 internal reverbs. All background vocalists have their own discrete reverb; a hall and a plate are used



on Wynonna Judd. He also employs a drum plate, a 'verb for the mandolin and two for acoustics. "I tend to mix in the box and keep things simple and the audio path as clean as possible and easy to troubleshoot," Parenteau explains. "I try not to use compression at all and let the players control their own dynamics. I have a few in place for coloration, but not for correction."

### A Shure Bet

All mics onstage are Shure models. According to Flatt, Shure has taken care of The Judds longer than he's been with them. The Judds sing through KSM9s on UR4 wireless packages, while background vocals take KSM9s. The Quartet is on Beta 58s. "Everything else is standard," Flatt adds. "A 57 on guitar amp, 98s on drums, KSM32s for overheads; nothing really out of the box on this one."

When miking drum overheads, Flatt tends to put the mics almost in front of the overheads rather than over the top as there's enough cymbal going around onstage with nine open vocal mics. "And what we're looking for is more of the 'swish' rather than the crash we're picking

up, just to give it a little bit of feel," the FOH engineer adds. "We had a block of 2-inch foam cut that went almost around the 57 on the snare top to keep the hi-hat out of it. The drummer literally plays the hi-hat right over the top of the snare. That's where it was really good to have their producer with us, because I could ask him, 'How do you deal with this in the studio?' 'Well, I kinda don't.'" [Laughs]

Shure also provided stereo in-ears—a mix of PSM 900, PSM 700 and P6HW units. Parenteau is responsible for 15 stereo mixes, with most of the bandmembers having basic mixes with their voice or instrument on top of a full band mix. "I mix Wynonna's off of the VCAs because the show is very dynamic and I have to make sure she can hear all of her cues, whether it be from the acoustic guitar player, piano or background vocals." Parenteau says. "This technique carried over from her solo shows and helped make the transition to arenas more seamless." The 12 VCAs and the POP groups on the XL8 help keep the inputs easily accessible for Parenteau. Coordinating 14 channels of ears and 12 RF mics is no easy task, but Parenteau relies on a WinRadio to

scan the environment and a Wireless Workbench to check for intermods. "Overall, I only had a few tough days and it was better than I thought it would be. Once we got a routine in place, the show couldn't have gone smoother." Parenteau makes special mention to production manager Art Rich, stage manager Albert West, and backline techs Wade Hooker and Ed Turner, who made his job easy.

Adds Flatt: "[This tour] has one very powerful singer and one very quiet singer. The challenge was blending those two together and keeping them in front of the P.A. The best technique is talking to them, which they're really good about. One of them understands if you're standing too close at this moment, the other one will be in your microphone. They're really good about hearing what you have to say and being receptive to it. They've sung together all of [Wynonna Judd's] life, and they know how to blend with each other. They're really open to knowing that the surroundings are a little bit different today and you just tell them, and that makes it really nice for me." ■■■


*Sarah Benzuly is Mix's managing editor.*

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# SOUNDCHECK



MIA performing amidst the crowd at the Bowery Boston venue

## Bowery Boston Upgrades

The Bowery Presents—with assistance from Scorpio Sound Systems—recently retrofitted its Boston venue with a new state-of-the-art sound system, which includes a d&b P.A and Avid Profile boards at both front of house and monitors. According to general manager Josh Bhatti, one of the overriding factors in determining which gear to select was how well artists and their touring crews could work the equipment. "Once we narrowed it down to a few systems," Bhatti adds, "factors such as how the equipment can fit into your venue and what are the right size speakers come into play. If the system doesn't sound good, it can quickly ruin the day for the artist and the patron.

"d&b has been putting out a great product for a number of years and is starting to make more and more strides into the U.S. with its gear," he continues. "The technology behind the speakers is second to none and the sound quality is unbelievable. From a design standpoint, the individual boxes are very compact, and in a club setting where every square foot is critical for the artist and for the sightlines of the audience, it's great to have such a compact system." The sys-

tem at Bowery Boston comprises Q Series boxes for mains and balcony fills, B2 subs, C Series sidefills and maxx monitor wedges.

As for the Avid boards, user-friendliness reigns supreme. "For the engineers who have limited experience on digital consoles, the Profile is very user-friendly, and with our great in-house engineers, learning is pretty simple. For those touring around and familiar with the Profile console, it makes the engineer's day when he or she can walk in here and pop in a USB stick and be up and running quickly. Also, the Pro Tools interface allows for multitrack live recordings of shows, which is light years above having the CD burner in the rack for a live recording."

The rest of the install saw brand-new gear including mic stands, amplifiers, road cases, mics and all-new electrical to minimize long cable runs.

"It's been smooth sailing with the system, and artist after artist has walked away extremely happy. More and more, we are hearing from fans coming to shows commenting on how great the sound is at the club, and we're really proud to have the best system in the city."

## fix it

### Cinematic Orchestra Monitor Engineer Paul Hatt

The Cinematic Orchestra usually uses wedge monitors, but for the Royal Albert Hall performance, almost all the bandmembers had to use in-ears, and we used wedges for the guest vocalists, supporting acts and as a general backup, along with some spot monitoring for the conductor and some sections of the London Metropolitan Orchestra. I took eight returns [on a Soundcraft Vi4] of mixed-down groups of first and second violins, viola, cello, brass, woodwinds, double bass and harp, and assigned them to eight

VCA's. Although I generally made the orchestra's presence felt in the band's in-ear mixes, I was mindful not to give them too much, as inevitably that amount of open microphones can quickly taint the mix if not pulled down appropriately at the right moments. I ran 11 stereo in-ear mixes, nine wedge mixes, plus two effects for this show and the Soundcraft handled it all with ease.



Some of the members of Deep Purple, from left: bassist Roger Glover, vocalist Ian Gillan and guitarist Steve Morse

## tour log

### Deep Purple

As Deep Purple travels through Germany and France, we spoke with FOH engineer Gert Sanner about the tour.

#### How long have you been mixing for Deep Purple?

I have been mixing Deep Purple for five years now. I was the system engineer before and was asked to take over when the previous engineer had other commitments.

#### Why did you choose the Soundcraft Vi1 for this tour?

I choose a Vi console because I like them a lot. The Vi1 is a full Vi with less features than the bigger Vi6, so I wanted to see how it would cope with my show. It did great and is now a fully accepted desk for Deep Purple. It was important to find out how compatible the boards are. We found a few little things that one has to know, but I came up with a show file that will work on any Vi console.

#### Do you have a specific mixing technique for this band?

Yes, keep it simple. They are a great band and fun to mix: 26 inputs; give me gates, three compressors and four effects—that's it!

#### What excites you about the new Soundcraft compact stagebox?

The new Stagebox is just big enough for my gig that I can take it on a plane as excess baggage. That includes the Multicore. So it's very compact without being a compromise. You can also use it on a big Vi to make use of your 96 channels without buying another big Stagerack. It's a very versatile tool.

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

I live in Birmingham, UK, but also often go to Germany to see the family. I like my work as a system tech, so quite often I can be found with lots of boxes and dirty fingers. It is a good way to stay in touch with people and new equipment. Apart from that, I like cooking and photography. I tend not to travel unless I have to—the sofa is just fine!



## Blues Travelers Deliver to Fans

It began as nightly recordings for archival purposes; for the past couple of years Blues Traveler has been offering concert fans a high-quality recording they can take home after the gig. But for FOH engineer Adam Fortin, who has been with the band since 2006, finding the right combination



of gear to get the best multitrack recordings with some digital consoles has been a challenge. However, he struck gold with a DiGiCo SD8 hot-rodged with an RME MADIFace 56-track interface to multitrack 34 channels straight to a MacBook Pro with an Express port.

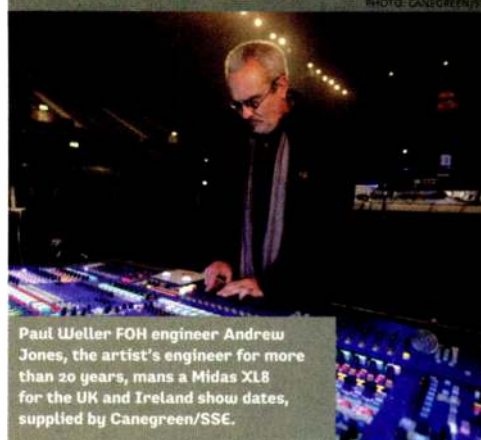
Blues Traveler may be one of the hardest working bands on the scene today. For more than 23 years, the quintet has been making soul-filled rock music together, as witnessed by eight studio albums and four live discs, six of them certified Gold or Platinum, with combined worldwide sales of more than 10 million units. Along the way, the band has played more than 2,000 live shows in front of more than 3 million people.

"The recording aspect of it is really what sold me on the console," Fortin says. "When Big House Sound purchased the two SD8s, I was excited to get my hands on the desk to try with Blues Traveler. I'm running about 40 inputs off the deck, most of which is for the multitrack recording. The

RME MADIFace lets me multitrack the band for the first time at a very low cost with no extra outboard interfaces that were proprietary to their software, and it's all because of the MADI standard language."

Fortin takes a matrix left/right out, which gets mixed along with a couple of mics at FOH. "I'm able to add delay to my left/right mix back to the microphones and bus that out to a couple of outputs into my Tascam CD-RW900, and everything is aligned from there. I typically add a few seconds of delay on the main P.A., which varies day to day, depending on the distance of the main P.A. hang to the main vocal mics. When I use room mics for the live feel of the audience, I will also delay these to align all sources, which creates a tighter live recording. As soon as I'm done with the recorders, I can go straight to a Microboards tower duplicator, which is a great machine. As soon as a show goes down, 20 minutes later—using my 7-burn/1-read unit—I've got all the copies I need available for purchase at our merch booth."

## load in



Paul Weller FOH engineer Andrew Jones, the artist's engineer for more than 20 years, mans a Midas XL8 for the UK and Ireland show dates, supplied by Canegreen/SSE.

Moscow-based music venue **B1 Maximum** re-opened after a major refurbishment and change of identity to **Az**. The new system includes **JBL VerTec** arrays installed by concert sound rental company **Euroshow**...In other renovation news, **Scottsdale Center for the Performing Arts'** (Scottsdale, Ariz.) refurbished system comprises **Electro-Voice XLC127DVX** compact line array elements provided by **AVDB Group**... **ABBA: The Concert** performed by **AbbAgain** is a live reconstruction of the 1979 ABBA performance at Wembley, featuring more than 13 musicians and 150 minutes of ABBA songs. To distribute the audio at the various tour locations, the show uses **Riedel Communications RockNet** digital audio networks, which are combined with six **Rock-Net RN.141.MY** interface cards for digital **Yamaha** consoles...**Rat Sound Systems** took delivery of 18 **L-Acoustics KARA** loudspeakers...**Gand Concert Sound** provided a 42-box flown **NEXO Geo T** array for **Snoop Dogg** and opener **Kid Curi** show date at Northwestern University's **Welsh-Ryan Arena**. **Yamaha PM5D** boards were at FOH (**Dave "Dizzel"**) and at monitors ("**Kez**"); mics were all **Shure** except for Snoop's RF (custom **Sennheiser**).

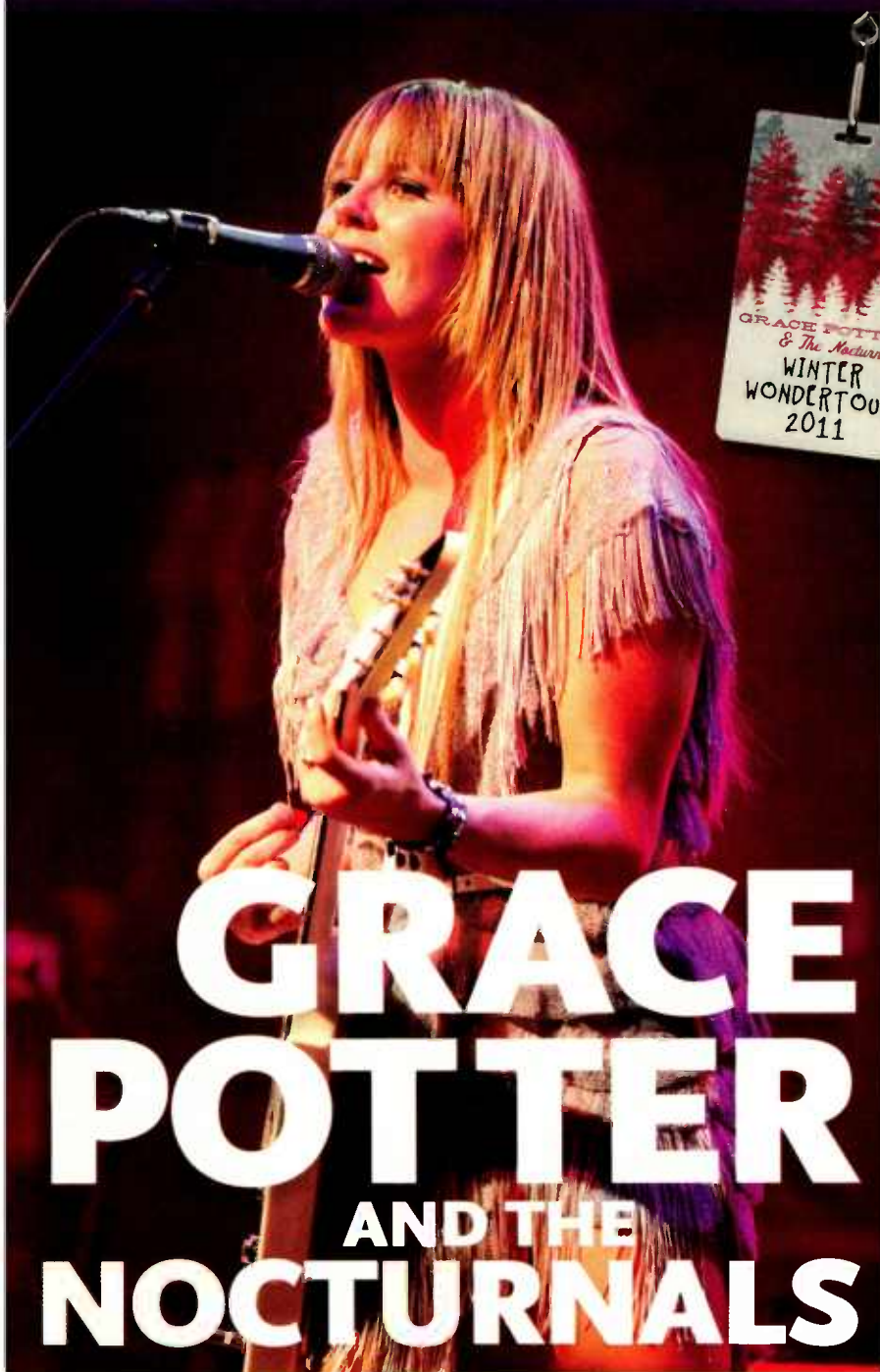
## Flores Takes PM5D for a Spin

Completing his first leg of his North American tour in mid-November and back out early this year, Jason Derulo's monitor engineer, Billy Flores, is mixing on a Yamaha PM5D. Clair Global supplied snake and mic package, stage boxes, power, and Sennheiser, Neumann and Shure RF systems. Derulo sings half the show on a Crown 311 head set mic into a Shure UR beltpack and receiver; for the other half of the show, he's on a Shure UR SM87. "Everyone is on ears, including Jason,"

says Flores. "The full band includes drums, guitar, key/bass and keys, as well as two background singers, and Jason sings on top of eight channels of Pro Tools [tracks], so I use about 40 channels of the PM5D when all is said and done."

"The Yamaha PM5D is like second nature to me," adds Flores. "The console has a quick response, clean digital mixes and all the feel of an analog desk. You don't get lost looking at the console, saying to yourself, 'Where do I start?'"





# GRACE POTTER AND THE NOCTURNALS

Making a name for themselves on the jam-band and festival circuit in 2008/2009, the formerly four-piece Grace Potter & The Nocturnals (the band brought in bassist Cat Popper, who had played with Ryan Adams & The Cardinals, and guitarist Benny Yurco in 2009) are touring mid-sized venues for their new, self-titled release. *Mix* caught up with the band and slimmed-down crew at the Fillmore Auditorium (S.F.).



Vocal mics are Telefunken M80s. FOH engineer Sam Leonard says he enjoys how they let the vocals really sit on top of the live mix. He also notes that they are pursuing an artist-endorsement deal with Sennheiser.



Guitarist Scott Tournet's pedal gear includes a Fulltone Full-drive 2 Overdrive, Boss FV-500L Volume Pedal, Cusack Screamer Fuzz, Electro-Harmonix Nano Holy Grail reverb and a Line 6 M9 multi-effects processor.





Front-of-house engineer Sam Leonard is relying on house-provided production and monitor engineer. He requests an Avid VENUE SC48 board, citing its small footprint and ease of use as pluses. "The control surface responds well to the touch, and the layout allows me to quickly navigate for adjustments," Leonard says. In the analog domain, he asks for a Midas Heritage 3k, noting that the warmth of the mic pre's and the EQ is hard to beat. "When it comes to plug-ins," Leonard says, "I like Line 6 Echo Farm Vintage. I also love anything from Waves; their C6 multiband compressor, the L3 Ultramaximizer and the MaxxBass are all really impressive. For rack gear, I am a big fan of the TC Electronics D2 for outboard delays. I also love their Reverb 4000 unit. The Lexicon PCM 92 is another favorite."

While it is P.A. du jour, Leonard's top P.A. choices include JBL VerTec, Meyer Sound MILO or MICA, or an Electro-Voice, d&b or Clair Global system. The band has about 10 wedges onstage. "Our show is high-energy rock and the levels can get loud," he says. "We are just about to implement [Westone] IEMs for most of the band. Mixing the band is quite fun. They give me flexibility and allow me liberties with producing the live mix, and in the end, we always make it fun."



Stage tech Josh Mockerman

Guitarist Ben Yurco's footpedal gear comprises a Boss TU-3 Tuner, Cusack Screamer V2 Overdrive, Xotic Effects EP Booster, Ernie Ball Volume pedal, Boss TR-2 Tremolo, Ibanez AD9 analog delay and an MXR Carbon-Copy analog delay.



Grace Potter's keyboard is a vintage Hammond B3 with a Leslie cabinet. Her only pedal is an Electro-Harmonix Nano Holy Grail.



Mics for Matt Burr's kit include AKG D112 (kick inside); Shure Beta 52 (kick outside), SM57 (snare top), Beta 57A (snare bottom), SM81 (hi-hat) and KSM 32s (overheads); and Sennheiser 604 (rack tom and floor tom, both bottom heads removed and miked from below).



Bassist Catherine Popper is using an Ampeg SVT Classic head and 8x10 cabinet. Grace plays a mid-'60s Fender Vibrolux Reverb, which is usually mic'd with an SM57. She does not use any pedals other than a Boss TU-3 tuner, preferring to go directly into the front end of an Ampeg head.



# Tech

## ROAD-WORTHY GEAR

### Amp It Up

#### Crest Pro-Lite Series Amps

Crest Audio's ([crestaudio.com](http://crestaudio.com)) Pro-LITE Series of amplifiers include the Pro-LITE 2.0 and Pro-LITE 2.0 DSP, which feature a lightweight Class-D design and stable performance into 2 ohms. The Pro-LITE 2.0 and Pro-LITE 2.0 DSP boast 985 watts/ch., weigh less than 10 pounds, and are rock-solid in parallel, stereo and bridged modes. The Pro-LITE 2.0 and Pro-LITE 2.0 DSP will be available in Q1 2011.



### Power On

#### Electro-Voice

##### Live X Series

The Live X Series of powered and passive loudspeakers from Electro-Voice ([electrovoice.com/livex](http://electrovoice.com/livex)) includes three powered systems: two full-range loudspeakers and a matching subwoofer. Each powered model has integrated 1,000-watt and 700W Class-D amps. Both full-range systems can be pole-mounted or stacked with the series' acoustically matched powered subwoofer. The Live X family also features four passive configurations, including a dual-15-inch system.



### Mix and Match

#### Telefunken M80-WH Wireless Head

Now available, the M80-WH dynamic wireless capsule head replacements from Telefunken ([telefunken-elektroakustik.com](http://telefunken-elektroakustik.com)) are interchangeable with any of the screw-on-style handheld transmitters with a 31.3mm/pitch 1.0mm threading, such as those from Shure, Line 6 or Lectrosonics. The M80-WH capsule's cardioid pickup pattern and wide response yields a mic that's sonically open, requiring little or no EQ to fit into a live mix.

### U.S. Debut

#### HK Audio Elements

High-performance German speaker company HK Audio ([hkaudio.com](http://hkaudio.com)) enters the U.S. market and is distributed by Korg USA. The new Elements modular system merges modern line array technology with the portability and ease of ultracompact P.A. systems. Using six easy-to-combine components (top and sub boxes), the system can be configured to support anything from small gigs to a 3,600W concert rig.



### Cords No More

#### Shure PGX Digital Wireless

Shure ([shure.com](http://shure.com)) has unveiled its first digital wireless system. The new PGX Digital wireless features 24-bit/48kHz digital audio precision, extended battery life and the convenience of 900MHz band operation—all in user-friendly packages for handheld (with SM58 or Beta 58A capsules), instrument (guitar cable or clip-on Beta98H/C) or presentation form with lavalier or headworn mics.



### All Lined Up

#### Yamaha DSR Series

Yamaha's ([yamahaca.com](http://yamahaca.com)) new DSR Series loudspeaker line includes the full-range (single-woofer DSR112 and DSR115; and double-15 DSR215, with 2-inch neodymium-magnet HF drivers) and a single-18 DSR118W sub. All feature onboard Class-D amps, with all-new D-Contour multiband dynamic processing, integral digital tuning, intelligent dynamic control and extensive DSP protection. III





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Designed to complement ART's world class line of studio preamps and processors, M-Series microphones are expertly engineered by Applied Research & Technology to deliver the quality and performance professional studios would expect, at a price any home or project studio will embrace.

*\* M-One package includes heavy-duty hard tail standmount*



M  
ONE

Large Diaphragm Cardioid  
Side Address Condenser

M  
TWO

Large Diaphragm Cardioid Side  
Address Condenser w/ Two  
Position Pad & Roll Off

M  
THREE

Large Diaphragm Multi-Pattern Side  
Address Condenser w/ Two  
Position Pad & Roll Off

M  
FOUR

Multi-pattern Tube Condenser  
Microphone

M  
FIVE

High Performance Ribbon  
Microphone



NEW PRODUCTS

# HITS OF WINTER NAMM 2011

By the Mix Staff

This 2011 Winter NAMM show (held January 13-16, Anaheim, Calif.) was a record-setting event, with 90,114 registered attendees checking out 1,417 exhibitors in the Anaheim Convention Center. There was plenty of new gear and choosing the *Mix Certified Hits* (our choices for the show's Top 20 products) proved particularly difficult. Listed here, alphabetically, are our selections.

## Alesis StudioDock

Apple's iPad has proven itself ideal in all sorts of pro audio/music applications, with a nearly endless supply of useful apps available. Its main drawback had been a lack of pro connectivity, but the Alesis (alesis.com) StudioDock, an audio interface for the iPad, features two XLR/1/4-inch



Alesis StudioDock

jacks (each with its own gain control and switchable phantom power) and MIDI In/Out ports. StudioDock can also connect to a Mac or PC using its USB port to send MIDI back and forth for creative, new applications of the iPad and computer used in tandem.

## Dangerous Music Dangerous Liaison

Dangerous Music's (dangerousmusic.com) Liaison is a point-to-point, hand-wired box for ultra-fidelity switching/patching/routing of analog gear in mixing or mastering applications. Easy, switchable control—with six insert points and parallel effects loops—adds ease of operation for instantly trying

various combinations or ordering of gear, such as EQ-before-compressor or parallel effects chains.

## Dave Hill Designs RA Plug-In

New from Crane Song founder Dave Hill (davehilldesigns.com) is RA, a nonlinear plug-in that emulates amplifier overload, providing control over even-order harmonics, compression of low-level audio and peak level. It's available for Mac TDM systems only, with a version for PC TDM in the works.



Dave Hill Designs RA Plug-In



Dangerous Music's Dangerous Liaison





Fairlight CMI-30a  
Computer Music  
Instrument



DPA 2000  
Series



JBL EON515XT



Electro-Voice  
RE320



Focusrite RedNet



Korg Kronos  
Keyboard

### DPA 2000 Series

The new 2000 Series mics are DPA Microphone's (dpamicrophones.com) first models to be available for less than \$1,000. The heads and bodies are separate, and the bodies are compatible with DPA's higher-end capsules for easy upgrades.

### Electro-Voice RE320

Derived from E-V's (electrovoice.com) classic RE20, the new RE320 culls key features of the company's venerable RE20 and RE27N/D mics into a versatile studio and live performance tool. The RE320's "dual personality" essentially creates two mics in a single body: One setting engages a response curve that's ideal for voice and most instrument miking; the other position activates a response designed for kick drums.

### Fairlight CMI-30a Computer Music Instrument

The classic Fairlight (fairlightinstruments.com.au) CMI sound is back as the CMI-30a 30th-anniversary model, which updates the sounds and power of the original CMI system in a retro-styled package (complete with light-

pen control) but using a Fairlight CC-1 Crystal Core FPGA engine under the hood. The project is driven by Fairlight co-founder Peter Vogel, and sound quality is continuously variable using the unique Goodness control, which spans from Series I, II or III quality to the "best possible" 36-bit floating point.

### Focusrite RedNet

Focusrite's (focusrite.com) new professional audio networking system, RedNet delivers all the features required in a professional studio environment, offering a robust, reliable networking technology. It's based on Audinate's proven Dante digital audio networking technology, using standard IP-based networking and components such as Ethernet cables, routers and switches to carry up to 256 channels (128-in/128-out) of high-resolution digital audio over a standard Ethernet network.

### JBL EON515XT

JBL (jblpro.com) takes its popular 15-inch EON system to the next level with improved input sensitivity, a lowered noise floor, user-selectable EQ control and a re-voiced system for peak per-

formance. EON515XT combines a JBL 2414H HF neodymium compression driver and a 15-inch JBL 265F-1 Differential Drive woofer matched to a Crown Class-D amplifier to deliver 132dB maximum SPL while keeping the weight at a low 32.5 pounds.

### Korg Kronos Keyboard

Offered in 88, 73 and 61-key versions, Kronos (korg.com/kronos) was one of the most talked-about products at the show. It features nine synth engines of various types and can switch sounds seamlessly (or instantaneously) while being played, thanks to its Virtual Memory Technology and a fast Solid State Disk, even from huge 4GB acoustic piano samples. From ethereal textures to complex layered tones, Kronos covers a huge range of sonic territory, as well as classic keyboards, pianos, tonewheel organs and electric pianos, and orchestral, percussion and pop sounds.

### Lectrosonics Quadra Digital Wireless IEM

The Quadra digital wireless in-ear monitor system from Lectrosonics (lectrosonics.com)

comprises the M4R (\$1,765) belt-pack diversity receiver and the M4T (\$2,875 MSRP) half-rack transmitter, and features digital RF modulation, two or four channels of 24-bit/48kHz digital audio, and analog or digital inputs. A 4-channel mixer enables the performer to tailor the mix in real time based on what is sent to the transmitter from the monitor console.

**Mackie MRmk2 Studio Monitors**

The MRmk2 Series marks a complete redesign of Mackie's (mackie.com) best-selling line of affordable powered studio monitors. Both the 5.25-inch woofer MR5mk2 (\$199 pair, MSRP) and 8-inch MR8mk2 (\$329 pair) are powered two-way designs with a 1-inch soft-dome neodymium tweeter on a wide-dispersion waveguide. Inside the rear-ported cabinet is a Class-A/B amplifier section with XLR, TRS and RCA inputs, and controls for acoustical correction.

**Midas VeniceF Mixer**

The new VeniceF analog console offers FireWire multichannel digital audio I/O with

the full functionality and sound quality of the much-loved Midas (midasconsoles.com) XL3 EQ and filter section, as well as the company's mic preamps, a dual 7x2 matrix and a reorganized master section layout. The VeniceF 320's 32x32 FireWire capability adds 32 channels of multitrack recording/playback to any FireWire-equipped computer for virtual soundchecking or running third-party plugins on channel inserts or routed via aux sends and returns.

**PreSonus StudioLive Remote iPad App**

The PreSonus (presonus.com) StudioLive Remote software offers wireless control of any StudioLive Series digital mixer's channels, auxes, effects, subs, Fat Channel processors and more. We've seen a number of iPad mixing apps, but this takes it up a notch with slick features such as rotating the iPad from landscape to portrait view to instantly bring up a detailed view of DSP parameters (gate, compressor, EQ, etc.) with a flick of the wrist. The app is free and ships with PreSonus' 24- and 16-channel digital mixers.

**QSC KLA Series Line Array**

Built on the same power platform as the K Series and KW Series powered loudspeakers, the KLA active line array system from QSC (qscaudio.com) combines the KLA12 12-inch, two-way line array element and the KLA181 18-inch subwoofer enclosure. Both models feature a 1,000W Class-D power module with QSC's Intrinsic Correction for optimal acoustical performance. The KLA System's self-contained SOLO (Single-Operator Logistics) rigging system lets users quickly assemble a line array in a fraction of the time of comparable systems.

**Sennheiser MK 4**

Sennheiser's (sennheiserusa.com) first large-diaphragm side-address mic, the MK 4 is a cardioid, true condenser design. It features a nickel-colored finish and has a large gold-sputtered 1-inch diaphragm, while its elastically mounted capsule suppresses stand or handling noise. Specs include a max SPL of 140 dB and a low 10dBA self-noise.

**Shure Axient**

The Axient (axient.net) wireless microphone



Sennheiser MK 4

QSC KLA Series line array

Lectrosonics Quadra digital wireless IEM

Midas VeniceF mixer

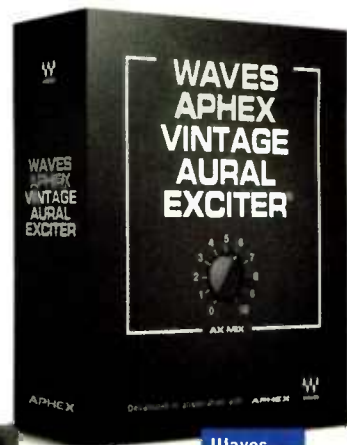
Mackie MRmk2 studio monitors

PreSonus StudioLive Remote iPad app





Steinberg Cubase 6



Waves Aural Exciter plug-in



Shure Axient



Sonodyne studio monitors



Universal Audio UAD-2 Satellite

system is designed to avoid interference by automatically changing frequencies, detecting RF interference and enabling the system to move to a clear and compatible frequency in milliseconds. A Frequency Diversity feature transmits full-bandwidth audio on two separate frequencies for seamless, uninterrupted audio for mission-critical channels, even in the face of direct RF interference. ShowLink remote control lets users make real-time remote adjustments of transmitter settings from the receiver or a laptop while the mic is live. Axient Spectrum Manager constantly scans the RF environment and performs frequency-compatibility calculations to assign clear frequencies to each transmitter.

### Sonodyne Studio Monitors

Sonodyne ([sonodyne.com](http://sonodyne.com)) monitors are now available in the U.S. The smallest monitor in the range, the SM 50Ak active design (\$1,050 pair), delivers 45W to the 5.25-inch woofer and 45W

to the tweeter for a 70-22k Hz response. Also bi-amplified, the SM 100Ak (\$1,400 pair) supplies 80W to a 6.5-inch woofer and the same 45W powered tweeter for more low-end response and greater SPL.

### Steinberg Cubase 6

Cubase 6 and Cubase Artist 6 from Steinberg ([steinberg.net](http://steinberg.net)) offer a bevy of new features, including enhanced workflow options within the Project window and Track Edit Groups, which allows users to group and edit related events on multiple tracks at once. Other features include Lane Track for conveniently comping multiple takes; redesigned transient and automatic tempo detection; phase-accurate audio quantization; and drum-replacement functions to smooth out any glitches in live recorded drum tracks.

### Universal Audio UAD-2 Satellite

Universal Audio's ([uaudio.com](http://uaudio.com)) UAD-2 Duo

and Quad Satellite family of DSP accelerator packages (with two or four SHARC processors) put the entire UAD Powered Plug-Ins library within easy reach of any FireWire 800- or 400-equipped computer, with no PCIe card installation required. Compatible with a wide range of modern Intel-based iMacs and MacBook Pros, these let users run larger mixes in Pro Tools, Logic, Cubase, Nuendo, Digital Performer and more—without taxing the host computer's CPU.

### Waves Aural Exciter Plug-In

Waves ([waves.com](http://waves.com)) has collaborated with Aphex to create the Waves Aphex Vintage Aural Exciter, a plug-in based on one of two prototype tube-powered Aural Exciter units developed during the mid-'70s. The software-modeled version is designed to deliver all of the unique character of the rare original hardware unit, with all the advantages of software control. III



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## Cakewalk SONAR X1 Producer Edition

**New GUI and ProChannel Has This PC DAW Looking, Sounding Great**

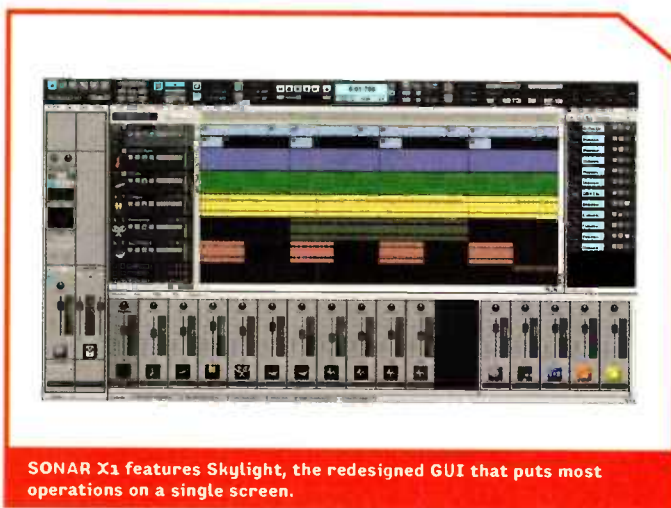
Cakewalk's SONAR has been annually upgraded for close to a decade now, evolving into a full-featured Windows DAW that in some instances has been ahead of the competition. SONAR has led with features like surround integration, full 64-bit processing, V-Vocal pitch correction, ACT (Active Controller Technology) and a full roster of included virtual instruments, to name a few. The SONAR X1 Producer Edition continues to tempt its users to upgrade with a redesigned GUI featuring the Skylight workspace environment, plus revamped Smart tools, ProChannel processors and FX Chain presets.

SONAR X1 comes in three versions: Essential (\$99), Studio (\$199) and the top-of-the-line Producer Edition (\$399), reviewed here. I ran the Producer Edition (X1A build) on a PC with a 3GHz Intel Core Extreme CPU Q6850, 4 GB of RAM and a fully updated Windows Vista 32-bit system including Service Pack 2. Input/output duties were handled by a MOTU 828mkII FireWire interface updated to the latest drivers.

### Feng Shui Workspace

Launching X1 reveals the new Skylight user interface. The idea is to clean up screen clutter with an intelligent, single-window layout, thus minimizing changing screens or views. The main components of Skylight are the Inspector, Browser, MultiDock and Control Bar.

The Inspector—which can be docked, floated or fully collapsed—provides access to



SONAR X1 features Skylight, the redesigned GUI that puts most operations on a single screen.

clip, track and channel data. On a selected track, you can call up a complete channel strip, X1's new ProChannel and clip properties, including automation, notes, color and advanced MIDI functions.

X1's new Browser is a workflow hub for dragging/dropping content into your workspace. The Browser provides quick access to media files, including audio/MIDI files, templates, video files, plug-ins, instruments and even ReWire devices. With this feature, I was dropping loops and plug-ins into my workspace faster than on any other DAW I've worked with. The only negative I found was not being able to drag from the workspace back to the browser—for example, after creating a new clip or loop.

The MultiDock is a major component of Skylight, allowing frequently visited views or windows to be grouped and tabbed through. In my session, I had the Console view (mixer) and my master fader plug-ins docked together. This arrangement allowed me to work in my Track view workspace and tab between the Console view to plug-ins like the Analyst spectrum analyzer and Boost 11 peak limiter with ease. The MultiDock may be collapsed, expanded or placed on a separate monitor for maximizing workspace real estate.

The Control Bar has modules housing of

ten-used parameters and data for recording and editing. The Screenset module lets you take up to 10 snapshots per project; this includes the entire layout, views and windows in a session. You can create a Screenset for tracking, writing and a completely different layout within Skylight for mixing, as an example. The Screensets are easily recalled via the Screenset module in the Control Bar or numbers on the keyboard. I did run into a glitch with this feature when one of the scenarios I created included a couple of plug-ins in the MultiDock.

Whenever I would recall that Screenset, the plug-ins became undocked and floating. I had to drag them back into the MultiDock to match the Screenset I was trying to save.

Also accessible in the Control Bar is the new Smart tool. Much like Pro Tools' Smart tool, it changes operationally depending on where you hover over the waveform. Unlike the Pro Tools version, X1's Smart tool works in Piano Roll, Staff and Tempo views. Editing MIDI data was extremely easy and fast with the single Smart tool, and if I needed other tools—like the Draw tool for writing MIDI data—striking the letter "T" on the keyboard brought up a floating HUD (Heads Up Display) next to the cursor, offering other tool selections.

Another feature in SONAR X1 worth mentioning is the ability to save an entire chain of plug-ins into its own preset. These can then be dragged and dropped from the browser or easily called up via any track's effects bin with a right-click. I quickly created presets for my kick and snare and successfully loaded them into different sessions. This keeper workflow feature left me wondering how I ever worked without it.

### Meet the ProChannel

SONAR has always included an impressive roster of plug-ins right out of the box. My past favorites have included Perfect Space Convolution

### PRODUCT SUMMARY

**COMPANY:** Cakewalk

**WEB:** cakewalk.com

**PRODUCT:** SONAR X1 Producer Edition

**PRICE:** \$399

**PROS:** Skylight and ProChannel features are excellently conceived and designed.

**CONS:** Some glitchiness with the ProChannel above 48k sample rates in Build 1A.



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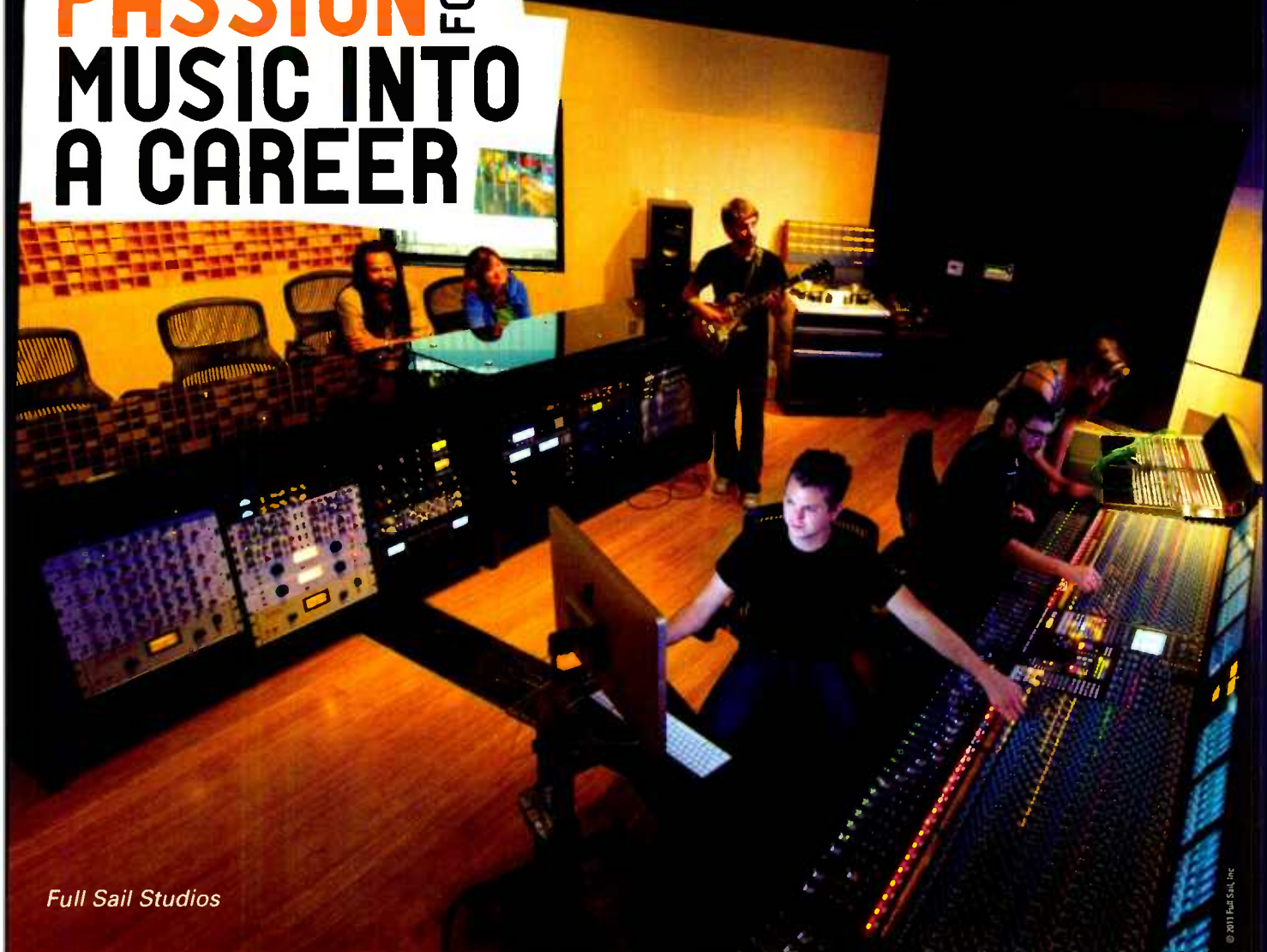
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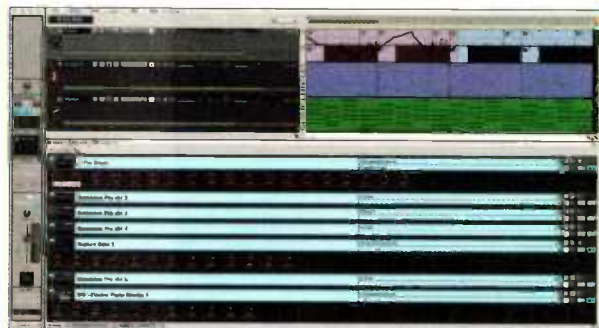
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reverb, VC-64 Vintage Channel and the TS-64 Transient Shaper. In this upgrade, SONAR X1 is packing a Producer Edition exclusive called ProChannel. Built into every channel, ProChannel includes EQ, compression and tube saturation with no need to launch separate plug-ins. All three processors can be individually bypassed and configured in any routing order. The compressor section offers the PC76 U-Type and the PC4K S-Type, designed in the spirit of the legendary UA 1176 limiter and SSL

bus compressor.

The PC76 has the same controls as an 1176, including the all-buttons-down Nuke mode. During a 24-bit/48kHz session, I used the PC76 on a rock snare at a 4:1 ratio with 4 dB of gain reduction and a



Various operational screens can be multi-docked and viewed in Full or Slim modes.

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fast release, giving me the aggressive sound I was expecting, tucking the snare nicely in the track.

The PC4K S-Type bus compressor has parameters reminiscent of the real deal, including a program-dependent release time to prevent pumping. In addition, there's a sidechain input with a variable highpass filter. The PC4K is more useful across a bus or on the master, which is what I'm most familiar with and how I used it. My parameters started with a 2:1 ratio, attack of 10 ms, release set to Auto and 4 dB of gain reduction. The PC4K had a similar, tight midrange characteristic and served well as a cohesive bus compressor, but when compared to the real thing, it lacked the low-end punch of the SSL. A welcome feature to both compressors is a wet-to-dry blend allowing for a parallel compression effect without extra routing.

The ProChannel EQ offers three styles: Pure (clean, transparent mastering EQ), Vintage and Modern—all the result of different interactions between Q and gain settings, with six bands: low, low-mid, high-mid and high parametric, and high/lowpass filters. The low and high bands are switchable between shelving and bell curves, while the high/lowpass filters include variable slope. A Gloss button adds a smooth presence to the high frequencies, and I enjoyed it over the whole mix. It sounds like a high-shelving filter around the 12kHz region without any harshness.

There's also a Tube Saturation module that includes input, drive, output, and Type-1 or -2 saturation modes. Type-1 models pure tube saturation and Type-2 emulates a dual-tube setup with controlled high-frequency processing to avoid sibilant harshness. On a snare track with the PC76, Type-2 saturation gave the snare a character reminiscent of a Distressor, enhancing second and third-order harmonics. This



also proved valuable on a bass guitar DI track that was a bit too sterile in the mix. Depending on the Drive control, the results can be a subtle harmonic distortion to all-out clipping.

I found ProChannel to be glitchy on sessions at either 88.2 or 96 kHz. One session had four audio tracks and SONAR's Session Drummer2, while the other session had 12 audio tracks. When first activated, things seemed fine, but once I changed any of the parameters, I experienced popping and erratic performance, usually leading to a complete crash. Sessions at 44.1 or 48 kHz worked flawlessly, and I'm sure Cakewalk will address the issue in a future update.



The ProChannel features a compressor, 4-band EQ and Tube Saturation controls.

### Take It Home

SONAR X1 is a solid, well-designed upgrade: I'm a big fan of the new GUI and Skylight. It's elegant, easier on the eyes and filled with workflow features. Skyline is so well-laid-out that I rarely needed to do the window-switching shuffle, and things are even better with the MultiDock placed on a second monitor. Screensets and the Control Bar continue the custom theme with the ability to satisfy anyone's personal needs. The new Browser plays a big role in the success of Skylight, with complete drag-and-drop capabilities of content into the workspace. The Smart tool was a much-needed addition for ease of editing waveforms in Track view and MIDI data

in the Piano Roll view.

In addition to the arsenal of stock plug-ins and instruments already included in SONAR X1, the new ProChannel sounds very good, but it did show some erratic performance. However, Cakewalk reports that its soon-to-be-released X1B update addresses the problems I experienced with docking and higher sample rates. That said, I found the PC76 to be a very authentic model with an aggressive FET attack and presence. The EQ is very usable, and the Gloss function added a nice top-end sheen to program material. The Tube Saturation not only harmonically warmed up tracks, but could also be used in a very trashy, yet creative way.

If you're familiar with SONAR, X1's new GUI and Skylight workflow advancements alone will spoil you and are worth the upgrade. For first-timers, consider SONAR X1 Producer Edition a complete Windows DAW that will handle any audio task you throw at it. III

Tony Nunes is a Phoenix-based audio engineer and educator.

# Reality Check

*Chris Pelonis*  
Signature Series

## Model 42



*Chris Pelonis*  
Signature Series

Model 42



Contact Chris Pelonis- [www.pelonissound.com](http://www.pelonissound.com)

## Pelonis Sound and Acoustics Model 42

### Compact Studio Monitors With a New Slant

It doesn't happen often, but every once in a while I encounter a studio near-field reference monitor that really gets me jazzed about listening. A relative newcomer, the Pelonis Sound Model 42 is ready to make its mark in control rooms everywhere. Created by award-winning studio designer Chris Pelonis, the Model 42 is the newest release in the Pelonis Signature Series, which ranges from the two-way PSS110P to the four-way, 1,000-watt, dual-15 Model 215AW active reference system. All the Pelonis monitors are based on Tannoy's Dual-Concentric coaxial drivers, with custom cabinets and electronics.



To maintain their small footprint, the Model 42 speakers come with external amplification and DSP.

#### Enter the Model 42

The smallest in the line, the Model 42 puts 4-inch, two-way Dual-Concentric drivers into patent-pending, rhomboid-shaped enclosures that are fed from a single-rackspace DSP controller/crossover/amplifier unit. The Model 42s are barely larger than an Auratone cube, but don't let their diminutive size fool you. Beyond those 6x8-inch front-ported baffles, there's a lot going on. Rather than going the self-powered route, with electronics inside the speakers, Pelonis opted for an external system controller, which offers numerous design advantages. The speaker boxes can be kept as small as possible—there's no need to supply AC power to each speaker—and the design/selection of the crossover and amplifiers is not compromised by the requirements of space and/or heat management, which are two major considerations in any self-powered speaker.

#### PRODUCT SUMMARY

**COMPANY:** Pelonis Sound and Acoustics

**PRODUCT:** Model 42

**WEBSITE:** pelonissound.com

**PRICE:** \$999 pair (with amp/controller)

**PROS:** Compact size. Slanted baffles offer versatile placements. Flat frequency response. DSP control available via free software.

**CONS:** Caution is required to avoid damage from reversed LF/HF driver hookup during setup.

The controller's custom, 4-channel Class-D amp delivers 100W to each of the 4-inch multi-fiber, paper-pulp cone woofers and coaxial neodymium magnet HF drivers with 0.75-inch titanium domes. The rack also contains the active crossovers and a DSP section for system tweaks, accessible via a front panel USB port for connection to a free Mac/PC control app. Inputs are Neutrik combo XLR/TRS jacks (with a -10/+4dB sensitivity switch) that accept balanced or unbalanced lines. Amplifier outputs are standard five-way binding posts.

Setup is easy—it's mostly plug-and go. However, this is a bi-amplified system with external connections via (supplied) 3-meter speaker cables with tinned bare ends. You really need to double-check how you've attached those eight speaker terminals on the amplifier end and the four on each speaker to ensure proper polarity and that the HF and LF lines are not reversed. Some color-coding to prevent the (disastrous) latter condition would be a nice addition on future models. Another possible improvement would be a recessed sensitivity switch. I accidentally bumped it, changing the setting several times while connecting all those speaker lines during setup.

The software provides access to DSP parameters, although this is optional and not necessary to operate the monitors. The app is fairly basic—the GUI isn't exactly slick, but it is easy to use and

navigate. From a main page, you have remote access to controlling mute, L/R speaker solo, L/R level match, alignment delay (1 to 10 ms) on either side or both, and a versatile system equalizer. The EQ is a 5-band parametric, with the two outer bands switchable to provide LF or HF shelving control. Designed for system tweaks, the EQ has a +3/-18dB gain range and adjustable Q from an ultra-wide 0.5 to a narrow, surgical 20 ratio. The software can store an almost endless number of DSP presets, so you could create an entire library of tweaked settings to emulate other monitors, presets for different rooms

they work in or "how I like it" preferences.

#### The Sound

The DSP access for tweaks is nice, but the Model 42s sound great right out of the box. The effect is listening to a much larger speaker. The LF response is down about 3 dB at 75 Hz, but there was no feeling of "where's the bass," and these are nearly ruler-flat out to 20 kHz, with HF extending beyond 35 kHz. Pelonis is currently working on an optional subwoofer; in the meantime, I also tried the 42s with a JBL LSR sub with great results. The key to the Model 42's sound is its consistent response at nearly any volume, with the bass only becoming nonlinear at extreme (i.e., painful) levels. The system offers tons of headroom and incredible levels of low-level detail with no distortion or listening fatigue.

The use of the rhomboid shape is brilliant. Placed on the meter bridge in my main control room (almost exactly ear level), the slanted front baffle pointed the speakers slightly inward—right on-axis. For studios with a very high meter bridge, the 42s can be rotated on their side to point slightly downward. I later used them in my video post suite at desktop level; here, the 20-degree slant was just right to keep the monitors pointed slightly upward toward me. This proved to be a real revelation—near-field listening without console reflections! Anyone looking for a new slant in monitoring should check these out. ■





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## Airfield Audio Liminator 2 Compressor

### Hand-Made Opto Gain Reducer With Sowter and Jensen Transformer Choices

David Miller's Toronto, Canada-based Airfield Audio specializes in updates, upgrades and recaps of a wide range of vintage analog gear and consoles from Neve, Drawmer, UREI, Gates and even Dolby 363 SR modules. He also hand-makes the Liminator Series of mono and 2-channel compressors. The Liminator 2 (reviewed here) is a stereo opto attenuator compressor featuring completely variable threshold and output gain; 5-step attack, release and ratio controls (1.5 to 20); and a three-way switch that takes you through bypass (relay), T2 (Sowter Transformer) and T1 (Jensen Transformer) options. Other features include analog meters switchable between input, output and gain reduction; +4/+14dBu meter level switch; and a Link switch.

Popping the top unveils the ample power supply that sports a beefy toroidal transformer and Carnhill output transformers. It also shows that the switches and pots are high-grade and hand-tested within tight tolerances, evidenced by their specs penned in Sharpie on their backs. The circuit board is made with 3-ounce copper, and all connections use silver solder; you can tell this box received a lot of love from start to finish.

#### Like a Tank

Out of the box, you can't help but notice that the Liminator 2 is built for the long haul. Its military styling, solid build, chicken head knobs and vintage analog meters beg you to start tweaking, which is exactly what I did. I got this box just prior to a voice-over I had to record for

Mix's Mackie Webcast (available at [mixonline.com](http://mixonline.com)). As I knew this was going out over the Web, I needed all the help I could get to produce a great-sounding track prior to the squeeze that was going to happen once it was married to video and streamed. I used an SE Electronics RNR1 ribbon mic powered by a Mackie Onyx

stereo bus mix, all with great results. I tend to like a more hands-off compressor across the entire mix, but I found that the Liminator 2 can go from severely crushed to barely there with the flip of a few switches and fine adjustments. The ability to jump between the Jensen and Sowter makes this box incredibly versatile and subtle



The Liminator 2 features switchable Sowter or Jensen input transformers.

1640i preamp and patched one channel of the Liminator 2 across the insert. I set the threshold all the way down, set a lazy attack and release, and chose T1 (Jensen), and the results were startling. I was getting more than -10 dB of reduction at the peak, but there was no pumping, little noise and the tone was delicious.

Next I used it on a lead vocal on different sessions with different mics. In one session, preamps were from a C24 Pro Tools controller powering an SE Electronics Voodoo 2 active ribbon mic; in the other, I used the RNR1 powered by an SSL 4000 Series preamp. This particular vocalist is one I often work with. He's very talented, but his tone is always a challenge in that he offers a lot of midrange that can be grating if the signal chain is too revealing. I like to "color him down" using different dynamic mics and compressors rather than trying to solve the problem with EQ, which is a rabbit hole of phase shift. In both sessions, the Liminator 2 provided just the crush and tonal shaping I needed to tame this track down and sit it nicely in the mix.

I next used the compressor across sax overdubs, high transient drum submixes and my

in its range. In regards to the transformers, the sound shift is difficult to verbally quantify, but it is palpable and lovely to have as an option.

#### Class Actor

The Liminator 2 is at the top of the boutique compressor heap. It offers plenty of personality, flattering most everything it touches and giving the user many ways to add clean color to the signal path. I used it across a range of applications, but my personal favorite is what it does to the human voice. Even at better than -10 dB of reduction at the peak, as long as you are careful to avoid pumping, it sets the vocal up nicely in the mix and minimizes the need for a lot of riding. Tonally, the harder I hit it, the better it sounded, imparting a silky richness that is difficult to produce in the digital realm. I purposely used it across a range of preamps from very good to average and it dressed them all up deftly, making the total output sound better than the sum of its parts. If you're into "that analog" sound provided by quality Class-A circuitry, the Liminator 2 needs to be on your must-hear list. III

Kevin Becka is Mix's technical editor.

#### PRODUCT SUMMARY

**COMPANY:** Airfield Audio  
**PRODUCT:** Liminator 2  
**WEBSITE:** [airfieldaudio.com](http://airfieldaudio.com)  
**PRICE:** \$3,495

**PROS:** Sonically versatile. Dual transformer choices.

**CONS:** No negatives, but may be pricey for some.





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## iZotope Nectar Complete Vocal Suite Plug-Ins

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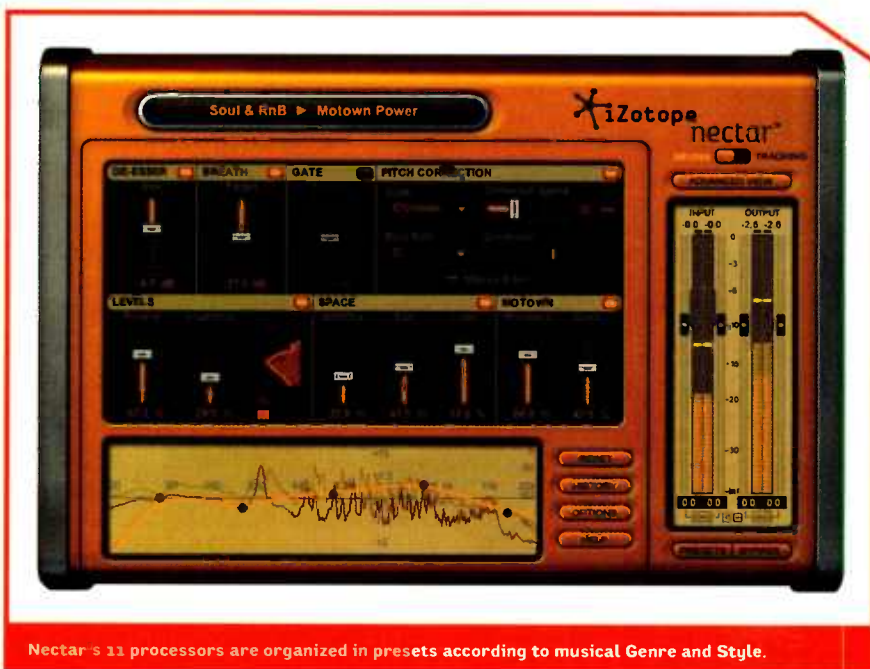
iZotope expands its line of multiprocessor tools with Nectar, a specifically designed plug-in for lead and backing vocal processing. Nectar uses chains of up to 11 processor modules, and comes with a large library of preset combinations that emulate vocal treatments used in many popular musical genres. Processors include pitch correction, breath control, gate, saturation, EQ, compressor, de-esser, doubler, limiter, reverb and delay.

Available as a native plug-in in AU, VST and RTAS formats running on PCs or Mac hosts, Nectar operates in either Mixing or Tracking modes. Mixing mode is full-powered but at a considerable DSP cost. In Tracking mode, Nectar downshifts the pitch correction, doubler and limiter modules to minimal versions, reduces overall latency and disables the high-latency Breath Control module.

### What's Your Style?

Nectar's presets are organized into musical Genres and Styles. A Genre in Nectar comprises a certain collection of processor modules used for mixing songs within that musical form. For example, you won't find Pitch Correction in the Jazz genre, but you would in the Pop genre. Nectar offers presets for more than 10 musical genres, plus effects, voice-over and dialog.

Style designates the module chain order in which they are connected, the initial/default parameter settings and the way the modules interact. There are four to 12 different premade Styles per Genre included. While Styles from one Genre cannot be ap-



Nectar's 11 processors are organized in presets according to musical Genre and Style.

plied to another Genre, you can use the pop-up editor to create, rename and add your own concoction to your preset list.

When Nectar is first instantiated, a Quick Start main view gets you close to the sound you want quickly. The Preset/Style selector drops down for choosing a Genre and Style. Once selected, a simplified set of controls for each module used in the preset appears so that you can quickly change default settings. Advanced view offers a list of all 11 modules with separate screens for each.

### How Sweet It Is!

I tested Nectar in Pro Tools 9 HD3 Accel running on a Mac Westmere 8-core (OS 10.6.6), and at first glance Nectar appeared daunting. But in spite of the power and technical depth, it doesn't take a scientist to use it. I did find that while in Advanced view if you want to select another Genre/Style, the list drops down so you can't see the module lineup change as you try different Styles.

One of the most important initial tweaks is input level. The recorded level of vocal tracks makes the biggest difference in the way the

compressor, limiter, gate and saturation processors work. The unambiguous and "no-brainer" input control section lets you set level within an acceptable, "bracketed" range.

For a wide lead vocal sound in a boy band mix, I called up the Pop genre and the Cruzing (Male) Style. Because Nectar does not have a mono-to-stereo instance yet, I duplicated my lead vocal track and sent each copy to the left and right side of a stereo aux fader and inserted a stereo instance of Nectar.

Nectar's Main view showed the Pitch Correction module in chromatic mode with just the correction speed, scale and root note values to adjust. I clicked on the Manual Editor because, in addition to running automatically and reining in wayward pitch, this module let me "scan" problem areas for manual correction, much like Melodyne 3.2.2 or AutoTune 7. Edits are remembered and tied to your particular audio position, and, yes, you can put correction speed to 0 ms and make vocal tracks sound like vocals on Pop radio these days.

The Cruzing (Male) Style produces an aggressive, hot level using the Compressor, Limiter and Saturation modules, but there

### PRODUCT SUMMARY

**COMPANY:** iZotope  
**PRODUCT:** Nectar Complete Vocal Suite  
**WEB:** [izotope.com/products/audio/nectar](http://izotope.com/products/audio/nectar)  
**PRICE:** \$299

**PROS:** The mother of all vocal processors.

**CONS:** No mono-to-stereo version. Certain modules use considerable DSP.



are only preamp and loudness parameters to set. There was a delay effect called Space with just wet/dry, size and color faders. The Doubler module had a fader for the amount of an added low-octave voice and a Spread control for the other unison voices panned left and right. I liked that there is always a large GUI in Main view for the 5-band parametric equalizer section for immediate click-and-drag tweaks.

Although the macro faders worked well, when I clicked into Advanced view, I could fine-tune the parameters inside each of the modules. For this mix, I found both the Compressor and Limiter modules' default settings good and aggressive-sounding while easy to dial in.

The Compressor module has two compressors, each with a choice of four compressor types—vintage, digital, optical and solid-state—plus a post-EQ section. I loved using them both in parallel, where you can cross-fade mix between a smooth compression and a

harder squash. As there is already a fine EQ in Nectar, I think the compressor module's minimal EQ section would be more useful in the sidechain path.

In the Saturation module, I switched to Tape (there are also Analog, Tube, Retro and Warm positions) and flattened out the highs with its roll-off filter. This smooth-working module is perfectly designed to add just a little vibey grit and "hair" to an overly clean vocal recording.

For a less-electronic sound, I reduced the level of the Doubler effect and automated the low-octave voice only to play during a breakdown section—easy to do with all 153 of Nectar's automatable parameters.

I liked the De-Esser module because it "chills out" the "s" sounds without killing the vocal overall. Breath Control analyzes the harmonic structure of vocal inhalation/exhalations and acts like a downward expander to suppress them. It works well, although it's fiddly to set correctly. In Pro Tools with just Breath Control

running, Nectar becomes 26,623 samples late, making it an offline AudioSuite process only.

In Mixing mode, Nectar—depending greatly on which modules are running—uses considerable host DSP resources and may exceed your DAW's delay-compensation engine's ability to correct its latency. So for the most part, unless I needed extensive Pitch Correction and Breath Control, I ran it in Tracking mode.

### It Goes to 11

With 11 processor modules, Nectar is an excellent, all-purpose, one-stop vocal processor. It replaces the long chains of separate plug-ins I normally use to achieve the same results. Within one plug-in, I have a broad spectrum of effects and processing power made easy to modify and use on vocals. But don't limit yourself—it works great on drums, bass, guitars and keys, too. ■

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

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## Back to the Past

### Understanding and Restoring Analog Tape

This month, we're revisiting analog tape and the physical restoration process—as opposed to using the software restoration apps spotlighted in the December 2010 issue of *Mix*, available at [mixonline.com](http://mixonline.com). If you read no further, your most important step is to not attempt to play or fast-wind any tape before evaluation. For seriously problematic tapes, you may want to consult or hire an experienced professional. Precautions are necessary because fewer people have analog tape experience.

For those who are unfamiliar with magnetic tape basics and common practices, a brief recap is in order.

#### Just One Word: Plastics

In the U.S., analog tape manufacture dates back to the late 1940s, when the more popular plastic tape component—cellulose acetate—dominated '50s-era recordings and continued to be used into the '60s. Acetate does not stretch, but it does break “cleanly” and can be easily spliced back together. Over time, it becomes more brittle and should be played on a gentle, well-maintained machine.

Introduced in the '50s, Mylar (DuPont) and polyester (generic) tapes are essentially the same plastic animal, aka PET. To see the difference between acetate and Mylar, hold a reel of each up to a light source. Acetate is translucent (it passes light) while Mylar is opaque (it does not pass light). Unlike acetate, Mylar can be stretched until it curls into a “tube,” and while obviously not the goal, the increased tensile strength is much



**Figure 1:** A tape is being “played” while in contact with a porous cloth placed around the tension arm (top-left) and across the heads (center). This technique is used to confirm baking success and remove residual “debris” that might clog the head during playback/transfer.

more tolerant of tape machine abuse.

Magnetic recording tape comprises three or four key ingredients: the plastic tape (base material), iron oxide (the memory component), binder (the “glue” that secures the oxide to the tape) and, in later variations, a conductive carbon backing (to reduce static electricity). For some tapes, it is common for the binder to absorb moisture and become more like rubber cement, hence the name “Sticky Shed Syndrome,” or SSS. In many cases, dehydration (via low-temperature baking) re-activates the binder, but it's not for all tapes. SSS will gum up everything stationary in the tape path (lifters, heads and guides), so be sure to inspect and clean often. When the job is done, clean the pinch roller as the chemical components in tapes do the most damage to these “rubber” parts.

#### Pack Rat

All professional tapes should have been stored in a played state, also known as “tails out.” A visible clue to this is a smooth tape pack. This not only minimizes environmental contamination (dust particles and humidity), but it also makes the dominant print-through (layer-to-layer “echo”) occur after the initial recorded sound, a much better alternative to pre-echo. Tapes may be stored on metal or plastic NAB (large center hub) reels. For tape wound on the hub only—without flanges—you'll have to find a

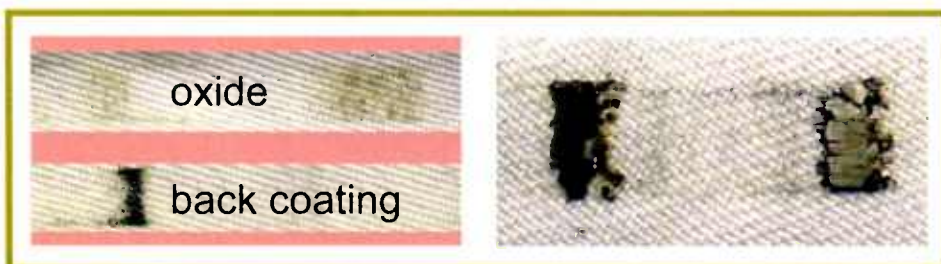
pair or disassemble an existing reel. Care must be taken to place a flange on the tape and then flip so that the tape and the hub are supported. Otherwise, the hub may drop out from the center and tape may unravel in a most dreadful way.

Tapes stored on small plastic reels should be transferred to a larger reel to reduce the potential of the tape being wound too tightly around the hub. High tension can cause mechanical distortion from the first layer to be “transferred” into subsequent layers. This condition is made worse if the tape is to be baked.

#### Punch List

Make a visual inspection and determine the age, manufacturer and tape type. If you've only ever edited via a DAW, you should know that analog

tapes were edited and sequenced with the help of a white china marker, a demagnetized razor blade and a special, low-ooze adhesive splicing tape. Improvements in the quality of splicing tape have been made—blue tape is better than white tape. Also note that blank (biased) tape or leader tape (plastic or paper) may exist in different segments of each recording. Splicing tape doesn't typically adhere to paper tape as well as it



**Figure 2a (left):** A successful bake yields minimal residue of both the oxide layer (upper) and the back coating (lower). **Figure 2b (right):** Excessive shedding indicates this tape must be baked before transfer.



does to plastic tape. Leader tape is very obvious, and with a little experience, it's possible to see splices without playing the tape.

Back in the day, you'd simply rewind the tape to the head and get started, but not today! SSS tapes and those with vintage splices are not tolerant of impatience. A '70s-era Mylar/polyester tape will want to be "processed" before playback. A suspect tape with a bad "pack"—one where the layers are unevenly up and down—should first be "baked" at a low temperature (no more than 120 degrees Fahrenheit). Afterward, play to determine direction and format (number of tracks, speed, etc.), making sure that the tape ends up tails out before baking a second time. Even with a smooth pack, it might be a good idea to follow the same procedure so that the tape can be re-tensioned between the first and second bake.

### Slow Ride

Once baked to satisfaction, you will want to avoid a fast-wind because no matter how attentive, you will rarely be fast enough to save a tape if a splice

comes undone at high speeds. When that happens, the tape will whip against unforgiving stationary objects, either chipping off the oxide or the tape itself. While it will take longer, reverse play is safer and sometimes necessary, allowing time to inspect and replace all splices, if necessary. Splices that play through the first time may not hold up during subsequent shuttling and playback passes.

### Modern Vs. Vintage Decks

Early machines had fixed guides that are only useful because they reveal how badly a tape can shed, especially during fast-wind. Studer machines have roller guides where the heads are the only stationary devices. Late-model tape machines like the Studer A-827 (and modified Ampex ATR Series machines) have a library-wind mode that can be preset by the user for a slower, safer journey.

### And Now, the Bad News

Place a soft cloth or paper towel over the heads

(Fig. 1) to confirm successful baking and clean remaining residue (Fig. 2a). And while not of ten as easy, do the same for the backside of the tape, if coated. If the cloth looks like Fig. 2b, another round of baking will be required. Sometimes the residue is not the color of oxide or back coating, but white-ish. A combination of more baking and more cleaning may eventually resolve the issue. Baking resolves SSS most of the time, yet some tapes require more extreme techniques, like playing below normal speed or well-below room temperature.

Once the tape is playable, it will be necessary to electronically and mechanically calibrate the machine. Professional tapes should come with their own test tones for level, frequency response and azimuth calibration. The tape might also be encoded with noise reduction (Dolby, dbx and Telefunken). III

*Eddie is awaiting a new pair of food dehydrators for evaluation and is currently developing presets for a dbx-compatible plug-in.*

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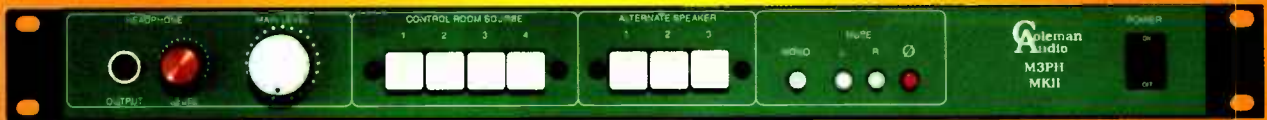
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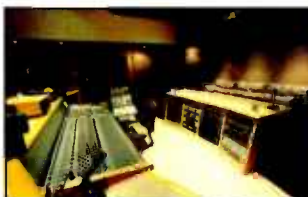
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## Michael Abbott

Audio director for Grammy Awards ensures Emmy-winning sound to the house, over the air.

**Here we go again. How are things going in 2011?**

Well, so far so good. We are now midday, second day of rehearsals. We started out with Arcade Fire, the white P-Funk as somebody coined them. And then we went right into Barbra Streisand, who was just fabulous, so professional from the first note. Her engineer, Dave Reitzas, was a real pleasure to work with.

This is my 25th year on the show, 10 years of coordinating. I've done Radio City, the Garden, and I'm happy to be home here at Staples. Staples is, if not the best facility, one of the best. This show requires a huge amount of collaboration and the Staples team is just wonderful.

**Anything new this year?**

Not much from the equipment side. They're using PowerSoft amps to power the [JBL] VerTec P.A., but they're not using the new DSP processors yet. This show is all about communications, and I do everything in my power to keep above the flow of information and disperse it to the 40 or so technicians among the six mix positions and all their assistants. We are for the first time using Google Docs to simplify the flow of information. The discipline of that has been rather interesting. [Laughs] We did a first test on Super Bowl Sunday, where I sent out a burst to the team of 40, and now I find out these guys have 20 other e-mails that I didn't know about all linked to Google. But it's been great here on-site, where mic inputs might be updated right up until showtime.

**You keep saying "complexity" and "simplicity."**

The RF and the IT data streams on this show are on a par with the audio, in terms of splits and inputs. We probably have the most extensive distribution of audio signals of any show on television, any live show. This is a very unique musical show, and the diversity and the dynamics are very wide. The type of inputs or connectivity or data that we

distribute ranges from MIDI to WiFi to RF to MADI to AES to ZigBee 2.4 protocol—you name it, we're dealing with it.

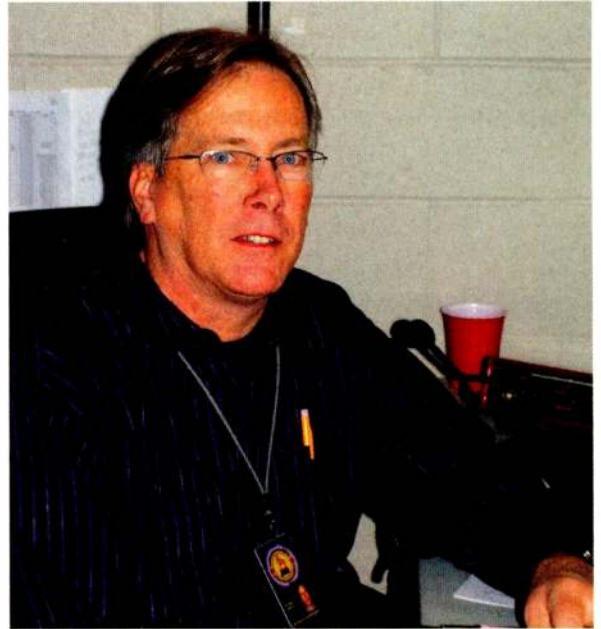
The complexity in my view is in the RF spectrum. I do everything to keep my arms around it, and I have one of the best guys in the business to drive that: Dave Bellamy, our RF coordinator.

**Talk to me about RF.**

It's not so much diminishing returns. It's just that the spectrum is being repopulated and our spectrum is being diminished, and within that spectrum we have to concentrate the same amount or more usage than we did last year or the year before. We try to accommodate everybody on the show with the types of mics they use, and some of our manufacturers, within their RFs, have different types of models that work in multiple formats with a single receiver. One of the issues I'm trying to address with manufacturers is how do you develop hardware that works for a dynamic show like this? This show is highly dynamic, minute to minute, sequence to sequence, and over the three days, as we build to the show, you have 20 bands so you have 20 segments, with maybe 10 different mics used in the same receiver. So you have compander circuitry, you have different types of transmitters. Everything that you can imagine to complicate the chain. It's definitely not, "Turn a mic on, turn a mic off."

**Do you clear the area?**

This room is essentially an anechoic environment, and that helps immensely. But we do a survey two weeks prior, then a week out, and at that point Dave is mapping out what he's doing. And he has to coordinate with the PL communications teams. There's some microwave cameras walking around. We have a zero tolerance for wandering wireless. We post signage indoors and outdoors for ENG. We don't have as elaborate a method



or as strict as James at the Super Bowl. It's just flat-out zero tolerance. I work very closely with pre-show, post-show, the press on-site and make sure that nobody is firing up RF. That seems simplistic, but somebody will turn on no matter what you do.

I work closely with AudioTek, our primary sound vendor, and MCR Broadcast, and Denali Summit, our primary broadcast truck, along with Music Mix Mobile for the music mix and Soundtronics for the RF coordination.

**You've told me before that you base your year around Grammy night. What is it about live TV that excites you?**

Nothing beats the spontaneity of live. We're going along and anything could happen. A mic might die. We've got contingencies. But the bottom line is that you don't lock up, you keep moving forward. You put a plan in place on something of this magnitude. Then we get to dress rehearsal and see whether the plan is working. But my job is, prior to that, knowing that maybe John Robinson's drum kit is going to be used for Barbra Streisand, which has a huge string section. But then we're also going to turn around and use that same drum kit for an Aretha Franklin tribute. This is a big one. [His phone rings for the fourth time.] That's the creative process changing right now. III



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