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Salt sound crew, from left: Scott Millan, Jeff Haboush, Phillip Noyce and Greg P. Russell in front of Harrison board at the Kim Novak Theatre, Sony Pictures Studios (Culver City, Calif.). See story, p. 22. Photo: David Goggin.



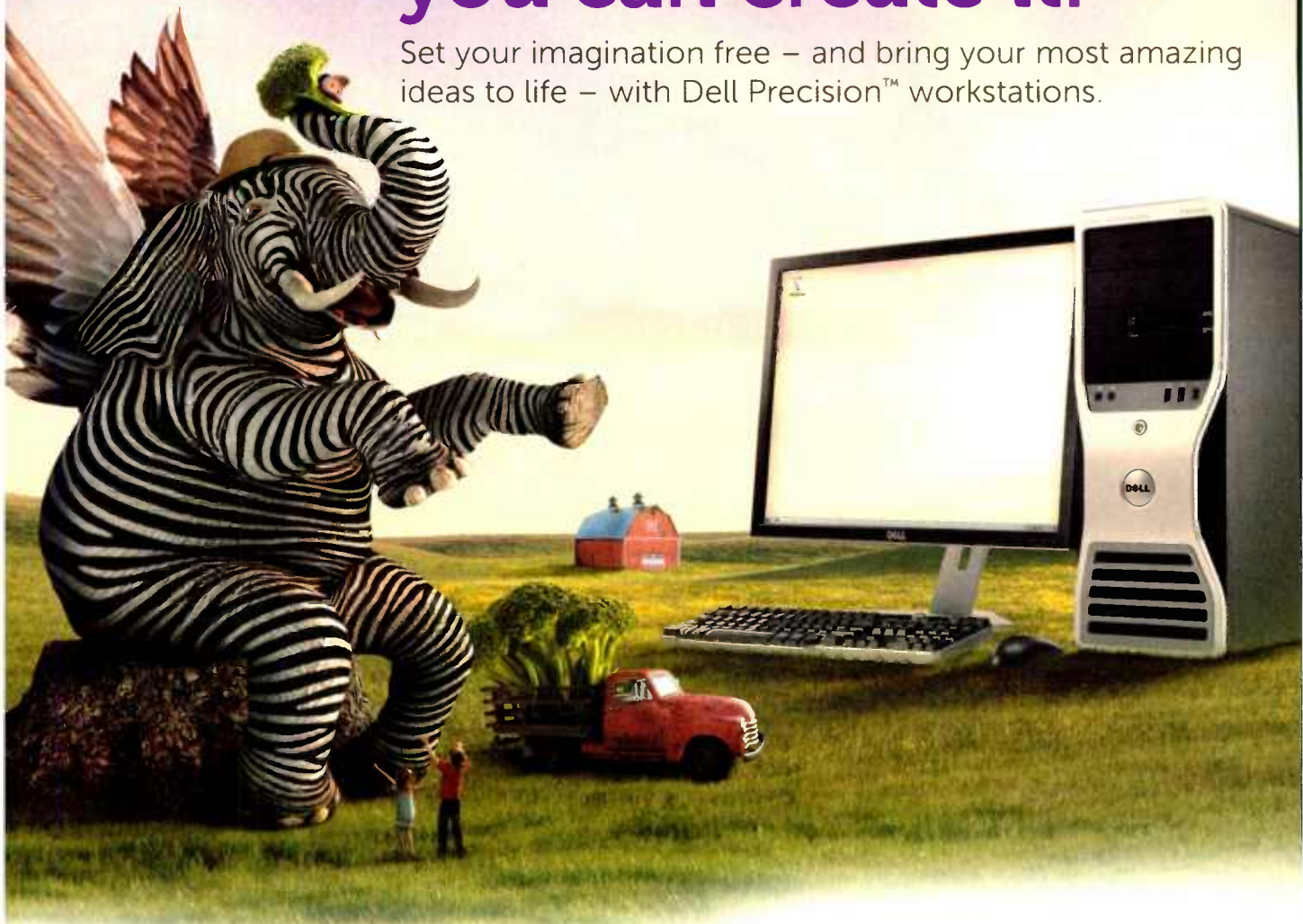
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BY DAVID SCHWARTZ, PENNY RIKER AND BILL LASKI

Analog on Her Own Terms

Just as we were putting the August issue, with its theme on Analog Audio, to bed, I was invited to see Shelby Lynne at Yoshi's San Francisco, near the end of her tour in support of her excellent spring release, *Tears, Lies and Alibis*. She took the stage quietly, following a sweet John Jackson guitar riff on his Gretsch. No fancy backdrop; just her and a guitar, Jackson and drums. Pure performance. While her material can tend toward a darker emotional side, she doesn't linger in lament or swim in sorrow. She almost slow-struts and swaggers onstage. A friend said that night, "It doesn't sound like she's singing at you; it just sounds like she's singing." Simple. Honest. True.

In an interview the day before, I learned that is how Lynne approaches recording and songwriting, as well. And she's analog from the get-go. *Tears* was recorded largely in her living room in the desert outside Palm Springs, where she lets the room do the work. She started writing on a legal pad and putting ideas down on a Portastudio. As she refined songs, ending up with about 20 from which to choose, she turned on her Studer 24-track (which she has called her favorite instrument) and began with "Loser Dreamer." She sings into a Telefunken 251 and puts a Neumann KM81 on her guitar, then to her new favorite mic pre, a Karl Diehl NPNG, to her Mackie 24-channel board and straight to the Studer, using ATR tape at 30 ips. Those tracks make it through to the record.

Then she brought out Val McCallum and Ben Peeler from Los Angeles to add guitar. When she had the tracks, she flew, with reels in hand, to Nashville ("because that's where the pickers are") to work with engineer Brian Harrison at The Rendering Plant. They brought in David Hood and Spooner Oldham from Alabama, and within days she had a record. She then sent the tapes off to Al Schmitt at Capitol for the mix, and had him send CD refs out to the desert for approval because, she says with a laugh, "That's the way I like to hear them, and I like to make the boys still do it!"

"Don't get me wrong, I love the toys and I am a gear-head," she interjects. "I've always been fascinated by boards and mics and the ways studios are set up. I have my Bricasti and my new Korg multitrack at home, but I like to keep it simple. How creative can you be with a million tracks? With [Pro] Tools, you don't have to commit; with tape, you have to commit. If I'm making a record and I want to put three-part harmonies on it, I've already used up four tracks. Two for SMPTE, so that's six. Bass and drums, that's five more. So how many do I have left? Piano, horn: Uh-oh, I've got two left. The record's done. Believe you me, I can find a harmony to stick in anywhere. Or a fifth or a third. But that doesn't necessarily make a great song."

Her voice is pure, her approach to record-making stripped down and simple, and her candor refreshing. She loves the lip smacks and the string squelch left in the tracks, and she absolutely loves the sound of analog tape. Her old-school approach isn't for everyone, but it sure works for her. And isn't that what recording is all about?


Tom Kenny
Editor

Mix magazine is affiliated with





Pat Thrall Producer/Engineer Beyonce
Marco Migliari Producer/Engineer Robert Plant
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Outrageous Morph Engine. Designed in collaboration with MoReVoX sound designer Sabino Cannone, Morph Engine reshapes sound with every beat, for mind-blowing effects unmatched by anything else on the market.

Choose your own protection. Drummagog 5 makes it simple. If you're an iLok user, Drummagog offers iLok support. If you prefer challenge-response, no problem. Drummagog 5 supports both.

Get the whole story at www.Drummagog.com

CURRENT

compiled by Sarah Benzuly

Product Hits Of InfoComm 2010

Since merging with the NSCA Expo, InfoComm (Las Vegas, June 5-11) is the premier event for live sound technologies. With 925 exhibitors, there was plenty to see. Here are our selections for the Top 10 product debuts.

Audinate's Astoria Dante PC/Mac PCIe soundcard for networking and MADi replacement handles 256 channels of uncompressed digital audio over Gigabit Ethernet with ultra-low latency.

Aviom's Wall Frame 6 holds six of its new A-Net PRO 64 modules (including a quad mic pre, quad analog output and 2x2 AES3 I/O) and mounts in a standard NEMA electrical box. Add a Cat-5e feed, and you're ready to go.

Behringer's Eurocomm line ranges from stylish, tabletop mixer/amps to on-wall, ceiling and P.A. speakers. The TN6232 automatic feedback suppressor requires no setup or tuning.

K-Array's Kobra KK50vb 3-D line array is 2.2 inches deep, weighs 4.4 pounds and has a 120dB peak output.

Martin Audio's MLA (Multi-cellular Loudspeaker Array) applies an optimization of the array's output based on acoustic models. Six cells in each enclosure (each with its own DSP and powering capability) can be tweaked via software that calculates FIR DSP filters for each cell.

Midas' top-end PRO9 console features an 88-channel input count and 35 buses, with max capacity being 288 inputs x 294 outputs point-to-point routed anywhere within the network.

Roland Systems Group's 32-channel M-300 V-Mixer shares many features of the M-400 but in a compact format that sets up in minutes by plugging in a single Cat-5e cable from a choice of digital snake stage units.

Studer's Vista 9 digital console builds on the Vistonics interface with widescreen TFT metering and a History mode that replays the

last 30 seconds of meter activity, letting users "rewind" the display to ID any channel where a pop or overload may have occurred.

Switchcraft's SC900 direct passive boxes have a clever feature that automatically activates a ground-lift switch when 48-volt phantom power is applied, effectively creating a remote-controllable ground lift.

Yamaha now offers Mac versions of its M7CLV3 Editor and LS9 Editor console control software, which runs under the Studio Manager Version 2 host, providing the same features and operating environment as the Windows version.

See more InfoComm 2010 product hits at mixonline.com/infocomm_2010.



'Rock Band 3' Adds Keyboards, Goes Pro



Expected out this holiday season for PS3, Xbox 360 and Wii, the *Rock Band* series expands the virtual band to seven: drums, lead and bass guitars, vocals, harmony vocals (new!) and keyboards (new!). The keyboard can also

go MIDI by connecting to a computer.

The game also introduces a Pro mode, where users can learn to play the real thing: Start at Easy and work up to Expert. Notably, Pro Guitar mode features notated guitar and bass performances that can be played with either the new Fender Mustang PRO-Guitar simulated guitar controller from Mad Catz or the Fender/Harmonix-developed *Rock Band 3* Squier Stratocaster full-sized six-string electric guitar that doubles as a game controller.

DWV Entertainment Acquires Aphex Systems, Announces New GM

Less than two weeks after acquiring Aphex Systems, DWV Entertainment (DWVentertainment.com)—a newly created entertainment company from leading audio industry veterans David Wiener and Robin Sibuciao—has announced the appointment of Rick McClendon (pictured) as general manager of the new DWV Entertainment unit.

Aphex is now part of the DW Collection, a luxury consumer product brand, as the second company underneath DWV Entertainment's umbrella of

entertainment-focused brands. McClendon was most recently president of Pro Sales Management (L.A.), offering customized outsourced sales and marketing services. His earlier career includes nearly 15 years in various sales and distribution capacities for Roland U.S., as well as serving as director of sales for DigiTech, VP/division manager at Tascam and VP of worldwide OTC sales at Seymour Duncan.



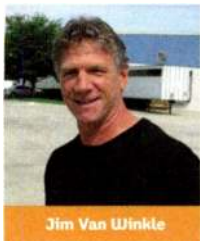
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"We went for PMC because our MB2S system offers a very large soundstage in both width and height; the image extends far beyond the system's physical dimensions, which means that our students can work throughout the room on tracking and mixing sessions and not lose that essential sweet spot."

—Paul Eachus, Oberlin Conservatory of Music's director of audio services, on the install at the recently completed control room



Industry News



Jim Van Winkle

Jim Van Winkle returns to **Masque Sound** corporate as the general manager of the Orlando-based Professional Wireless Systems division...New product marketing managers for **Bosch Security Systems** (Burnsville, MN): **Mark Andersen**, Public Address; and **Sally Neubauer**, ProSound-Retail...San Francisco-based **Women's Audio Mission** promotes **Hillary Burkman** to the newly

created position of facility and media manager...**Lynn Harris** is **Kaltman Creations'** (Atlanta) new marketing manager...**Harman** (Northridge, CA) international news: **Vinne Peng**, marketing and communications manager, China; **Jack Wu**, sales team, China; **Marconi Lee**, sales team, China; **Ankus Agarwal**, marketing and communications manager, India...Distribution deals: **DiGiCo** (Surrey, UK) appoints **C.L. Pugh & Associates** (Ohio, West Pennsylvania, West Virginia and north Kentucky); **Meyer Sound** (Berkeley, CA) taps **Philippo Nakas** for Greece; **Prism Sound** (Cambridgeshire, UK) will be rep'd in South Africa by **SEGMA**; **KK Audio** (North Hollywood) studio monitors will be distributed by **Summit Audio** (Gardnerville, NV); and handling Australia for **DaySequerra** (West Berlin, NJ) is Broadcast ONE.

Studio Unknown Update

Indie artists are at the helm of their own ships, taking on financing, recording and marketing their projects. That said, the name of the game has become finding innovative ways to save money. Find out how studio owners are successfully working with bands and artists to capture their live shows.



Film Space Adds Audio Post Services

Post FactoryNY (postfactoryny.com) and Bang Music's joint venture brings audio post-production in-house to the former's 35,000-square-foot facility in the SoHo neighborhood. Within three days of soundcheck the new room was up and running, mixing and mastering HGTV's *House Hunters International*. Gear includes a Euphonix MC Control, Pro Tools HD2, Waves plug-ins, Dolby LM100 and more. Telos Zephyr ISDN remote recording is available through Bang's 18th Street studio.

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Mix Master Directory Spotlight

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

Art Institute of Houston

The Audio Production degree program at the Art Institute of Houston combines theoretical concepts and technical skills. Instructors show students how to record, edit, mix and master audio. Course topics include music theory, electronics and recording techniques. Students can learn that audio is involved in many mediums—video, Web, film and music.

Instructors in the program bring their real-world industry experience into the classroom. artinstitutes.edu/houston
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on the move

Who: Andy Trott, Soundcraft/Studer/AKG president

Previous Lives

- 2004, Harman, president of Studer and Soundcraft
- 2003, Harman, managing director of Soundcraft
- 1995, Pace Micro Technology multiple positions

My main goal for AKG is... to define strategy, spark innovation and drive continuous improvement. I am a technologist and a musician, so working for Harman is my ideal job.

The one superhuman power I would love to have is... to bring the gift of happiness to people with a single touch.

What I'm currently listening to: This week's favorite is a band from Canada called Metric and a song called "Monster Hospital." The energy in this track is incredible and the guitars are very intense.

When I'm not in the office, you can find me... in my studio! I love the whole music creation process and have been writing and recording songs since I was 14. I find it an excellent way to unwind from the daily stresses of life and escape to an alternate reality.





The Age of the Customs

A PERFECT STORM

■ Back at the beginnings of modern civilization, soon after the invention of the wheel, the recording of music was often done through a haphazard collection of 2-track radio consoles slung together with raw wire and powered by fossil fuels. Human beings spilled their souls onto long, winding strips of plastic tape, rearranging iron particles and rewriting history. The invention of the wheel, in our case, was the invention of the multitrack tape recorder. What followed was the perfect storm of artistic ideas fueled by ravenous capitalism, creating the era of Custom Consoles.

In 1967, a year after the groundbreaking 8-track recording of *Pet Sounds* by the Beach Boys, Ampex presented the first commercially available 16-track machine, the MM-1000, and the landscape of the recording industry changed. Meanwhile, George Martin proved with The Beatles' multitrack masterpiece *Sgt. Pepper's* that the engineer and producer were now, more than ever, a creative force in the making of popular music.

But one major problem existed: There was no standardized way for the audio engineer to use a multitrack recorder. In essence, you needed two separate mixers to do the job—one to route mics to the recorder and one to mix the multitrack's playback for listening. Early recording studios like Sun Studios in Memphis often used broadcast equipment or had an improvised collection of two or three rotary-knob mixers tied together. Fledgling companies like Spectrasonics, Neve, API and Trident, and lesser-known ones such as TG, Quad Eight, Sphere, Electrodyne, Calrec, Aengus and Helios came to life. They could build a personalized worksurface, combining mic amps, line amps, routing, metering and monitoring. You could request in-line faders in lieu of rotary pots, any combination of metering and routing, specialized equalizers and compressor/limiters, two or four outputs—anything you desired. Hundreds of these consoles were built and installed during the early '70s.

The first Customs appeared in studios like Stax and Ardent in the States, and Olympic and Abbey Road in London. These consoles were limited by today's standards and needed trained staff engineers to operate them, but they were still far more versatile than the commercially available broadcast consoles at the time. In Memphis in 1970, Andy Johns and Terry Manning mixed *Led Zeppelin III* on Ardent's new Spectrasonics console, built with 12 mic/line channels, linear faders and four outputs. They used the studio's 8-track Scully tape machine to play back the master tapes they had recorded at Olympic, mixing down to a Scully 4-track. The format was so new that they didn't even monitor through two speakers, but listened to all four outputs at the same time through a constellation of JBLs suspended from the ceiling.

By the mid-'70s, everyone had a Custom. L.A. studios like Sunset Sound, Western Recorders, Hollywood Sound, Capitol, Wally Heider and Cherokee employed designers to help create each studio's unique "sound." Technicians like Frank DeMedio, Robert Bushnell and Deane Jensen dominated the L.A. scene. Grandmaster Studio in L.A. had a crazy



Brian Wilson working in Studio B at Ocean Way on the Dal-Con Custom Console in 2010

three-sided Custom that would rise up when you mixed so you could easily reach the controls like you were in a spaceship. Indigo Ranch had a Custom with Deane Jensen transformers and Aengus EQs in a studio overlooking the ocean in Malibu. Crystal Studios in Hollywood had two Customs built by owner/designer Andrew Berliner; his proprietary designs included groundbreaking digitally controlled amps in the faders.

One of the most famous and unique Custom Consoles still in existence is a daily driver that lives at Ocean Way in L.A. Bill Putnam first commissioned the Custom in 1973 for Studio 1 at Western Recorders on Sunset. When Allen Sides acquired the Western facility and moved Ocean Way Recorders into an adjacent building, the Dal-Con—named after its unique op amp—was moved to Studio B, where it sits today. Nicknamed the "Baseball Bat" by mixer Chris Lord-Alge, this console is known for its fast slew rate, something remarkable for the early '70s—and still amazing today. As technology changed and recording went from 16 to 24 to 32-track, the Dal-Con was modified and expanded to accommodate the new formats. Sides added a bank of 40 API 550A equalizer modules in a side rack to augment the simple passive EQs in the original console. Next, they expanded the Dal-Con with an API 1604 sidecar, tying it into the busing on the main console. The result is a sprawling mish-mash of an awesome console that's as relevant today as it was when it was built (being used to record Natalie Cole's *Unforgettable*, Radiohead's *Hail to the Thief* and Kanye West's *Late Registration*, among others).

Sunset Sound in Hollywood still operates two of its originals. The Custom Consoles in Studio 1 and Studio 3 were designed by Eric Benton, Frank DeMedio and Deane Jensen, and feature their completely unique Sunset Sound mic preamps. Because Sunset was a dealer for API, they designed their Customs to incorporate the desirable API 550A EQs, building them directly into the worksurface. At one time, Studio 2 also had

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a Sunset Custom Console. All of Van Halen's greatest albums were recorded on the Studio 2 board. But all those records, all that fame, was not enough to prevent the Custom's demise.

The Newer Normal

As the '70s revolution raged on, Trident Studios in England had been making its own Custom Consoles called the A-Range and B-Range, and in 1975, the studio unveiled the new Series 80 console, which had a very standardized layout. The Series 80, 80B and 80C were mass-produced with a minimum of 32 channels for which the controls were mounted on long strips instead of individual modules. Personalizing was limited, and for the most part was not needed. Each channel had a mic/line amp, 24 buses, EQ, eight cue/effect send outputs and a linear fader. Each 80 Series also had a built-in eighth-inch TT-style patchbay, a center section with send and monitoring controls, and a standardized stereo bus—everything you might want for recording in a very streamlined form. You didn't need to be a technician to buy one, and any independent engineer could navigate a session on one of these new-generation consoles without needing any more instructions than where to turn on the lights in the room. One by one, the big lunky Customs were replaced by MCI, Harrison, Amek, Soundcraft, Neve V and Solid State Logic. By the 1990s, most of the great Custom Consoles had long been replaced.

My first personal encounter with a true Custom was when I worked at a studio called Bear West in San Francisco in the '80s. Its old API De-Medio in Studio A was big and square, and had a vast patchbay of brass

¼-inch plugs with just about any patch point you could dream of. It had a fake plastic wood veneer that was chipped off on the corners and a worn Naugahyde bolster that was cracked and peeling. But, oh, it had soul. It sounded thick, golden-brown and grainy, and would often spit at you. I loved it. I was disappointed when the studio owner replaced the board for a cookie-cutter Sound Workshop. Not that the Sound Workshop sounded bad; the API DeMedio just sounded too good.

Re-Inventing the Wheel

Today, with the advent of digital, the entire idea of worksurfaces is quite different from how it was 40 years ago, but the concepts and the appearances are surprisingly familiar. It may be a picture of a knob or a fader that you are manipulating on your screen, but its purpose is the same. Whatever it was in that recipe of graphite, copper, resistors, potentiometers, plates, strips and islands will hopefully be offered to you soon as a plug-in. There's nothing wrong with appreciating works of art as you would by having a copy of a Matisse or a Dali on your wall. Not everyone can have an original, and in an abstract way we can now all have our own beautiful Custom Console masterpieces. III

Sylvia Massy is the unconventional producer and engineer of artists including Tool, System of a Down, Johnny Cash, Red Hot Chili Peppers, Tom Petty and Prince. She is a member of the NARAS P&E Wing Steering Committee and Advisory Boards, and is a resident producer at RadioStar Studios in Weed, Calif.

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Analog Tape Is Back!

LEFT FOR DEAD DURING THE DIGITAL REVOLUTION, IT'S BEING EMBRACED AGAIN BY SOME ENGINEERS

By Blair Jackson

The years come and go, equipment changes, trends evolve and still the great digital vs. analog debate continues. Not that it's really a fair fight at this point. After all, digital recording formats have become completely ubiquitous, admired for their ease of use, sonic transparency, cost-effectiveness and, increasingly, the variety and quality of compatible signal processing plug-ins available in the digital realm. But wait a minute—you still need the gear that gets you to your DAW, which certainly includes a mic preamp and perhaps some of the cool out-board boxes that discerning ears argue still sound better than most plug-ins. Your tools of choice may also call for an all-in solution like an analog console that provides the input, processing and a mix summing platform for one last look at analog before the audio goes digital for distribution.

But what about tape? Ah yes, that tool of recording's dark ages. Even though the availability of the product has returned after its initial fall from use, it's expensive, noisy (compared to digital) and famously cumbersome to work with. That is so 20th century! But it is also a technology that a vocal minority of engineers and producers—young and old—have embraced in recent years, with a modern twist: They use tape for its sonic properties, but also employ digital media for its editing and storage capabilities. This is not exactly news: All through the so-called “digital revolution,” there have been folks who have recorded, say, drums, bass and guitars to analog tape and then transferred to Pro Tools, Nuendo, etc., for editing. But some of today's hybrid enthusiasts are now finding ways to work with tape throughout the recording process, combining the best of the analog and digital worlds. *Mix* recently spoke with four Tape True Believers about their affection for the whirring reels and mysterious properties of magnetic tape.

Jacquire King

During the past 15 years, Jacquire King has been involved in a slew of interesting albums by the likes of Smash Mouth, Tom Waits, Modest Mouse, Norah Jones and—most famously, perhaps—Kings of Leon. When we catch up with King, he is at different stages of work on two albums: Kings of Leon had worked on their next album at Avatar in New York and Blackbird in Nashville, and now King was mixing at his home studio in Nashville; and L.A. band Cold War Kids had recorded at Ocean Way and House of David in Nashville, and were planning to go out to Sunset Sound in L.A. this month as they toil away on an album expected early next year.

“I like to use a console and tape machine and more of an ‘old-school’ traditional studio setup in part because they’re tools that are more about using your hands and ears—your ears, especially—as opposed to a computer,” King comments. “Don’t get me wrong—I use the computer and have for a very long time. I’ve had Pro Tools since it was a baby—and since I used to swear up and down I’d never use a plug-in! But atmosphere-wise and vibe-wise, I think recording on tape creates something people feel more invested in and there’s a romanticism to it; people get excited about that. It just creates a different level of purpose and awareness. People feel like, ‘Oh, we’re going to tape!’ It puts people on a different wavelength as far as how they’re working. If you’re recording just to digital, you can get into the mind set of, ‘Oh, it doesn’t matter, we can always do more takes, you can chop it together.’ There’s some of that attitude, which is not anybody’s fault and I’m not even saying it’s bad—it’s just the way the world works now.

“The other thing that tape does and digital can’t do—and plug-in emulation still can’t do—is the tape saturation, the handling of transients. Digi-

tal is a perfect linear playback device, and a tape machine is not perfect, which is one of the things I love about it. Tape is wiggling around, no matter how good the machine is, and that does something to the sound. And tape machines have their frequency curves and what they accentuate and what they don't, and how they roll off a top end and all those sorts of things, so I love it for the sonics, as well.

"I mix in a hybrid situation. I mix from Pro Tools with a lot of stems, use a lot of analog inserts, parallel compression, but I use Pro Tools as more than just a playback device. Of course, I use it for editing. What I've discovered is I get better mixes in the hybrid scenario if I've recorded to analog—if my individual tracks have seen a tape machine—because there's more consistency with the transients, with the shape of them, the tone of things and the sustain and depth, because tape squishes things and mangles things a little bit, but in a very usable, pleasing and musical way. I end up EQ'ing and compressing less in a mix because I've already used the tape to help me achieve a more musical sound."

Is anything lost in the analog sound in the translation to Pro Tools? "A little bit, but when I'm tracking I'm always monitoring through Pro Tools, so in terms of conversion or how the sound is going to change, I'm always listening to that so it doesn't take me by surprise. In some cases, too, I've captured [the performance] digitally and then during the mix bounced it off a wonderful ATR-102 tape machine I have to still get the analog sound. It's not the same as going straight to the tape machine and then transferring—you're dealing with two times conversion—but it's a safety net. Primarily, I want my analog involvement to be multitrack."

Dave Simon-Baker

For San Francisco Bay Area-based engineer/producer/musician Dave Simon-Baker, whose recent

work includes the latest albums by the Mother Hips (*Pacific Dust*), ALO (*Man of the World*) and Jackie Greene (*Till the Light Comes*), his return to using analog tape (with Pro Tools) was influenced in part by the arrival of a very special machine at the studio he calls home these days, Mission Bells in S.F.: a Studer A820 24-track that was owned by the notoriously audio-conscious Grateful Dead (and used to record their final two albums in the late '80s). Greene, who co-owns Mission Bells with Mother Hips leader Tim Bluhm, acquired the Studer through former Dead bassist Phil Lesh, in whose band he played part-time during 2007/2008. The machine wasn't working when it was lugged up the stairs to the second-floor studio, but some remedial work courtesy of ex-Grateful Dead sound wizard John Cutler and, especially, Krieg Wunderlich changed that, and now, "It's the most amazing-sounding recorder!" Simon-Baker says. "That is a special machine. I'd used the Studer A80 a lot and liked it, but I didn't realize until I started using this A820 that it has built-in Dolby SR card slots, so we did most of the Hips record and all of Jackie's at 15 ips with Dolby SR and it sounds great; it just kicks huge ass. The clock is so amazing on it and the sound is so rich and full.

"I had stopped using tape entirely for 12 years and it wasn't a conscious choice—it was economics entirely. People weren't affording it; they didn't want to buy it. So I found myself with a roomful of hard drives, and I felt like, 'Where? Why?' So when the opportunity came to use this beautiful machine, I fell back in love with it. It takes a little more time because of the transferring [back and forth between it and Pro Tools] and I know there are systems where you can avoid that, but we have it set up in a way we can work well with it."

The Hips and Greene albums were being worked on concurrently (in fact, the Hips play on much of Greene's album and Tim Bluhm also co-produced), and as economic considerations were important in both cases, Simon-Baker was careful not to use too much tape—not a problem given his



Dave Simon-Baker works out of Mission Bells in S.F.

recording M.O. "We monitor through Pro Tools, but we don't actually record to Pro Tools until it's been on tape. Then I transfer it over when the tape is full. The masters were all on Pro Tools. Then we'd just erase the tape when we were done and we'd keep going over the same tape. The Hips record and the Jackie record were done on a total of about four reels of tape."

Greene's album, in particular, has a somewhat '60s psychedelic sound, but that's mostly because of the arrangements and instrumentation—it's rife with Rickenbacker guitars and bass, B-3 organ, even electric sitar on two songs (backward on one). "Tape helps get some of that feeling," Simon-Baker says, "but more is the playing and the instruments and the amps. Jackie and Tim are staunch collectors and a lot of the sound is classic guitars through classic amps—a lot of Princeton amps and that sounds fantastic; Vibrolux; Super Reverb. That gives it more of that sound than the tape. We also have nice preamps—we use a lot of Neve and API stuff, and the new Mercury M72.

"But now that I've had this opportunity to get back to tape, I realize the sum effects of putting all those tracks down gives it a particular way of sitting together. It's almost like a smearing effect where everything sits in a real warm and comfortable zone, and it layers a bit more naturally. It sits in a certain way and creates more of an illusion than the clarity of digital. And I like the sound of digital."

Bryan Lenox

Nashville-based Bryan Lenox has extensive engineering, production and programming credits in the enormous Christian music community, including several albums with top-selling artist Michael W. Smith. Until recently, all the albums Lenox had cut with Smith were recorded digitally, but for Smith's next, still untitled album (due this fall), the engineer made



In Avatar Studios are (L-R) Bob Mallory (assistant engineer), Matthew Followill, Jared Followill, Brent Rawlings, Jay Schlessener, Jacquire King, Nathan Followill, Caleb Followill, Angelo Petraglia (producer), Brad Bivens

Analog Tape Is Back

the bold move back to tape—sort of. Actually, Lenox is one of a growing number of people who have adopted the Endless Analog CLASP (Closed Loop Analog Signal Processor) two-rackspace box that, as *Mix*'s technical editor Kevin Becka explained in a rave review of the product in our May 2010 issue, "offers an easy, cost-effective way to integrate analog tape into digital production workflow by literally turning any tape machine into a DAW plug-in processor."

"This has been life-changing in terms of how I view recording," says Lenox, who has his own mix room called the Bird House in a larger facility known as The Coop, owned by another popular Christian artist, Toby McKeehan (better known as tobyMac). "CLASP is a device that allows you to record to analog tape by taking an instant virgin transfer off the repro head [of the recorder] into your DAW, whether it's Pro Tools or Nuendo or whatever, Mac or PC. And the way it works, your mic pre's and your inputs come into CLASP, and it splits it—one's a hard-wire split that goes straight to your mixing console as you're playing, if you were on 'input'; the



Bryan Lenox: "You'd be amazed with the difference in Michael [W. Smith's] singing because of hearing himself analog in the playback."

other split goes to the 2-inch machine or 1-inch or whatever you're using and it takes it off the repro head so the amount of time the sound is on the tape is very, very brief. It only stays on there as long as it goes through the record head and out the repro head because then it's instantly transferred into whatever DAW you have. But it's on there long enough to get the benefits of tape compression and whatever it is that sort of glues the sound together.

"Another thing that's been remarkable," Lenox adds, "is back in the old days, without the CLASP you had to choose either 30 inches per second or 15 inches per second, and that's

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it; you're locked in at that tape speed. Well, CLASP allows you choose to record the drums at 30 ips in the verse and 15 ips in the chorus if you want, or you can go down 7½ or 9 or 12; whatever you want. So for the first time you're able to really use any speed you want and you can quickly compare the speeds and choose the one you want. We'll audition as we're going along and it's remarkable for the guitarist or bassist to be able hear how it sounds at different speeds.

"You'd also be amazed with the difference in Michael's singing because of hearing himself analog in the playback. We've also lowered some of the keys so his voice is bigger and he's a lot more expressive. All in all, it's had a huge impact on the performances—we're making a much more emotional album."

Smith was evidently impressed, too. He bought the CLASP box after the sessions and now it can be an ongoing part of his (and Lenox's) recording arsenal.



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Dave Cobb

"I use tape every day," says L.A. producer/engineer/musician Dave Cobb (Shooter Jennings, Brooke White, Oak Ridge Boys). "It's funny because I was one of those people who about eight years ago slowly stopped using tape. I thought digital sounded fine, you can work faster, more conveniently. But the records that have really inspired me the last couple years have been very, very tape-centric. I think Jack White is kind of killing everybody right now—he's the guy who is making the coolest-sounding records around, whether it's the Dead Weather or The Raconteurs; he's the guy to beat right now. His records sound honest and real, and in a way he's making something that is very traditional sound modern and exciting again.

"I just did a record in Nashville by these two girl singers—the Secret Sisters [Laura and Lydia Rogers of Muscle Shoals, Ala.]—and the whole record is supposed to sound 'period,' like it's from 1957 or something. So, of course, I wanted to go analog on it, but if I turned in a budget that said '12 grand for tape,' people would have a heart attack. That's the way it used to be—you would allot \$10,000 or \$12,000 dollars for tape. Nobody gets that anymore."

For Cobb, too, CLASP aided his return to the sonics of analog tape. "It's changed my work flow dramatically," he comments. "CLASP allows me to use the same tapes—my favorites are these old [Ampex] 456 reels I use over and over—and dump each take I do immediately to Pro Tools. I like to do pre-production in the studio where tape is rolling the whole time while bands are working out the songs, and I couldn't do that if I strictly stayed on tape unless I had a huge budget and a big pen to mark down the times between each take and what was special about them and all that. The CLASP allows me to run tape, keep creating playlists inside Pro Tools, and then when I've got what I need I just comp it together."

For the Secret Sisters' forthcoming album, which was cut at Blackbird, Cobb also enlisted '50s Nashville players like steel player Robbie Turner and pianist Pig Robbins for that extra dose of retro authenticity, and he used "old-school" tape effects: "One thing I don't ever go without is tape slap," he comments. "I use a lot of slap and feedback slap and distorted slap and reverse tape stuff and flanging. I have two 2-track machines in the control room so I'm constantly messing around with those. For instance, a 15 ips slap always works with any tempo of any song for some reason. I don't know why it is, but you can put it on the drums or

it will help to tie a vocal with a track. Even if you barely hear the slap and it's buried, it still has a way of making the vocal sit. My heroes are people like Geoff Emerick and Glyn Johns and Andy Johns, who really pushed the limit with tape effects. I think there's nothing that beats them. There's no digital box you can buy, no plug-in that sounds like a tape slap." ■

Blair Jackson is the senior editor of Mix.

L.A.-based producer/engineer/musician Dave Cobb says he uses tape every day.



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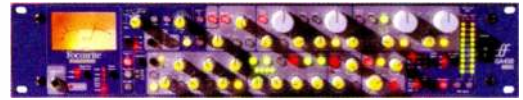


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Top of the Line Channel Strips

By George Petersen

CONVENIENCE, PERFORMANCE FOR THE ANALOG FRONT END

During the past decade or so, channel strips have skyrocketed in popularity, especially with the rise of console-less, DAW-based production. But the concept of the channel strip is hardly new, going back to the early 1980s with the Symetrix 528 voice processor (now in its fifth generation), which combined a mic pre, compressor/limiter, parametric EQ, expander and de-esser in a single-rackspace chassis.

Originally intended to overcome the vocal-processing limitations of simple broadcast mixers, the notion of the voice processor/channel strip caught on. In applications well beyond the broadcast realm, channel strips are a common element in all forms of production, whether as front ends for DAW recording systems or in live sound situations, essentially becoming a “money channel,” the premium input path

for featured vocalists. Housed in a single rack-space (or more) and combined with a favorite vocal mic, a channel strip can bring a consistent sound to the touring engineer who may have to deal with a different P.A. system every night.

Channel strips range from a straightforward mic preamp-plus-equalizer unit to products incorporating versatile dynamics sections and occasionally digital I/O stages. Onboard equalization may be as simple as a single high-pass filter to roll-off low-frequency grunge, or as elaborate as fully parametric control. Additionally, products with insert jacks, patch points and onboard routing provide greater flexibility that provides access to individual sections and processing sidechains, but may also allow users the ability to change the order of the processing chain itself. And these are not just for

vocals and miked elements—high-impedance, ¼-inch direct inputs for instruments and line input jacks on most channel strips open entire new avenues for creative processing, whatever the source.

Today, there are dozens of models available in nearly every flavor (and price range) imaginable—vintage-style or modern, single or multichannel, tube or solid-state, with simple or elaborate filter sections, and smooth optical or fast-reacting FET dynamics. With nearly 50 manufacturers offering products, we decided to focus on the top-of-the-line channel strips from each and found a lot of great gear, which is listed in the chart that follows. ■■

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

CHANNEL STRIPS, AT A GLANCE

Product/Website	Channels	Type	Polarity Reverse	Analog I/O	DI	Digital I/O (max SR)	Master Type	EQ	Dynamics	Extras	Price	Notes
Alto Pro Audio Voice Plus; www.altoproaudio.com	1	solid-state	yes	XLR & TRS I/O	no	no	LED input/output/GR	3-band, variable HP filter	compressor	expander/gate, de-esser, 1/4" inserts	\$199	"Voice Optimized" EQ with sweepable low-mid vocal band
AMS-Neve 880i; www.ams-neve.com	1	solid-state	yes	XLR & TRS in, XLR out	yes	USB; optional AES, S/PDIF; 192 kHz	LED input/output/GR	4-band + HP/LP filters	yes, based on 88RS	gate, de-esser sidechain, XLR inserts	\$3,695	Hand-built and adapted from Neve 88R console channel; Recall software allows settings reset from PC/Mac
Aphex Systems 230 Master Voice; www.aphex.com	1	tube	yes	XLR I/O, TRS out	yes	AES/EBU, S/PDIF outs; 96 kHz	LED output/GR	1-band parametric, HP filter, Big Bottom EQ	Easy Rider compressor	Aural Exciter, gate, de-esser, insert	\$999	Reflected Plate Amplifier tube preamp, logic-assisted gate
API 7600; www.apiaudio.com	1	solid-state	yes	XLR & TRS I/O	yes	no	LED input/output/GR	3-band API 550A circuit	225L compressor	TRS insert/patch points	\$2,995	Same circuitry as API's Legacy console; four bus outs to D25; four aux outs
ART VoiceChannel; www.artproaudio.com	1	tube	yes	XLR & TRS I/O	yes	AES, S/PDIF, USB, ADAT; 192 kHz	VU output, LED GR, output	4-band EQ; sweepable mids, HPF	compressor, expander/gate, de-esser	TRS input insert, AD/DA inserts	\$539	Class-A tube preamp; EQ selectable pre/post-comp; variable input impedance
Avalon VT-737sp; www.avalondesign.com	1	tube	yes	XLR I/O	yes	no	VU input	4-band sweep mids, switchable Q; variable HPF	optical compressor	de-essing via sidechain switch	\$2,500	Class-A, high-current, DC-coupled low-noise output amp
Behringer Ultrgain Pro MIC2200; www.behringer.com	2	tube	yes	XLR & TRS I/O	yes	no	LED output	1-band parametric, variable HP filter	no	line driver handles -10/+4 conversions	\$149	200kHz bandwidth
Bellari RP533; www.rolls.com	1	tube	yes	XLR & TS I/O, sidechain	yes	no	VU output/GR	LF & HF exciter	compressor	input transformer	\$700	Transformer input; sections can be individually bypassed
Buzz Audio ARC-1.1; www.buzzaudio.com	1	solid-state	yes	XLR I/O, 1/4" sidechain	yes	no	LED output, GR	4-band w/ parametric mids, variable HP filter	optical	FET peak limiter section	\$3,630	400kHz bandwidth; Clean/Tranny switch puts transformer into signal patch for tonal variation
Chameleon Audio 7602 Mk II; www.chameleonlabs.com	1	solid-state	yes	XLR I/O	yes	no	LED input	3-band switched frequencies; variable HP filter	no	input impedance switch	\$799	\$275 option adds Carnhill transformer I/O
Chandler Limited TG Channel MkII; www.chandlerlimited.com	1	solid-state	yes	XLR I/O	yes	no	none	3-band switched frequencies; variable HP filter	no	requires \$225 outboard power supply	\$2,595	Combines re-creation of vintage EMI TG12428 preamp with EQ based on EMI TG12410 console
Daking Mic Pre/EQ; www.dakingaudio.com	1	solid-state	yes	XLR I/O	no	no	none	4-band switched frequencies; HP/LP filters	no	transformer I/Os	\$1,850	Class-A design inspired by Trident A range; gold-plated relay switching
dbx 376; www.dbxpro.com	1	tube	yes	XLR & 1/4" I/O, TRS insert	yes	AES/EBU, S/PDIF (96 kHz)	LED output, LED drive, LED GR	3-band parametric, 75Hz HP filter	compressor, Overeasy setting	de-esser	\$650	dbx Type-IV conversions with selectable dither/noise-shaping algorithms
Drawmer 1969 Mercenary Edition; www.drawmer.com	2	tube	yes	XLR I/O, TRS inserts	yes	no	VU output/GR, source	2-band EQ, 50/100Hz HP; 2kHz Bright switch	soft-knee comp w/ stereo link	aux in can route to comp	\$2,850	"Big" switch puts 100 Hz in compression detector path
Empirical Labs Mike-E; www.empiricalabs.com	1	solid-state	yes	XLR I/O	yes	no	LED input, GR	80Hz HP filter	comp/limiter	Saturation circuit adds coloration	\$1,700	Mix control to blend compressed and uncompressed signals; Lundahl transformer with Jensen optional
Fink Analog Audio CS2-FA; www.finkanalogaudio.com	2	tube	no	XLR I/O	yes	no	VU	3-band passive Pultec style	tube implementation of UREI 1176	stereo link switch	\$3,999	Dual-mono or linked stereo operation; Putnam-style preamp
Focusrite ISA 430 Mk II; www.focusrite.com	1	solid-state	yes	individual XLR I/O for each section	yes	optional AES, S/PDIF, ADAT I/O; 192 kHz	VU input/inserts/comp, LEDs for ADC/DAC	4-band parametric mids, plus shelving, variable LP/HP filters	VCA/opto comp/limiter	de-esser, gating	\$3,499	Mic impedance switching, "mic air" effect, dual topology compressor, 1/4" key inserts for gate and comp
GML 2020; www.massenburg.com	1	solid-state	yes	XLR I/O	yes	no	LED input and dynamics meters	4-band parametric, HP filter	all-discrete comp/limiter custom VCA	up to eight units linkable	\$6,000	Massenburg design combining 8300 pre, 4-band version of the 8200 EQ and 8900 Dynamic Range Controller. Requires 9015 power supply (\$650)
Grace Design m103; www.gracedesign.com	1	solid-state	yes	XLR I/O, 1/4" outputs	yes	no	LED output, GR	3-band with parametric mid, 75Hz HP filter	optical compressor	sidechain and stereo link inputs	\$1,750	Ribbon mic mode with 48VDC lockout, 140kHz mic bandwidth, mic pre direct output
Great River MEQ-1NV; www.greatriverelectronics.com	1	solid-state	yes	XLR I/O, TRS out, TRS insert	yes	no	LED input, output	4-band parametric, variable HP	no	patch loop, Sowler transformers	\$3,575	1073-style preamp w/high-current Class-A output stage and 1081-style EQ
Gyraf Audio Gyratec II; www.gyraf.dk	1	tube	no	XLR I/O	yes	no	VU in/out/GR	3-band; variable HP filter	optical comp	comp can be pre/post-EQ	\$2,300	Transformer I/O
JoeMeek TwinQ; www.joemeek.com	2	solid-state	yes	XLR & TRS I/O, TRS insert	yes	AES, S/PDIF; 96 kHz	VU input/GR	3-band sweep mid	optical comp	stereo link	\$949	"Iron" transformer coupling switch adds tonal variation
Lachapell Audio 583e; www.lachapellaudio.com	1	tube	yes	500 Series module	yes	no	no	3-band sweep mids	no	Jensen xformer coupled	\$2,025	Requires two slots in 500-style module rack
Langevin Dual Vocal Combo; www.manley.com	2	solid-state	no	XLR & TS	yes	no	VU output/GR	2-band shelving	opto limiter	stereo link	\$2,000	EQ centers switchable to 40/80 Hz or 8k/12k Hz
Manley SLAM!; www.manley.com	1	tube	yes	XLR input, TRS out, TS out, TT limiter inserts, link jacks	yes	192kHz AES/EBU I/O option	VU switchable (in/out/opto GR), LED switchable (in/out/FET GR)	100Hz HP filter	independent opto & FET limiters, HP filter for opto sidechain	switchable DAC/JADC filters	\$6,600	Limiter circuit from Manley ELOP followed by FET brickwall limiter

Note: All offer phantom powering.

CHANNEL STRIPS, AT A GLANCE

Product/Website	Channels	Type	Polarity	Reverse	Analog I/O	DIP	Digital I/O (max. S/P)	Meter Type	EQ	Dynamics	Extras	Price	Notes
Millennia Media STT-1; www.mil-media.com	1	tube/solid-state	yes	XLR I/O, TRS input, XLR/TS out	yes	no		VU output/GR	NSEQ 4-band parametric	TCL opto comp/limiter	de-esser, pre-processor XLR out, sidechain	\$3,395	Twin Topology design allows selection of tube or solid-state signal path
Mindprint DTC; www.mindprint.de	2	tube	yes	XLR & TRS I/O	yes	optional		LED in/out, GR	4-band parametric mids, sweepable HP/LP filters	optical comp/limiter	low-cut sidechain filter	\$2,299	Parallel EQ mode
MXL Audio MPAC-01; www.mxlmics.com	1	solid-state	yes	balanced I/O	yes	no		VU output/GR	variable HP filter	VCA compressor	unbalanced TRS insert jack	\$699	Low-noise THAT 1512 op amps
Oram GMS AI Schmitt Pro Channel; www.john-oram.com	1	solid-state	yes	XLR I/O, TRS sidechain	yes	no		VU for pre out, comp I/O, main out or GR	6-band semi-parametric	optical compressor	transformer/non-xformer selection path	\$9,000	Co-designed by AI Schmitt
Pendulum Audio Quartet II Mercenary Edition; www.pendulumaudio.com	1	tube	yes	XLR I/O, TS out, 1/4" I/O for EQ/comp	yes	no		VU output/GR, LED limiter ceiling	3-band passive EQ; 75/100Hz HP filter	Delta-mu with brick-wall JFET/MOSFET mode limiter	switchable mic input xformers, variable mic impedance, stereo link	\$5,250	Mercenary Audio version of Quartet
Phoenix Audio DRS-Q4; www.phoenixaudio.net	2	solid-state	yes	XLR I/O	yes	no		no	4-band EQ, HP filter	no	also available in mono version	\$2,999	Class-A discrete design
PreSonus Eureka; www.presonus.com	1	solid-state	yes	XLR & TRS I/O	yes	\$249	192kHz option	VU output/GR	3-band parametric	soft-knee comp with HP sidechain	variable input impedance	\$699	Saturator control for color; EQ switchable pre/post-comp
Requisite PAL Plus; www.requisiteaudio.com	1	tube	none	XLR I/O, XLR line in, stereo link (limiter)	yes	no		VU output/GR	none	L1 optical limiter	negative feedback adjust in mic/DI stage	\$5,000	Transformer I/Os
Rupert Neve Designs Portico II; www.rupertneve.com	1	solid-state	yes	XLR I/O, 1/4" sidechain	yes	no		LED output/GR	4-band w/parametric mids, variable HP	switchable feed-forward/back modes	de-esser; variable Silk and Texture modes	\$3,249	Blend control for mixing comp/uncomp signals
Safe Sound P1; www.safesoundaudio.com	1	solid-state	no	XLR mic, TRS I/Os	yes	no		LED output/GR	HP filter	peak ride comp, limiter	expander	\$999	Onboard headphone cue mixing
Samson C-valve; www.samsontech.com	1	tube	yes	XLR in, 1/4" inserts, TRS out, TRS link	yes	S/PDIF out (96 kHz)		VU output, LED input	18-300Hz HP filter, 10kHz shelf vocal EQ	switchable auto-limiter	Saturation control	\$139	Compact desktop enclosure
Sebatron Thorax; www.sebatron.com	1	tube	yes	XLR & TRS I/O	yes	no		VU output/GR	2-band shelving	optical comp	Drive switch colors output	\$2,190	Passive EQ with Air and Deep bands
SM Pro TCo2; www.smproaudio.com	2	tube	yes	XLR & TRS I/O	yes	no		VU output	80Hz HP filter	optical compressor	xformerless audio path	\$349	Also available as single-channel TCo1
SPL Channel One; www.spl-usa.com	1	tube	yes	XLR & TRS I/O, TRS inserts, A/D input	yes	AD/DA option (96 kHz)		LED PPM output, LED GR	50Hz HP filter, 3-band EQ w/17.5kHz air band	soft-knee comp, limiter	de-ess, gate, distortion, headphone monitor	\$1,699	Lundahl xformer option
SSL X-Logic Alpha Channel; www.solid-state-logic.com	1	solid-state	yes	XLR mic; TRS out/send/return	yes	S/PDIF 44.1kHz (96k via ext clock)		LED output	3-band parametric mid, 40/80/120Hz HPF	"lite" limiter	Variable Harmonic Drive	\$999	VHD adds tube/transistor-style harmonic distortion
Summit Audio ECS-410; www.summitaudio.com	1	tube/solid-state	yes	XLR I/O, TRS out	yes	no		VU output, LED input/GR	3-band selectable frequencies	dual-mode compressor	Drive control	\$3,895	Selectable tube/solid-state, Touchmap internal routing
Symetrix 528E; www.symetrixaudio.com	1	solid state	no	XLR I/O, TRS	no	no		LED output/compression	3-band parametric	compressor & expander	de-esser	\$599	Program-controlled dynamics
Thermionic Culture The Earlybird 2.2; www.thermioniculture.com	2	tube	yes	XLR I/O, direct XLR in to Pullet EQ	no	no		VU output	3-band EQ, 40/100/800Hz HPF	none	switchable impedance	\$4,550	Individual sections are accessible or can be re-ordered
TL Audio VP-1; www.tludio.co.uk	1	tube	yes	XLR & TS I/O, TRS insert	yes	96kHz A/D option		VU input/output/GR, LED digital out/GR	4-band EQ with parametric mids, 25-1k Hz HPF	comp with transconductance and optical	de-esser, expander/gate,	\$3,255	All-tube design with seven tube stages
Tube-Tech MEC 1A; www.tube-tech.com	1	tube	yes	XLR I/O, 1/4" sidechain	yes	no		VU output/GR	EQ 1A 3-band with peaking mids, 20/40Hz HPF	CL 1B comp is pre-EQ capable, stereo link input	multiband compressor	\$5,100	All-tube/transformer design
Universal Audio 6176; www.uaudio.com	1	tube	yes	XLR I/O, direct XLR I/O to 1176	yes	no		VU preamp out/1176LN GR/1176LN out	shelf LF and HF	1176LN FET limiter with "British" mode	switchable impedance on mic and DI inputs	\$2,899	Combines Putnam preamp with classic 1176LN; both sections can be used separately
Vintech 473; www.vintech.com	4	solid-state	yes	XLR & TS outs	yes	no		no	2-band shelving	no	selectable 60/220 Hz and 3.2k/12k Hz on shelving	\$3,195	All-discrete, Class-A design based on 1073 preamps

Note: All offer phantom powering.

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'SALT' SOUNDTRACK

There's been no shortage of action movies over the past couple of decades, with dozens of sub-genres proliferating to satisfy the audience's appetite for war, worldwide destruction, comic books, videogames, legal procedure, historical epic, serial killers, mistaken identity or underdogs fighting the good fight against all odds. But it's a relatively short list when looking through the legacy of intelligent, character-driven action-thrillers, in the vein of *Three Days of the Condor*, *The French Connection*, *The Fugitive* and the Bourne franchise.

Australian director Phillip Noyce entered the club with his smart, story-driven Jack Ryan films, *Patriot Games* and *Clear and Present Danger* from the early '90s. Now he's back, and he's hurtling through modern-day spy territory—practically ripped from today's Soviet spy exchange headlines—with Angelina Jolie on the run in Sony Pictures' summer blockbuster *Salt*.

"My first reaction, on seeing an early cut, was, 'Wow!'" recalls Greg P. Russell, effects re-recording mixer from the Kim Novak Theatre on the Sony lot in mid-July. "It's exciting, well-paced, authentic and realistic. The action is believable, and it's a solid story, really solid, with twists and turns that kept me guessing through to the end. And I loved the Salt character. Unique and clever, smart and bold. Angelina Jolie does such a great job with this role, and the film is filled front to back with incredible sound opportunities."

Russell was joined at the Harrison MPC by Jeff Haboush on dialog, a mixer he's teamed with on and off for nearly 27 years, and Scott

Millan, a veteran of the Bourne films and a hit man brought in to handle music. In essence, it was a return to the three-person crew that was the norm not so long ago in Hollywood. Noyce called the track the most complex in his career, and his vision was established clearly from the beginning.

"On day one, Phillip laid out the game plan," Russell recalls. "Story and character were key, and everything we did in the soundtrack had to support her story. She is a CIA agent accused of being a Russian spy, and she's on the run trying to clear her name. So all the tension that we feel, whether it's coming from effects and high-octane car chases and bullet whiz-bys, or the group dialog with its precise, story-specific lines, or the music with its big brass and intense rhythms—we need to feel that threat she is experiencing throughout the film. He laid it out in a way that we were on the same page from the first temp dub."

MUSIC AS CHARACTER

"The movie was sold by Sony Pictures using the tag, 'Who is Salt?' And that's really what the movie is about," says Noyce. "It's an investigation into the character of Evelyn A. Salt. She may be what she claims to be: an American patriot, a clandestine operative, a spy working for the CIA in foreign countries. Or she may well be what she is accused of: a Soviet-era laboratory rat bred in a secret camp in the last dark days of the KGB. Music augments that speculation about the true nature of her character, suggesting sometimes that

she is more of an American patriot than she really is, and at other times suggesting there might be a darker side to her history. The music, in a sense, is following its own script, which is sometimes on the screen and sometimes isn't."

The film is a tight 93 minutes of story, with 91 minutes of score from James Newton Howard, edited by longtime Noyce collaborator Joe E. Rand and delivered from his stage-side Pro Tools rig at 60 channels wide, with clear separation of orchestra elements and electronic supplements. The challenge, according to music re-recording mixer Millan, was to propel story, drive character, but never let the audience know it.

"James Newton Howard and Joe E. Rand did a fantastic job," says Millan, who migrated to film from a music background. "You never feel overwhelmed; you just feel subliminally engaged without ever feeling manipulated or telegraphed. Philip and James choreographed it in such a way that it plays into a perpetual sense of moving forward and keeping the tension high. The rhythm of the score as a whole was imperative. You never feel like you're stopping, or that there is a beat out of line."

"In this particular film, music drives the soundtrack, and that's quite unusual for an action film, where usually it's the effects that drive the sound," Noyce adds. "The reason music drives the film is because I've used James Newton Howard's score as the unifying factor to combine what is on the one hand fantastical, escapist popcorn entertainment, and on the other hand, a fact-based thriller—

BY TOM KENNY

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two seemingly irreconcilable genres that are pulled together and held tight by James' score. Everything, in a sense, was subordinated to the music."

EFFECTS AND PACE

While music drives the film, the effects track, and its give-and-take with the score, keeps the pace. At times it's relentless, but it never turns bombastic. Phil Stockton and Paul Hsu, out of C5 in New York, co-supervised the film, with Hsu concentrating on design and Stockton overseeing the dialog and overall delivery at the final.

"I had never worked with them before," says Russell, "and they delivered stellar material, sounds that put us in these very real environments. Some fantastic city sounds, and the technical wizardry of all these control rooms, the beeps and boops in the interiors. Great explosions, great vehicle sounds, and I really loved the gun work. I think people will notice that the weapons have a fat, punchy but crisp sound. You feel them in your chest without being overcooked."

At the final, Russell went out to about 10 or 11 5.1-channel hard effects predubs at any one time, with another 40 channels of props and 40 channels of footsteps from the Foley team per reel. It's a busy movie, filled with location shoots across a lot of urban environments, hand-to-hand combat, principals on the run and lots of crowds. "There are a lot of human beings in this movie," Russell says, "and human beings can get busy. There had to be an enormous amount of Foley to bring out



the detail, and Dan O'Connell and his team did an amazing job of walking this film." Marko Costanzo assisted the Foley walking, with recording by George A. Lara.

Particular attention was also paid to backgrounds in this film, as the characters move constantly and the tracks serve to anchor the audience in reality. When *Mix* first visited the Novak Theatre in early June, Russell and Haboush had just started their first passes, and Russell was knee-deep in BGs, eventually ending up with four "5-3" predubs, meaning four each in a 5.0 and 3.0 format to give himself separation and flexibility at the final. The BGs also serve to spin the characters in and out of a few key flashback sequences that help illuminate character.

While BGs and Foley provide the glue for the effects track, in a very busy film such as *Salt*, it's the big sequences that the audience will remember, and there is no shortage here. Though Noyce preached from the beginning that the track always needed to be looked at in its entirety, to the extent that he calls it remixing, a few key scenes stand out for Russell.

"I loved her initial escape sequence, where she goes over the overpass," he says. "It's in

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STORY AND CHARACTER WERE KEY, AND EVERYTHING WE DID IN THE SOUNDTRACK HAD TO SUPPORT HER STORY.”

—Greg P. Russell

the trailer, so I'm not spoiling anything. But she launches herself off an overpass, lands on a semi truck, jumps from vehicle to vehicle while they chase her, then she crashes and is up and off on a motorcycle.

"Phil [Stockton] and his team also provided an array of very cool explosions," he continues. "In one particular scene, at a pretty dramatic moment in the film, we have a design-reversed sound effect that ties right into a very crisp button-click with a high-frequency ping into a huge dynamic explosion. It's a concussive impact that goes right through your body. It's a unique sound, that concussive impact, and it's one of my favorites in the movie. Then again, there are a lot of moments like that."

By all accounts, Noyce has a discerning

'Salt' Sound

ear and was deeply involved, down to the most minute changes, in the track. He wanted to feel a lot of sound, and he wasn't afraid to pan around the room to open up space for the audience to hear it all.

"I've always believed in using sound as an 'emotionalizer,' if I can make up a word," Noyce laughs. "No sound is innocuous, no musical note is innocuous. They simply exist. Whether it's the rustle of the wind, the sound of birds, the footsteps or the strings, they all have a dramatic and an emotional purpose within the soundtrack.

"We set out at the beginning of the sound work with a number of objectives," he continues. "One was to ensure that as a ride, *Salt* is relentless. Once the audience gets on, we want the roller coaster to never stop. The audience has nowhere to hide, you just hold on and hope you get to the end with your brain intact. That means you are trying to create incessant rhythms of sound. There can be no pause. You're trying to hit them and hit them and hit them as if you have them against a wall, punching them. But you want them to feel as if you're just stroking them, because you want them on the edge of their seats wanting more. Every time they might want to feel like a pause, there's another sound ricocheting into the next sound, that's bouncing forward into the next one. And they keep going with in a rhythm that's relentless. The trick is to find the right level, and I don't mean volume. I mean the right level of complexity without ever being bombastic."

DIALOG AND RHYTHM

There are a lot of principals and a lot of extras and group in the film, leading to what Haboush, a nearly 30-year veteran, calls "one of the most complicated mixes I've ever done." He set up at the Harrison with seven predubs: dialog, ADR, two group, an x track, a futz track and a PFX (production effects) track.

"Phillip loves the cacophony and the layers, not only in effects, but in dialog, too," Haboush says. "Real walkie-talkies with police calls. CB radios with squelch and static. TV monitors, newscasters, people in and around the President's bunker and in CIA headquarters. Control room interiors and a ton of outdoor scenes where we had to seamlessly blend in the ADR. But the nice thing is he is not at all afraid to pan dialog, but not for a cheeseball or geographical effect; it's more to open up the space so he can get important group lines or offstage lines to poke through and tell the story."



From left: Igor Nikolic, first sound assistant; Scott Millan music mixer; Philip Stockton, supervising sound editor; Jeffrey J. Haboush, dialog mixer; Deborah Wallach, ADR supervisor; Phillip Noyce, Director; Greg P. Russell, effects mixer; Paul Hsu, supervising sound Editor; Joe E. Rand, music editor

Noyce spent five months writing, casting and recording the group dialog, as he considered every single line crucial to story. In a key scene at New York's St. Patrick's Cathedral, where the President is delivering a eulogy and all hell breaks loose, he kept the extras on location, and with production sound mixer William Sarokin recorded some stellar lines for perspective and energy, with reverb intact.

"The church scene is a real good example of how he is not afraid to move around the room," Haboush says. "He cuts constantly to all these different angles, from security areas where they're monitoring the eulogy and the President is off to the right, then over to the rears, cut to the catacombs and you hear him reverberating through the speakers, then you pop up on the other side of the church, then you're tight up on him. And all those reverbs are panned. But it's never distracting. He moves the dialog without you even noticing that he is doing it."

The group dialog track became key for Noyce because it adds that layer of verisimilitude, placing the audience believably in the center of the action. "This is not fake group," Haboush explains. "None of that, 'Duck, he's got a gun!' Every line had meaning. My favorite scene is really all of reel 5, when you're down in the bunker under the White House. You have professional newscasters commenting on this crazy day, coming out of monitors in a room full of people. Walkie-talkies. Perspective cuts in and out of the room. At one point I put this cool P.A. effect on our lead actors because they're coming out of a speaker. Then we're back in the room inside all the chaos. It's an amazing use of layers, and you hear every syllable. William did a great job with the production



Effects re-recording mixer Greg P. Russell, a 13-time Oscar nominee, at the Harrison in the Kim Novak Theatre, Sony Pictures Studios.

track, and Deborah Wallach did a great job of providing ADR that was seamless."

No doubt audiences will leave theaters feeling like they've been on a roller coaster, but the way it's been set up, they won't feel yanked around and they won't feel ear fatigue or the lingering effects of sonic bombardment.

"This is a great ride, one of the better films I've worked on," concludes Russell. "A spy thriller is right up my alley, and this is Phillip Noyce doing what he does best. What more could you ask for?"

Being the director, we'll give Noyce the end credit: "This mix team could be described as 'smooth as silk.' I don't think I've ever had a soundtrack that was so complex and yet at first appears to be quite straightforward. I've had many tracks over the years that have cried out to the audience, 'Listen to me!' This track doesn't cry out listen to me. You just listen to it. You don't know what is being done to you, but these sound mixers are wrapping you up and pushing you along this way and pulling you that way. But because they've mixed so subtly, you give over to the experience. And that is truly great sound mixing." III

Tom Kenny is the editorial director of Mix.

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**STEVEN SLATE
DRUMS**

At this point, baby Wengren entered the world and the band had a slew of material. Next stop, Groovemaster Studios (Chicago), where the band has tracked all of their previous releases, albeit at the studio's former location; the studio has since moved to the South Loop area and should be finished with construction by the time you read this. "The thing I love about [Groovemaster] is that I'm home in Chicago," Donegan says. "I don't feel like I'm going to work to punch the clock or going to L.A. and have the record label pop in any moment they want. [Laughs.] Groovemaster feels like I'm going to a friend's place where I'm kicking back, recording ideas and nobody interferes with us."

The band's past experience in working at this studio and self-producing their previous album, *Indestructible*, helped create a relaxed, but direct *modus operandi* as they once again self-produced. "Every time is a learning experience, especially working with the other guys in the studio," Donegan says. "Working with [producer/studio owner] Johnny K, who was our first producer, we were doing our demos with him before we got signed and we learned a great deal: how to track things properly, how to get performances. And we've always had a good sense of the direction of the band and we never really had to rely on a producer to shape the band because we've already done that; we already know what we are trying to achieve. By self-producing, I personally like that added pressure of having to deliver. It makes everyone come into the studio knowing that it's all on our shoulders to deliver a great record."

Sans producer, Donegan took it upon himself to act as ringleader, overseeing arrangements and performances—pushing each bandmember to get more out of them. "I'm the studio guy who is going to be in [the studio] first thing in the morning and I'll be the last guy to leave," Donegan says of his nature to be involved in every aspect of the record-making process. "I think because the songs start with me bringing in a riff, I have more of a clear vision of what I'm trying to achieve musically: the syncopation of the drums or certain bass lines." While Donegan is pushing Wengren and Moyer to go past a previous creative limit, Draiman handles his own vocal production, though Donegan will listen to his vocal performance and give critiques and such. "I can throw those opinions at him and push him in a certain direction," Donegan says. "But overall, it's me overseeing the majority of it and vocally David hitting his part. I think the challenge now is that it's been so long—we're five albums deep, not to mention all of the B-sides—lyrically, what do we sing about that we haven't done? Musically, where do we go next? We want to continue to evolve and stretch out a bit."

And the band surely did stretch out on this album. Hardcore fans will still experience that "in your face" raucous theme, but there are also more instrumental flavors. "Asylum," the first track that Donegan wrote, is more than seven minutes long because of a two-and-half-minute melodic guitar solo, bringing in yet another color to the band's hard and edgy vibe.

Tracking at Groovemaster took place over the course of seven weeks, with the assistance of engineer Jeremy Parker, who has worked on numerous albums, including those for Evanescence, Mudvayne, Godsmack and Slipknot. Parker used the studio's Neve 8128 console and a variety of other preamps for tracking, including a Neve 1095 and Melbourne. Some processing was used for monitoring, but for the most part the mix was left open for mixing.

Monitoring was on ADAM A6 near-fields for critical listening, Genelec mains for "getting loud" and Cadillac car speakers for translating to consumer speakers. Yes, Cadillac speakers. "Johnny K brought in an old Cadillac through the side of the building [the studio was still under construction] to put up on one of the floors," Donegan recalls. "Usually when we record and we're doing rough mixes, we want to go into the parking lot and do a car stereo test. His idea was instead of us running out to the car, let's bring the car in the building and do it that way." [Laughs.]

As for the actual recording, each bandmember laid down their tracks part by part, doing the songs in groups. As there were originally 17 songs being recorded—12 of which ended up on the final—the band didn't want to bang out all of those songs at once, just to keep them fresh. "[Drummer] Mike would do four songs, I'd jump on guitar and track my rhythm, and then we had John come in and track his bass. We'll get just the basics down; I might do a couple of overdubs or a solo here or there, depending on what David wants to feel vocally. We want to give him enough of the fullness so that he feels the energy and his delivery matches in power."

Miking each performer was pretty standard. Draiman sang into a Neumann M149 run through an 1176 compressor. The drum kit saw



PHOTO: NICHOLAS FOURNIER



Mix engineer Neal Avron at the SSL 6056 E/G console at Paramount Recording Studios (Hollywood)

a variety of mics, including Sennheiser 421s on toms; Shure SM57 for snare top and bottom; an AKG D 112 inside the kick and a BLUE Mouse on the outside; Telefunken M16s on overheads; a BLUE Bottle on the room; and AKG 414s on hi-hat and ride. Guitar cabs took SM57s and 421s, while bass amps were miked with a Neumann FET 47 and 421. Asked about the mic selection, Parker replies, "My background is to keep it simple: Make sure the instruments sound good." Plus, Parker wanted to keep the final tracks as clean as possible so that mixer Neal Avron could work his magic.

Asylum marks the third album Avron has mixed for Disturbed, working out of Paramount Recording Studios (Hollywood) on an SSL 6056 E/G console. "I've been mixing on that console for six years now. I know the board and I know the room," Avron says. Equally helpful is that the tracks came to him clean and that the band, who were in attendance for each mix, "knows exactly what they want and they track it that way so there's already a real focus and direction to each song. I don't consider a Disturbed record to be a highly effected record when I'm mixing. The most effects were some of the keyboard sounds

and loops they were using.”

For each song, Avron would either listen to a rough mix or put up all the faders and decipher what the band’s vision was. “With Disturbed, most of the record is very in your face, pretty dry and punishing drums and guitar, but still very melodic. It was more of just listening to each song and maximizing each part of the song so that the dynamics stayed there. I think there were a couple of songs where we added a percussion item here and there, but most of the tracks came out how they were sent to me. There might have been a few places where I was printing some delays and those kinds of things that I thought worked rhythmically for the song. I was trying to make things as big and wide and open and 3-D as possible.”

While those mixes tended to be quite full, this time around, Avron notes that the songs had significantly fewer guitar tracks; before, there were four or six rhythm guitars, while *Asylum* had two, “and that’s nice in the sense that there’s less to deal with and make each sound bigger as opposed to trying to get each little guitar tone its own space.”

Disturbed was keen on bringing out the drums on this effort. “The drum tones have gradually improved for us,” Donegan says. “There’s a lot of syncopation in Mike’s playing, which complements the guitars. We wanted to focus on making sure those drums cut through—feel those tribal beats, even the ride cymbal.” As such, Avron spent a lot of time ensuring there was definition between the toms and kick drum, as Wengren basically plays a lot of 16th notes throughout a section. “It was more figuring out how much tone we could allow for the toms and other drums, depending on the tempo of the song,” Avron says. “Where there was more space, we could allow more tone, texture and depth; when things got faster, they had to be tightened up.”

Once the band approved these little tweaks, Avron flew through the mixes, finishing nearly a song a day. “These guys are pros,” Avron says. “They know how to make records, they know the things they like and they try to get that down in tracking. It’s just my job to make it sound awesome.” Ted Jensen at Sterling Sound (New York City) handled the mastering.

Asked about his favorite part in making this record, Donegan says, “The thing I love about doing it in Chicago is that we’ve done a lot of [recording] in the winter, which is a pretty miserable time of year. I like that because there’s nothing to do outside so you might as well lock yourself up in the studio for 12 or 14 hours a day. I think that blue-collar mentality and being miserable helps the music in what we’re doing; that’s part of our sound.” ■

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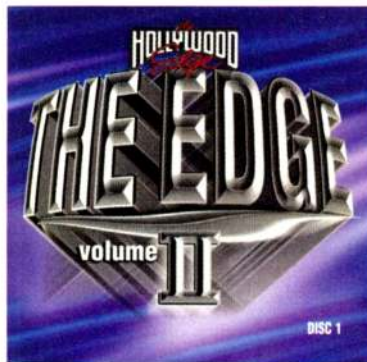
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SESSIONS

Megan McCormick—'Honest Words,' Honest Music

Megan McCormick is a young singer/songwriter/guitarist with a singular pop-rock sound. It's almost unfair to make such comparisons, but imagine a voice like k.d. lang's but younger and breathier, and electric guitar work that's effortless and emotional. With the help of a great group of musicians and Grammy-winning producer/engineer/mixer Dave O'Donnell, this Nashville-based artist has recorded an impressive debut album, *Honest Words* (Rykodisc).

The album was made in three sessions (live band tracking, vocals/overdubs and editing/mixing), starting with band tracks at Paul Moak's Smoakstack Studios in Nashville. "We had a great experience down there; the studio has everything you need, and Paul also has a lot of guitars and amps that he would let us use," says O'Donnell. "Megan plays a Gibson Valley Arts guitar, the Brent Mason model. She gets a great tone out of it and used it on almost every song, though we used a Gibson 335 on a few songs. Megan is as good a guitar player as anybody I've worked with." O'Donnell's credits include Eric

Clapton, John Mayer, James Taylor and many others.

McCormick uses a few pedals: "a Tube Screamer, analog delay and digital reverb, which she varies depending on the song," O'Donnell says. From there, her guitar goes through a Vox amp (or a Fender for the 335) that is miked with a Shure SM57 and a Royer ribbon, each captured to its own Pro Tools track. "I tend to record things pretty flat," he says. "For guitars, if there's a lot of picking and it's dynamic, I might also use a [UREI] 1176. If it's not, I won't use a lot of compression. On [Rich Brinsfield's] bass, we used an LA-2A—that was direct and through a B15 amp."

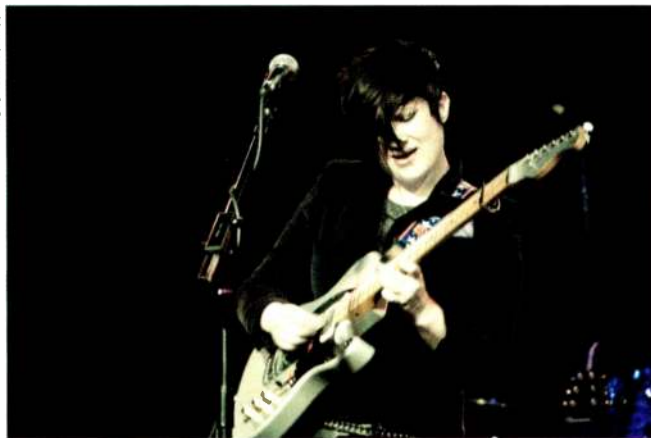
A few of the tracks feature Viktor Krauss on upright bass, which O'Donnell miked with a Neumann U47 through an LA-2A. On Lee Holland's kit, O'Donnell used techniques he learned early in his career at New York City's famed Power Station Studios (now Avatar). On snare, 57s top and bottom; Sennheiser 421s on toms; a 57, AKG 451 or Neumann KM84 on hi-hat; Coles ribbons overhead; and a few other mics set up by the studio. "They also had what I think was a driver from an NS-10 on the kick—the speaker acting like a mic through a direct—so you get a great sub sound."

When band tracks were complete, O'Donnell and McCormick headed up to New York City to add vocals and mix. O'Donnell captured McCormick's voice in Maximum Volume, a studio owned and (usually) operated by Kyle Kelso in the same building as O'Donnell's Studio D (Yamaha DM2000 board, ProAc Studio 100 monitors), where the album was mixed. "The vocal mic was a Peluso 22 251 tube mic," he recalls. "It worked great for her voice. The chain was then to a Chandler LTD-1 mic pre and 1176 compressor. I don't EQ vocals when recording and I also don't compress a lot, though for 'Addiction' and 'Shiver' I remember hitting the 1176 harder.

"I'll spend more time on vocals," O'Donnell continues. "It's the most important thing. And the great thing about Megan was she was willing to try anything."

—Barbara Schultz

PHOTO: KARAN SIMPSON



Megan McCormick's debut album was engineered and produced by Dave O'Donnell.

Profile

Studio West

PHOTO: CALEB REITER



From left: Studio West owners Amy Dyson, Mark Kirchner and Peter Dyson in the newly redesigned Studio B control room

Studio West (www.studiowest.com), which has offered commercial recording services in the San Diego area since 1971, completed a series of redesigns this year. Peter Dyson, owner since 2005, and Dyson's partners, wife Amy Dyson and Mark Kirchner, upgraded every room within the 8,000-square-foot facility. "I think any studio needs to look at what they want to do in the future," Dyson says of the upgrades, which outfitted Studio West for music production (including mixing and mastering), sound design, audio post, film and videogame trailers, and ADR and ISDN sessions, and also enhanced its surround capabilities. "We did the redesign with a view of conducting Pro Tools training and running

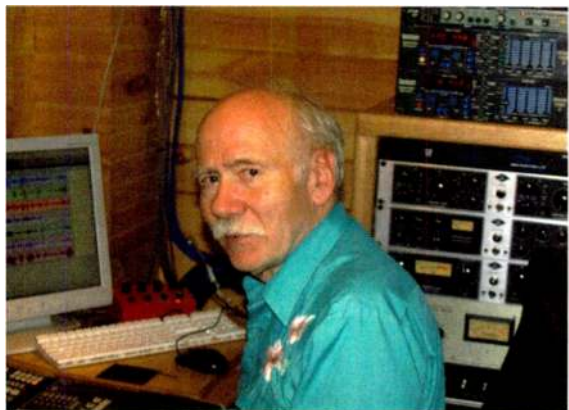
a commercial studio within the same [facility]." The process began in 2006 with acoustician Bob Hodas overseeing an upgrade of Studio A, the primary tracking room (70-channel SSL 4064 E/G Series console, Neve BCM10 sidecar).

In 2009, the Dysons and Kirchner called on Hodas and enlisted Michael Krewitsky of San Diego's Professional Sound & Music to adapt Studios B and C for newer markets. "With Studios B and C, we've tried to push into the post market," Dyson explains. "San Diego is very much in the hub of the videogame industry. The post market here was clearly underserved. Because of our proximity to L.A., it's easy for people to say, 'Let's do our post

Quad Lakeside Is Latest Studio From Lou Gonzalez

Quad Nashville owner and veteran engineer Lou Gonzalez makes this important distinction about his new facility, Quad Lakeside: "It's a studio in a home, but it's not a home studio."

Quad Lakeside is built into a historic house



Lou Gonzalez chose an SSL AWS900+ SE console for his new Quad Lakeside studio.

in Greenwood Lake, N.Y., where vaudeville entertainer Herb "The Diamond King" Lloyd once operated a dance hall, and then a speakeasy during Prohibition. Later, the building also housed a bed and breakfast. Gonzalez, who says he found the structure essentially abandoned in 1993, turned the dance hall space—which had an existing floating floor and fieldstone walls—into a 30x40-foot tracking room with two 11x16-foot drum/iso

rooms and bed-and-breakfast accommodations for musicians. Gonzalez now operates Lakeside as a commercial studio with the help of engineer Rick Slater.

Opened in the winter of 2009, Quad Lakeside also includes a 12x12-foot control room that is equipped with a new SSL AWS900+ SE analog console, Studer A827 machine, Pro Tools HD3 and a variety of newer and vintage mics, monitors and outboard gear, some of which Gonzalez had retained after the sale of his Quad Studios complex in Manhattan five years ago.

"I sold the Manhattan facility thinking I was going to basically retire from the business," Gonzalez recalls, "and after about three months, I missed it so bad I had to do something."

Now Gonzalez is happily busy again, recording bands and ensembles in a more relaxing location: "I have a guest house on the property," he says, "so if someone takes over the house, like a couple of weeks ago when we had a group of 12 musicians in, I can find peace and quiet in the guest house. And with a good running start, you can jump from the front of the house into the lake."

Visit www.quadlakeside.com for more about the studio's location, amenities and equipment.

—Barbara Schultz

Rod Abernethy Scores *Despicable Me* Videogame

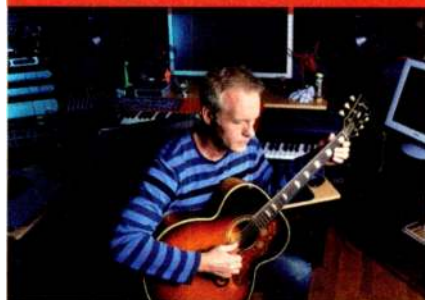


PHOTO: CURTIS BROWN

Rod Abernethy composes and records in his personal studio.

In July, Universal Pictures released the animated 3-D CGI feature *Despicable Me*, starring Steve Carell as the voice of Gru, a mean-spirited villain who endeavors to steal the moon—only to be thwarted at every turn. In *Despicable Me: The Game*, players assume the role of Gru to pursue evil schemes. Award-winning composer Rod Abernethy (rodabernethy.com) crafted the game's score—which is playful yet suspenseful—working in his project studio in Raleigh, N.C.

"It was really fun and different from a lot of scores that I do, which are harder-edged," Abernethy says. "[Videogame developer D3Publisher/Vicious Cycle] wanted a sneaky feel—more of an *Incredibles*, *Pink Panther*, *James Bond* kind of feel, with orchestra, electric guitar, vibes. But it couldn't be too despicable [laughs]; it had to be kid-friendly."

Abernethy worked in Digital Performer, played all of the guitar parts and drew sounds from his arsenal of soft synths and sound libraries, including EastWest/Quantum Leap's Symphonic Orchestra Platinum Complete, Vienna Symphonic Library, ProjectSAM's Symphobia, Toontrack's EZdrummer and Abernethy's custom libraries.

—Matt Gallagher

Send "Sessions" news to bschultz@mixonline.com.

by Matt Gallagher



Client comfort was a major consideration in the redesign of Studio C.

there."

"After working in those rooms for years, you discover what the problems are, and we set about correcting the problems as gently as we could," Krewitsky says. "We were trying to work with [existing

room] geometries from the original layout." Studio West's previous owner had flipped the orientation of Studio B by 180 degrees and added a window between the control room and iso booth. The designers returned Studio B to its original orientation, replaced the window with a 4x9-foot diffusion wall (Auralex Space Couplers), added bass trapping and installed a 32-fader D-Control ES console and Pro Tools HD6 system, as well as a two-way high-def video monitoring system, among other mods.

The new Studio B hosted the sound design and surround mixing for the *Iron Man 2* videogame trailer and ADR sessions with actor Richard Dreyfuss for the new movie *Piranha: 3-D*. Studio

C, which Dyson initially converted from an office to a post room, was redesigned for film mixing and music mastering. The owners added hanging acoustic clouds and sidewall panels, and installed an 8-fader D-Command console with a Pro Tools HD5 system.

"There's a central machine room [located] between B and C, where there are racks of computers with Pro Tools and interfaces and the ability to move audio throughout the facility," Krewitsky says. "So a band can be tracking in A and we can move sessions over the network from A to B, so they can do mixes and editing, and then over into C, where clients could hear playback." ■

CLASSIC TRACKS



Dwight Yoakam (right) with his hero Buck Owens

Dwight Yoakam With Buck Owens

“STREETS OF BAKERSFIELD”

By Barbara Schultz

It's still pretty surprising that Dwight Yoakam became a country music star. He was playing working-class bars and punk clubs in L.A., performing his original songs and classic-country covers for old-schoolers and college kids at a time when the hits coming out of Nashville were lush, overproduced—more pop than country. Yet with his fist wrapped around the torch passed by the pioneers of the Bakersfield sound—Merle Haggard, Wynn Stewart and Buck Owens—Yoakam and his producer/guitarist Pete Anderson managed to turn a throwback approach into hit after hit.

Yoakam and Anderson were leading sort of parallel lives, playing a lot of the same venues in L.A.'s roots-punk scene in the early '80s, but they didn't meet until a mutual acquaintance, steel guitarist Bob “Boo” Bernstein, suggested Anderson check out the act then known as Dwight Yoakam & The Kentucky Bourbons. “Boo said, [Dwight's] got this guitar player called Jerry McGee,” Anderson says. “Jerry had played with The Ventures and

a lot of other people, and being a curious guitar player, I thought, ‘I'd love to hear Jerry McGee.’”

Bernstein gave Anderson a tape of Yoakam's material, and Anderson recognized that Yoakam had written some really strong songs. Then, “Out of the blue, I was playing with the same steel player, and he invited Dwight to sit in at a club we were playing at in the West Valley,” Anderson says. “He sang a couple of Merle Haggard songs, which I knew the licks to, and at the same time he'd had sort of a falling out with his guitarist.”

Yoakam asked if Anderson would play a gig that he had coming up. That first gig turned into many more, and when they had some really solid arrangements of Yoakam's originals and several covers, they raised \$5,000 to make an EP called *Guitars, Cadillacs, etc. etc.* in Brian Levi's Excalibur studio in Studio City, Calif.

“Then Warner Bros. came to the party and signed us, turned it into an album with four more songs, and the record sold 2 million copies,” An-

derson says. Yoakam's recording budget also went up a bit.

“He'd cut that EP on spec or partly on a credit card,” engineer Dusty Wakeman recalls, “but when I came on board and we cut the four other songs to turn the EP into an album, that was the first time we went to Capitol.” At that time, Wakeman owned and operated Mad Dog Studios in Venice, Calif., and had met Anderson when the two worked together recording the first *Town South of Bakersfield* album—a seminal record in the history of country music in L.A.

Capitol Studios (Hollywood) hosted sessions for Yoakam's first three albums: *Guitars, Cadillacs* (1986), *Hillbilly Deluxe* ('87) and *Buenos Noches From a Lonely Room* ('88), which includes “Streets of Bakersfield.” Wakeman engineered those first three albums and beyond. He says Yoakam had enough material written for all three records before sessions began, so Yoakam and Anderson planned ahead to create a balanced track list for three albums. When they were tracking to flesh out the EP, Wakeman says, “We felt like, any day, some adult's going to throw us out of here: ‘What are you kids doing in here? Get out!’ Pete and I were like, ‘Wow, look at us! We're at Capitol!’”

Yoakam, Anderson and the band went on the road to promote *Guitars, Cadillacs*, and it was during this time, as his own career began to really build steam, that Yoakam managed to coax the legendary Buck Owens—then in his mid-'50s—out of premature retirement. “Dwight met Buck at the radio station [owned by Owens] in Bakersfield, and somehow he got Buck to sit in at a fair or something,” Anderson recalls.

Owens apparently enjoyed Yoakam's friendship and admiration because he agreed to more performances with the band, and it was Owens who suggested that the two singers cut the Homer Joy song “Streets of Bakersfield” as a duet. The song was slated for album number three, with a new arrangement by Anderson. “When Dwight and I played clubs,” Anderson says, “I would sing occasionally. He would take a break, and I would sing a tune, and I used to do a song called ‘Anybody Goin' to San Antone?’ which is a Charley Pride song, but I did it as a Tex-Mex polka sort of

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thing, and I thought it would be a cool way to do the Owens song because if you do a polka, everybody gets up and dances." The arrangement also captured something essential in the song's meaning: a sense of walking in the shoes of a newcomer looking for a better life in California.

By the time the team went to Capitol for the third time—to make *Buenos Noches*—they'd grown pretty comfortable in Studio B. "It was like a second home," Wakeman says. "Plus, the two guys who worked with me over the years there, Charlie Paakari and Pete Doell, who were supposedly my 'assistants,' were way better engineers than I was at that time. I was also smart enough to ask them for advice. Charlie was my assistant for the first three albums. So when they would ask me, 'How do you want to mike the drums?' I would answer, 'Well, what works well for you in this room?' because those guys were there every day."

Wakeman recalls that drummer Jeff Donovan's kit would have been miked "with [Telefunken] 251s for overheads, and they probably would have been [Sennheiser] 421s on toms and a [Shure] SM57 and an original [AKG] 451 with a pad on the snare and a 451 on the hat. We had one [AKG] C24 out in the room and a couple more room mics, probably U67s. But there was always a C24 up. The vocal would have been a [Neumann] U47 on Dwight and one on Buck. We probably used a 47 on fiddle and one on accordion."

Wakeman says *Buenos Noches* was cut to Studer A800 machines: "I think we cut basics to 16-track and then synched up a 24 for overdubs." All the basics were cut live in the way that Owens and his Buckaroos would have cut their songs 10 or 20 years before. And the ever-modest Wakeman, who by this time had become an in-demand engineer with a wealth of knowledge and appreciation for old and new technologies, still sounds like a kid in a candy store talking about Capitol Studios: "The A800s were the best. They had that awesome Neve 8068 that just everything sounded good through, and I remember we had an early Focusrite mic pre and EQ—one of the original Rupert Neve ones. We cut a lot of overdubs through that. And, of course, you know, Capitol's got those eight incredible live echo chambers that should be made a national shrine that are underneath the parking lot. They all have different sounds and different shapes, and we used them on fiddles and accordion and vocals on 'Streets of Bakersfield.'"

There was, however, an issue when it came time to record those vocals: "We were in a hurry to get Dwight's vocal done because Buck was coming in and we needed Dwight's to be complete," Wakeman says. "I think we'd done five passes. In those days, Pete would sit at the console and I would run the remote, and we would do the comp. But we

would do it by him marking on the lyric sheet and I would put it together later. Somehow, his numbers got off from my numbers—like we would keep the first two passes so maybe I would say [the others were] three through eight, but he called them one to five. I knew we had a great vocal in there, and Buck was on his way, and we thought, 'We'll put it together in the morning right before Buck comes in.' Buck was supposed to be there at 11, and so at 10 Charlie and I were bouncing the vocal together, but somehow it doesn't sound good. It was the wrong take. It was the worst instead of the best, and by the time we figured out what must have happened, Buck and Dwight walk in the room, ready to start singing.

"But we didn't want to look like idiots," he continues, "so I called Pete aside and told him what happened, and said, 'You've got to stall them!' So he goes out into the room and just starts asking Buck to tell stories while we frantically put the right vocal together. It took us 20 minutes with Pete stalling, and they never knew."

The accordion part was performed by Norteño legend Flaco Jimenez in Capitol Studio C after the rest of the track was completed. Anderson describes Jimenez as "the Jimi Hendrix of Norteño accordion. Flaco just rolls with the wind. I played him the track, and he was like, 'I know this groove,' and started playing."

"Flaco is a one-take player. If he feels it, it'll be perfect, right off the bat," concurs Wakeman, who has worked with Jimenez several times since they recorded "Streets of Bakersfield." The engineer also continued to run Mad Dog in a couple of different incarnations and locations until last year when he became president of Mojave Audio. He can still be talked into playing or engineering for a longtime friend such as Pete Anderson, whose association with Yoakam lasted through 2003. These days, Anderson runs his own Little Dog Records label and Dog Bone Studio, as well as producing and playing on others' records.

Owens passed away four years ago, but at least in part thanks to Yoakam, his comeback career continued for years after the two artists recorded together. He made another album for Capitol in 1989 and toured with and without Yoakam. When he wasn't on the road, Owens performed weekly at his Crystal Palace club in Bakersfield until his last gig, just hours before his passing.

Yoakam is now known as a film actor as well as a singer/songwriter. Back in '88, "Streets of Bakersfield" was a Number One country single, and *Buenos Noches* went to Number One on the country album charts. He hasn't released an album in a few years; his most recent is the 2007 release *Dwight Sings Buck*. III



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PHOTOS: STEVE JENNINGS



Sting performing with the London Symphonic Orchestra at Concord, Calif.'s Sleep Train Pavilion

By Sarah Benzuly

Sting, Royal Philharmonic Orchestra

RE-WORKED CLASSICS ARE IMAGINED FOR THE STAGE

Any consummate artist wants to up their game. Take their musical vision in a new direction. Work with new artists. Try any number of different creative avenues. Sting is that type of artist. In 2006, he teamed up with Bosnian guitarist/lutenist Edin Karamazov, releasing a fine collection in *Songs From the Labyrinth*. This year, Sting is hitting stages across the world with London's celebrated Royal Philharmonic Orchestra, reimagining his classic tunes for the symphony, employing arrangers Rob Mathes, David Hartley, Nicola Tescari and Vince Mendoza to help with the transformation.

To make sure that the magic happening onstage translates effectively to each sold-out crowd, Sting turned to front-of-house engineer/Clair Global senior director of engineering Howard Page, with whom the artist has worked before, or, as Page says, "I usually do all the engineering and design of all our Clair systems and tours and then leave it to the lads, but when Sting says jump, I jump!" The two worked together during the latter part of last year, mixing various one-off shows, and "Sting insisted I be involved in this current tour."

The Clair Global-provided gear list

includes a Studer Vista 5 SR at FOH, which Page finds to sound as "analog warm and pure" as any digital console he's heard. "The almost unlimited flexibility and power in such a small footprint is a real bonus when we go into small mix areas in concert halls," Page says. "A truly amazing advance in live sound technology! The only effects I use—or, in fact, any outboard equipment—is a TC 6000 that is digitally interfaced to the Studer. The inbuilt compressors, limiters and gates are so perfect there's no justification to create any more in/out AD/DA conversions, which always ruins the ab-



From left: audio techs Charlie Hernandez, Sean Prickett and Stephen Carter; Clair stage engineer Pete Buess; monitor engineer Ian Newton.

solute purity of the final result.”

The Studer console has also met the challenge of the number of inputs required by not only mixing for Sting, but the orchestra. Page says he’s maxing out at about 78 inputs, mainly due to the fact that he has individual clip-on mics for each and every one of the strings. Page employs what he calls the best mic he has ever heard on violins: a DPA 4099V. “For this style of show, where we are going indoors and out, they are truly a life-saver,” he enthuses. “Open overhead mics on the strings would just not work for this extremely dynamic show as all-show long, in every venue, I would be constantly up against a feedback threshold point.

“The key to mixing the orchestra is how you set up the layout of the inputs and the VCA sub-master controls on the console to break down the sections of the orchestra into musically logical parts,” Page continues. “That then enables you to literally follow the arrangements within each song and sit those sections musically exactly right for each texture portion within the arrangements. Dynamics shifts can be changed on songs by creating separate masters for the group musicians, as well as the overall orchestra.”

Dynamics are key in this show, and Page is continually cognizant of the overall level and dynamics for each song by mixing live (i.e., no snapshots). “Sting is performing some of the most contrasting dynamic songs he has ever sung live for this tour,” he explains. “He is playing songs that he has written for albums but would never really work on the live pure-rock shows. With the orchestra, he is free to go into dynamic and emotional areas as never before. I mix the show to try to deliver each and every nuance of each and every song as Sting is creating it. This means we go whisper-quiet for some beautiful ballads and then ‘up there’ when the orchestra plays a bit of rock ‘n’ roll. I try to hit the magic point where the mix and the overall levels throughout the show are exactly what the audience had in their head when they purchased their tickets.”

And that paying audience member is also the Number One priority of monitor engineer Ian Newton. To keep both the crowd and the performers onstage happy, Newton continually strives to keep the stage volume low, which is no easy feat with a combination of in-ears and wedges. “Especially with an orchestra, we’re trying to keep it down as much as we can,” Newton explains. “Some of the musicians are on in-ears—Sting’s band. We’ve got

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"I did it myself... ...Primacoustic made it easy!"

A conversation with jazz/blues guitar legend Scott Henderson

Tribal Tech, Chick Corea, Jean Luc Ponty, Joe Zawinul, Jeff Berlin, Victor Wooten)

Scott, tell us about your studio.

It's a two room overdub studio - a control room and a room to mic guitar cabs, horn players, singers, etc...

What do you do there as opposed to in commercial studios?

I use commercial studios when there's a drummer involved, but I get the best guitar tones at home.

What were some of the problems you noticed with the acoustics?

Actually I never thought there were any problems, until I A/B'd the Primacoustic Broadway panels with what I was using before.

What type of panels did you have?

I had a popular brand of foam and I needed to take it down because after 3 years it started to crumble and fall apart.

Did you do the set up yourself?

I did it all myself. Primacoustic made it easy and fast. Believe me, if I can do it, anyone can. All you need is a drill, screws and a level.

How did you configure the panels?

In the control room, because there's a lot of gear to work around, I just put them where they fit. The mic'ing room was just bare walls so it required planning. I configured them randomly to cover about 30% of the walls.

What improvements did you hear?

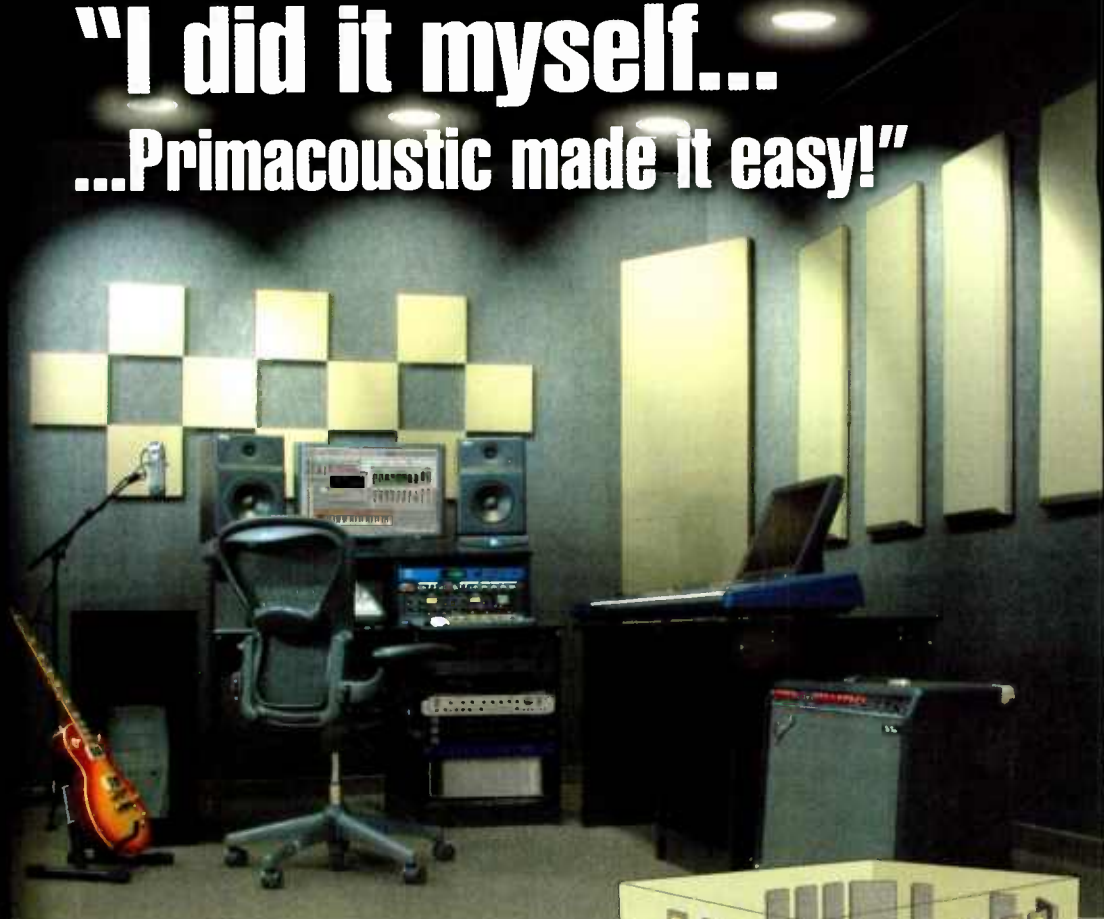
A big difference! Tighter low end with more of it, plus a sweeter top end and a clearer, open sound.

How would you compare it to foam?

The foam gave the guitar a bit of a nasal sound - more emphasis on mid frequencies, and not good ones in my case.

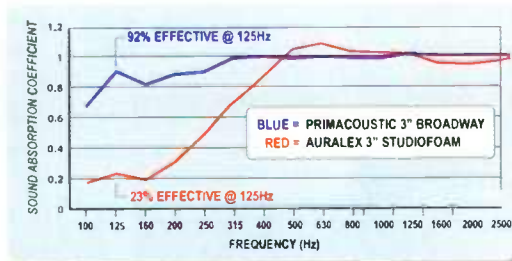
What would you tell someone thinking about acoustic treatment?

Whatever you do, don't use foam, especially attached with glue. The foam turns into dust after a while and is a total mess. Even worse is trying to get the glue residue off your walls. Mine had to be completely sanded and re-painted. Plus foam doesn't sound nearly as good as the Broadway acoustic panels.



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Tests performed by Riverbank Labs on 3" Primacoustic Broadway panels and common acoustic foam. Both absorb high frequencies but as sound shifts to bass, the foam stops working.



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World Radio History



Front-of-house engineer Howard Page (right) and Clair systems engineer Markus Meyer.

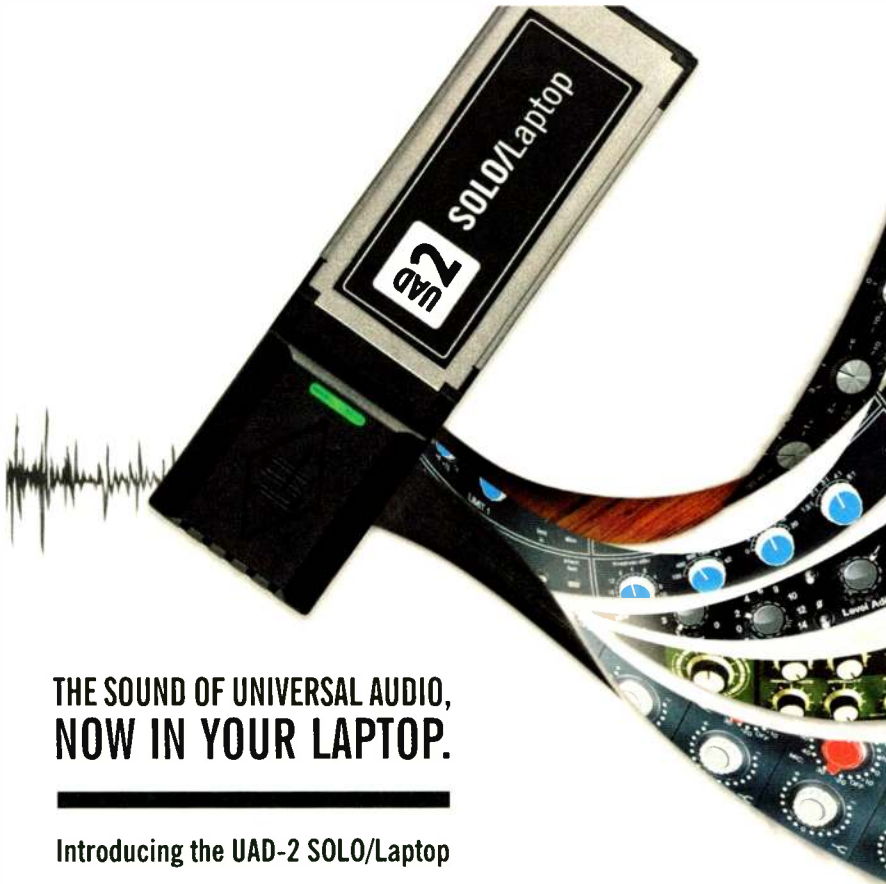
some self-powered [Yamaha] Hot Spots—a self-powered monitor on a stick—dotted throughout the orchestra just to give them a little bit of something if they need anything. And then we've got some wedges out onstage, but they're working at quite a low level. Everybody's being quite sensible about it, really. Nobody's trying to be really loud; everybody's playing at quite a comfortable level. When it starts getting noisy, we just bring the level down. We're at quite a dynamic range—the stage volume depends on where you're standing in the orchestra and what type of song Sting is singing."

Having previously worked with Sting and The Police reunion tour, as well as Sting's showcasing a performer with an orchestra (namely, Barbra Streisand's latest), Newton is no stranger to this type of monitor mixing. From his PM1D (using only the onboard reverb on vocals, acoustic guitar and a couple of the woodwinds), he is giving out select mixes: "Conductor Steven Mercurio has a 'monitor on a stick' at his music stand, which is mainly percussion and Sting's vocal. He also has a wedge underneath his music stand with a mere taste of bass guitar. As he's standing in the middle of woodwinds and brass, he hears those instruments acoustically. Sting just takes a bit of orchestra—mainly strings. Apart from my cues, I don't change anything unless they ask for them. Since we've started the tour, things have changed a bit, evolved a bit, but no drastic changes. Once we're done with soundcheck, I don't change anything apart from my cues."

The tour is carrying a Clair i3 line array system. With its lower Q due to the wider dispersion, it's perfectly geared toward this type of outing. Driving the system are proprietary custom-designed crossovers that match the components within the cabs as they relate to the full array. "This gives us a very real advantage over store-bought systems in that phase alignment, shading and response results are constant and predictable 'out of the box,'" Page explains.

"Sting is one of the most wonderful guys you could ever mix sound for," Page says. "He has been a huge star for so long that he has nothing to prove to anyone and doesn't surround himself with people who limit access to him personally. If I want a discussion about any aspect of the audio of this show, I can go straight to him and we discuss technical matters—all to the betterment of the sound of his show; a real pleasure." III

Sarah Benzuly is Mix's managing editor.



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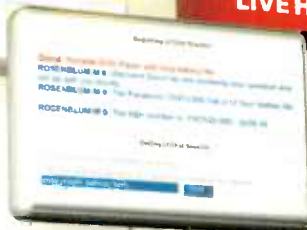
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SOUNDCHECK

Hall of Fame, Mutemath Open Full Sail Live!

It was a busy June at Full Sail University (Winter Park, Fla.; fullsail.edu) with the induction of the second group into the Full Sail Hall of Fame and the official opening of the Gateway Studios Project. With congressmen, state legislators and local dignitaries on-stage, along with the chairs of the university board, Full Sail president Garry Jones led a ribbon-cutting ceremony in front of the new Live venue, then led the crowd inside on a red-carpet to celebrate the induction of the new Hall of Fame class.



Full Sail's Gateway Studios Project

The Gateway Studios Project encompasses a new game production studio, classrooms, the Audio Temple (a state-of-the-art SSL Duality studio) and the new Full Sail Live, a multipurpose venue that can

hold upward of 1,500 students for a performance or convert to classroom and presentation mode.

Full Sail Live is outfitted with the new Meyer Sound MICA Curvilinear Array loudspeaker system, with UPJ-1P frontfill and JM-1P centerfill, to go with the powered UM-1P monitor system. A DiGiCo SD7/SD8 special package sits at FOH, though the facility can also roll in its wealth of Yamaha and Avid boards. Recording, through a dedicated audio suite, is to a Pro Tools HD rig and Tascam X48 multitrack.

A plethora of Shure mics and a Sennheiser wireless system round out the house package.

"We're very excited about Full Sail Live," says Dana Roun, Full Sail director of audio programs. "We will be using it primarily for student gatherings and presentations including concerts. Mutemath really took it to the limit, but there is tons of headroom in the Meyer system. Second, we will be using it for special seminars where we can host up to 300 people all connected on laptops. And third, we will be reaching out to the community and donating the space for charity events. We just finished a meeting with a couple hundred Apple educators, and we did a two-week video production for Storyville, Full Sail founder Jon Phelps' current project. We look forward to figuring out how else we can use it!"

fix it

Maxwell Monitor Engineer Clay Hutson

We don't really have a lot of inputs, even though it looks like a lot of stuff onstage. I think we're around 56, which is pretty normal and Jill Scott has about 70 inputs. The [DiGiCo SD7 console] is really critical when it comes to the amount of outputs that I'm using up on the desk, around 40. I probably have an output for every input right now. I'm at 24 just with the in-ears alone—not including wedges, side-fills, drum fills and reverb sends—and there's still another 70 groups or buses available on the desk. Because I have them, I'm going a bit crazy with them, busing stuff to groups and then compressing them and sending it back to the ears. I find myself using a lot less EQ now because of the [console's] frequency-dependent compression, multiband compressor and sidechain EQ, which is fantastic because the less EQ, the better. The compressors are as good as they've ever sounded and you can't hear them doing their job. The effects engine is great; to have all those studio reverbs available now is fantastic. Now I don't have to rely on outboard gear. I used to have to go AES/EBU into whatever frequency-dependent compressor I could because it's a vital tool now for some of these vocalists. To have it on every channel allows me to not have to worry about it anymore. I'm using eight studio reverbs loaded up for the vocals, as well as horns, acoustic guitar and drums, and the graphic EQs are laid out so well. You select the EQ of the mix and you have a graph right there—fantastic!



World Radio History

tour log



Carrie Underwood performing live



Monitor engineer Cam Beachley

Carrie Underwood

Multiple Grammy Award- and American Idol-winner Carrie Underwood has embarked on a tour of North America in support of her new album, *Play On*; the tour stopped in Las Vegas for the Academy of Country Music Awards ceremony, where she became the first woman to win Entertainer of the Year twice. Clair Global is providing sound reinforcement for the tour. Mix caught up with Underwood's monitor engineer, Cam Beachley.

What console are you working on?

A Yamaha PM1D. With the large number of inputs and outputs I'm using, I was forced to use a digital console. I had to have something that I knew was going to work every time I turned it on. The 1D has been absolutely bulletproof. Digital will never sound as good as analog, but with the upgraded preamps and [an Apogee] Big Ben external word clock, I have had no complaints about how it sounds.

What kind of mixes are you giving Carrie and the band?

I mix Carrie all night, so hers is a dynamic FOH-style mix. For the most part, the band's mixes are static. Everyone is using in-ear monitors and there are thumpers mounted under the band risers.

Are you dealing with a loud stage volume?

Stage volume isn't an issue for us as all of the guitar amps are in iso cabinets under the deck.

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

Playing with my kids or riding my motorcycle.

Gigging For Charity

Raising awareness for the charity The Smile Train, five-piece indie-rockers Sound Driver are playing some unusual places: Sydney Harbor Bridge, Mount Kilimanjaro (breaking World Records), the Great Wall of China, Niagara Falls and Dubai's Burj al Arab Hotel. To accommodate these "venues" for the Chasing Rainbows Tour, tour manager David Spillane spec'd gear that's compact, lightweight and reliable, including Shure (PSM600 receivers and transmitters, and a UHF-R Series wireless system for lead singer Chad Marriott) and QSC (K8 active loudspeakers).

Record producer Danton Supple has been on hand to capture the band live at the Mount Kilimanjaro summit, and they've also been filmed by BAFTA Award-winning cameraman Mark McCauley, who has been editing his footage on location and providing uploads to the tour's dedicated Website (chasingrainbowstour.com).

The Chasing Rainbows Tour was launched in October 2009 on the steps of the Palais des Festivals in Cannes. It then took Sound Driver to Sydney in January, where a video shoot took place on the Sydney Harbor Bridge, the steps of the Opera House and Bondi Beach. After



Above: Sound Driver. Below: Chad Marriott on top of Kilimanjaro.



the climb to the summit of Mount Kilimanjaro on February 22, 2010, the tour traveled to the Middle East, Asia and North America.

During the past 10 years, The Smile Train has provided more than 500,000 free surgeries for children and has helped in 77 of the world's poorest countries.

load in



Bruce Hornsby's recording/mixing engineer, Wayne Pooley, selected Earthworks' PM40 Piano-Mix system for all live performances.

Clearwing Productions celebrates 25 years in the biz by adding a full L-Acoustics K1 line source array loudspeaker system to its inventory...Go to audioversityexpo.com to find out details and dates for Yamaha and Nexo's series of regional expos that will focus on digital mixer training seminars, panels, speaker listening demos, rigging demos and more...On Stage Audio deployed the first real-world test of the IEEE 802.1 AVB Bridging protocol. The team configured and controlled a Crown Audio, dbx and BSS Audio A/V system using Harman HiQNet for the Compuware national sales meeting in Detroit and ran audio using Ethernet AVB standards... Kennesaw State University recently installed an SSL AWS 900+ SE console to support recording of concerts held at the 624-seat Dr. Bobbie Bailey & Family Performance Center, home to the KSU School of Music...JBL VerTec line arrays are heading up the P.A. system on Conan O'Brien's current "Legally Prohibited From Being Funny on Television Tour," with Audio Analysts providing SR for the production.

road-worthy gear

Mac Compatibility for Yamaha Consoles

New versions of Yamaha's M7CLv3 Editor and LS9 Editor software allow its M7CLv3 and LS9 consoles to talk directly to Macs. The M7CLv3 Editor and LS9 Editor for Mac run under the Studio Manager V2 host, providing the same features and operating environment as the Windows version. For the M7CL, advanced features such as Sends on Fader operation via the M7CLv3 Editor will now be available via the Mac platform. The new software will be available for download this month. www.yamahaca.com



Switchcraft SC900 Direct Box

Switchcraft takes the direct box to the next level, thanks to a patent-pending feature that automatically activates the unit's ground-lift switch when 48-volt phantom power is applied, effectively creating a remote-controllable ground lift. There's also a manual switch for selecting (or defeating) ground lift. The unit will be available in two forms: the deluxe \$239 SC900 (with a Jensen transformer) and as the standard \$169 SC900CT (non-Jensen) model. www.switchcraft.com



Line 6 XD-V70 Digital Wireless

Operating in the 2.4GHz band, the new XD-V70 (cardioid handheld) and XD-V30L (beltpack) digital wireless feature DCL™ (Digital Channel Lock) and PDP™ (Proprietary Data Placement) technologies for reliable, encoded operation in hostile RF environments. Both units offer onboard digital mic modeling, 12-channel operation, 10-20k Hz RF response, max 300-foot range, 120dB dynamic range and 24-bit digital conversion. Retail: \$499. www.line6.com



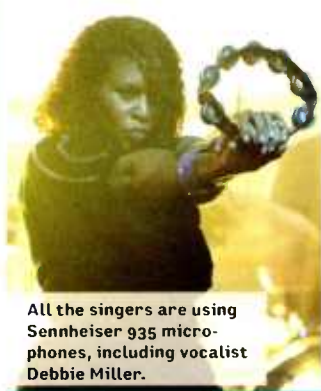
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Photos and text by Steve Jennings



Massive Attack

Electronic/trip-hoppers Massive Attacks—vocalists Robert “3D” Del Naja and Grant “Daddy G” Marshall—are out on a worldwide tour to support their latest, *Heligoland*, bringing along a stellar lineup of musicians and backing vocalists. *Mix* caught up with the ensemble during a two-night stand at the Warfield Theater (San Francisco).



All the singers are using Sennheiser 935 microphones, including vocalist Debbie Miller.



Lyricist Horace Andy

Vocalist Martina Topley-Bird



Front-of-house engineer Dave Bracey is mixing on a DiGiCo SD7, saying, “If you take into account its sound quality and engineer-friendly functionality, overall it is the best digital console. I will probably only stop using the SD7 when DiGiCo supersedes it, as no other manufacturer has come close yet. Yes, I am a fan.” Bracey uses seven FX engines onboard and the following outboard gear: Waves Maxx BCL, Yamaha SPX990, TC Electronic FireWorx and M6000, dbx 120x and SansAmp PSA-1.



According to audio system engineer Ali Viles, Massive Attack is touring with an audio control package from UK-based Wigwam Acoustics. For the U.S. dates, the package is augmented with a d&b sub and front-fill package from Firehouse Productions (N.Y.). “In North America, we played a diverse selection of venues, most of which had in-house P.A.s,” adds Viles. “We toured a package of 12 d&b B2 subs and some d&b Q7 front-fills. This enabled us to keep a consistency with the low end of the show, something very important to the ‘Massive Attack’ sound. Touring with our own front-fill package allowed us to be in complete control of the audio along the front edge of the stage, letting us give the audience a true stereo image of the soundscape of the show, even at this close proximity.” Bracey tunes the room/P.A. with SIM time and phase alignment and then the rest by ear with a little help from Spectrafoo.



According to drum tech Nick Sizer (above) Damon Reece's Ludwig Vistalite kit (stage-left) is miked with Shure Beta 52 (kick); Sennheiser 901 (kick), e 904 (toms) and e 905 (snare); AKG C 414 (overheads); and Neumann KM140s (hi-hats, percussion, ride).



John Baggott's main controller is a Korg Triton with a GEM S3 as a second controller. The audio from the Triton and S3 are fed directly to a Yamaha o1V. "Also," says keyboard tech Hew Williams, "a Moog Voyager and a Hammond XB2 on top of a Rhodes 73. Audio from these three are fed via various guitar effect pedals into a Twin in an isolation case after passing through the Yamaha." A Roland UM-880 takes care of most of the MIDI routing. In the rear of the rack is a MOTU 828 mkII and a MacBook running Main Stage used for most of the string sounds. A Roland Space Echo RE201 is on an aux send from the o1V and can be used to effect any of the sounds during the show.



Vocalist/keyboardist Robert "3D" Del Naja



At stage-right is Julien Brown, whose electronic kit is miked with Neumann KM140s for overheads, hi-hat and ride.



Guitarist Angelo Bruschini uses a Matchless Independent combo amplifier miked with a Shure SM57 and an AKG C 414 B.



According to guitar/bass tech Sharon "Bamo" Bampton, bassist Winston Blissett uses a 4x10 Mesa Boogie bass cab and a Mesa Boogie M-Pulse 600 amplifier.



Vocalist Grant "Daddy G" Marshall



Monitor engineer Rod Matheson is also mixing on a DiGiCo board—a D5 running Version 4 software, using all onboard effects.

All bandmembers are on in-ears, using Aviom for the three stationary backline musicians, with custom cabling and beltpacks (drummers Damon Reece and Julien Brown, and keyboardist John Baggott) and 12 systems of Sennheiser G2 IEMs for the singers, musicians and crew. "I'm using a Sennheiser WSM [Wireless System Manager] networking system for fast frequency sorting," Matheson explains. "All principal ear molds are Ultimate UE115."



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The LILPEQR is Purple Audio's take on the classic program EQ. It offers high and low frequency shelving bands, each with three carefully selected corner frequencies to choose from, and a switchable fader knob for overall level control.



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ATC SCM25A

The three-way SCM25A (\$8,500) monitors from ATC (dist. by Las Vegas Pro Audio, lasvegasprouaudio.com) feature drivers with large-diameter, under-hung voice coils for excellent dynamic range and linearity. The midrange is ATC's soft dome, and the bass driver is hand-built in-house using a carbon-paper cone with high-excursion capability. Onboard amplification features the company's Class-A/B MOSFET output stage delivering 150 watts to the woofer, 60W to the mid and 25W to the HF driver. All three stages are fed by fourth-order, critically damped crossover filters with phase compensation. The unit's ported enclosure measures 10.4x16.9x16 inches.



Looking Good

Studer Vista 9

The Vista 9 (pricing dependent on configuration) from Studer (studer.ch) kicks the company's Vistronics™ interface up a notch with a variety of innovations like widescreen TFT metering and FaderGlow, which provides the operator with an instant overview of the console status by illuminating each fader in one of eight assignable colors. Channel meters can show mono to 7.1 feeds in the upper portion, while the lower portion shows bus assignment or an image of a surround composite. A History mode records overloads in the audio path of each channel and highlights them in red on the channel waveform. The Control Bay meter section can be configured to show any choice of output buses and input channels and displays up to 40 meters at a time.

Simple Sonic Assistance

Acoustic Geometry Curve System

These simple, easily mounted acoustic panels from Acoustic Geometry (acousticgeometry.com) are available as an absorber, diffusor or corner trap. The panels are made of "green" and absorbent recycled cotton using no Fiberglas or foam. The Diffusor comes in three sizes to reduce narrow reflections and frequency-dependent modes, and breaks up parallel-surface flutter echoes. The Absorber evenly absorbs frequencies from 200-20k Hz, while the Corner Trap reduces low-frequency corner room nodes from 300 to 20k Hz. The panels start at \$249 and include mounting cleats and hardware for installation.



Complete and Impressive Upgrade

Steinberg Nuendo 5 DAW

Nuendo 5 (\$2,399, www.nuendo.com) has a new look and a bevy of fresh features, including an ADR toolset engineered for post, with advanced take and marker handling, EDL import and a new video engine. Clip packages have been designed for sound editors to organize and handle audio as clusters of files across multiple tracks that can be archived, previewed and retrieved almost instantly using the upgraded Nuendo 5 MediaBay. Other extras include new plug-ins, and a range of mixing, routing and automation enhancements.



Tiny, Handy, Reasonable

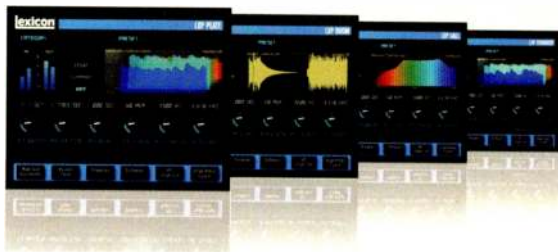
Zoom H1 Recorder

Zoom's (zoomfx.com) new H1 (\$99) handheld recorder features the same microphones as the company's H2, weighs just more than two ounces and has a newly designed user interface. The H1 records up to 24-bit/96kHz, and offers a track marker, auto-record, low-cut filter, level and volume controls—all with onboard buttons and no menus. The H1 uses microSDHC memory cards (up to 32 GB) for recording, providing more than 50 hours of recording time. It's powered by a single AA battery, offering up to 10 hours of continuous operation. An optional accessory kit (\$24.99) includes a windscreen, AC adapter, USB cable, adjustable tripod stand, soft carrying pouch and mic clip adapter.

Ambient Four-Pack

Lexicon LXP Native Reverb Bundle

Scaled down from the company's pricier PCM collection, the LXP Native Reverb Bundle (VST, AU, RTAS; \$749) offers four of Lexicon's (lexiconpro.com) most popular reverbs—Chamber, Hall, Plate and Room—and more than 220 presets. The intuitive interface offers easy access to top-level parameters while providing the ability to dig deeper into the algorithm to edit a fuller array of settings. The real-time display offers three different views to provide additional information about the reverb tail, frequency content and impulse response. Presets can be saved in a DAW-independent format for easy transportability to other platforms.



Surround at Your Fingertips

Whirlwind 5.1 Precision Level Control

The 5.1 Precision Level Control (\$1,199) from Whirlwind Audio (whirlwindusa.com) offers volume control of 6-channel surround systems with 0.1dBV tracking precision. Outputs can feed two sets of 5.1 speakers, or a surround system and a stereo pair. A single-rackspace main unit has all I/O connections; the 5.1PLC tabletop remote has individual speaker on/off buttons, dim and mute controls, speaker A/B switch, level control with LED and a 5.1 to stereo downmix control.



Double-Duty Widget

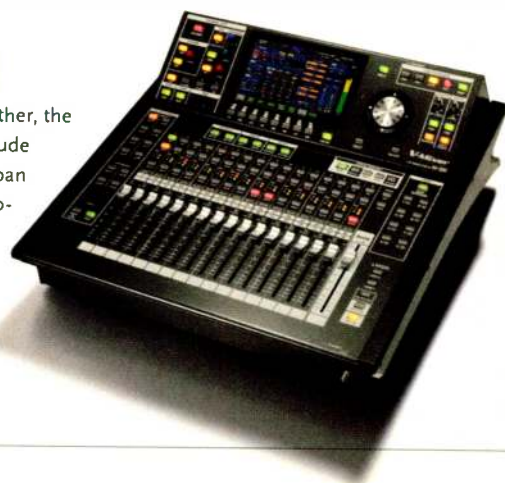
Primacoustic CrashGuard

Offering protection from errant drum sticks and acoustic isolation for drum mics, the Primacoustic (primacoustic.com) CrashGuard (\$40) is made of high-impact ABS plastic with an underside layer of high-density, open-cell acoustic foam. It easily mounts on a microphone stand, is lightweight, and easy to position, and minimizes tom and cymbal bleed to the mic.

Mighty Mini Mixer

Roland Systems Group M-300 Digital Console

The M-300 V-Mixer (\$7BA) is a 32-channel console that possesses many features of its big brother, the Roland (rolandsystemsgroup.com) M-400 V-Mixer but in a very compact format. Features include rapid recall of setups, 100mm motorized faders, an 800x480 color screen, and knobs for EQ, pan and gain. The M-300 has 32 mixing channels and includes digital patchbays, built-in effects processors, eight auxes, four matrices, four DCAs, four mute groups, built-in stereo recording/playback and support for L/C/R configurations. The system is built on REAC (Roland Ethernet Audio Communication) and sets up in minutes by plugging in a single Cat-5e cable from a choice of digital snake stage units. The M-300 V-Mixer integrates with PCs via its Remote Control software for additional control or sending/receiving setup data, allowing users to prepare channel setups and configurations before arriving at the venue. ■



Fink Analog Audio CS2-FA Tube Dual Channel Strip

Handmade Preamp/EQ/Limiter With Vintage Pedigree

Veteran UREI and Universal Audio engineer Dennis Fink uses single-ended Class-A dual-triode tube gain blocks in the CS2-FA, a two-rack-space unit with two complete recording channel strips. Each strip has a Bill Putnam-inspired tube console mic pre; a passive EQ with the same frequency sets and operation as the Pultec EQP-1A; and an FET limiter that is similar to the UA 1176LN except that the CS2-FA has tube input/output stages. Apart from the FET attenuator, the CS2-FA offers an all-tube audio path with five tubes per channel.

Big Surprises in the Box

The 15.25-inch-deep chassis uses high-quality components and first-class internal construction that belie the unit's \$3,999 price. There are two circuit boards per channel: one for the mic preamp/EQ amp and the other for the FET limiter and output amp. The power supply supplies the 350VDC B+, the regulated DC for phantom power and all other circuits, including 10 VDC for the tube filaments. All four main circuit boards interconnect to each other and to the smaller front panel circuit board modules via handmade wiring looms, shielded Mogami wire and Molex connectors.

The CS2-FA incorporates CineMag CMM1-7-CPC mic input transformers and the larger CM-9589L output transformers for each channel. It uses Wima audio coupling capacitors throughout, along with Bourmes control pots, Electroschick rotary switches and Neutrik XLR I/O connectors. All 10 tubes are sourced from JJ Electronics.

Mic Preamp

The mic preamp uses two ECC83s and an ECC81—one more tube than the original Putnam



The Fink Audio CS2-FA features a Bill Putnam-inspired tube console mic preamp, a passive EQ and a FET limiter.

design—used to drive the passive EQ. Front panel controls include 48V phantom on/off; -10dB to +10dB gain fine adjust; output level that goes to “11”; and input select with 0, -10, -20, -30 dB and line positions, plus DI for the 1/4-inch plastic direct input jack. The DI input, when selected, connects the jack directly to the grid of the mic pre's first ECC83 triode section—just like a Fender guitar amp. Its input impedance is 1 meg-ohm. The CS2-FA's total amount of gain sans limiter inserted is stated at 60 dB for the rear panel XLR mic input path and 46 dB for the front panel DI.

Passive EQ

The EQ section is pre-limiter only and includes midrange boost (no cut) up to +10 dB; a continuously 1 to 10 variable midrange Q control; a midrange frequency selector with 3, 4, 5, 8, 10, 12 and 16kHz frequencies; 0 to -10dB HF cut; HF choices of 5/10/20 kHz; LF selection with 20/60/120Hz positions; 0 to +10dB LF boost; and LF cut with a 0 to -10dB range. The EQ uses a second-order LC-style midrange section based around a CineMag multitap choke. Switching between different winding taps changes the midrange center frequency. Both the HF and LF sections are first-order 6dB/octave shelving RC-type filters with frequencies copied from the Pultec EQP-1A. You can boost and cut low frequencies at the same time and, as with the Pultec, produce a resonant peak just before the filter's cut-off frequency.

FET Limiter

The limiter section has an I/O switch and con-

trols for makeup gain, input and output levels. Once you develop an operating level for a recording with the mic pre and EQ section, switching in the limiter brings up to 20dB more level. Like the 1176LN, the input control pushes more level into the detector circuit for more limiting/compression while the output control sets the final level.

The variable Attack control has a 0.2 to 20ms range; release times go from 100 ms to 2.2 seconds; and the Ratio control switches between ratios of 1, 4, 8, 12 and 20:1. An “A” ratio position simulates the effect of pushing all of the ratio buttons together on an 1176LN. The “S” ratio position switches to a soft-knee compression curve that has less compression in the beginning than a fixed 2:1 ratio and maintains this lower ratio through the first 20 dB of incoming signal level. The limiter section finishes with a small, lighted Sifam VU meter and a three-way switch to read gain reduction, output level and Pre (the level coming from the mic pre/EQ sections into the limiter).

In the Studio

To familiarize myself with the CS2-FA, I fed Pro Tools' signal generator at unity gain through the unit. Both channels had identical knob settings—a good sign of excellent design and close component tolerances. With nominal song mix levels coming out of Pro Tools, the VU meters read normally, but I think the VU meters could use a scaling feature when measuring the hotter audio output levels encountered after limiting. With or without music playing through the unit, I could hear pops when switching the limiter in

PRODUCT SUMMARY

COMPANY: Fink Analog Audio
PRODUCT: CS2-FA Tube Dual Channel Strip
WEBSITE: www.finkanalogaudio.com
PRICE: \$3,999

PROS: Two complete dream tube channel strips in two rackspace.

CONS: Compact front panel necessitates small controls and VU meters.

and out. As the limiter uses a true bypass system, there is no way around the associated level change that occurs when the limiter is switched in and out. Fink Audio has incorporated a hardware change to fix the pops that happen with no signal present.

With a compression ratio of 1:1, I set the limiter's input and output controls to around 2 o'clock and got unity gain; when switching the limiter in/out, the levels matched. On my Pro Tools rig's stereo bus output, with the unit's ratio set to 4:1, the Attack knob straight up and fastest release setting, I found the limiter to be smoother and less aggressive than my 1176LNs (Rev-D), but definitely in that same family of sound. I was getting about 2 to 6 dB of gain reduction as read on the meter and was able to increase the output level upward of 5 dB. I tried the Link switch and found it to work exactly like UA's 1176LN stereo adapter unit, where the control signals from each limiter channel are summed and then applied to both.

I enjoyed building a resonant peak with the EQ by boosting low frequencies at 60 Hz and cutting at the same time. This causes the kick drum to move forward in the mix and the bottom end got tighter and less round. The equalizer is refined and musical-sounding; the 10dB boost is spread over the knob's entire range. Ditto for boosting high-midrange frequencies at 8 kHz and then using the HF cut at 10 kHz. This is an excellent way to precisely set the overall brilliance of a mix.

I used a pair of Mojave MA-101fet condenser mics with omni capsules and no pads. I spaced the mics about four feet apart, four feet from the floor and in front of my drummer's kit at about three feet out. I got a warm, natural tone from the kit and from the small room it was in. With the mic preamp set at 0 dB, I got plenty of level with the Gain knob at about 2 o'clock and the Level at 11 o'clock. By switching in the equalizer, I was able to boost more low frequencies at 120 Hz for increased low end on the drums—particularly the kick. With the limiter switched in, the ratio on the S position worked well to smooth out and further fatten the drum tones: snare, kick and toms. The cymbals and hi-hat did come up in level, but rolling off 12 kHz with the Hi-Cut control seemed to prevent them from taking over the whole sound.

Next, I recorded a male vocal using a Neumann M149 mic with no pad and no roll-off, and played with the ability to saturate the unit's

mic pre. At 0dB mic gain, the CS2-FA's tube mic pre and input transformer were constantly saturated from the hot level coming from the M149. Saturation can increase apparent loudness, in which the signal is louder without much VU meter (electrical) level increase. For the most part, I liked it on the track except when the singer pushed his voice and the additional roughness became too much. Reducing the mic gain attenuator to -10 dB produced a more "conservative" and high-fidelity sound. The CS2-FA's EQ was very flattering to the voice. Pushing low frequencies sounds great, although that is unnecessary for my singer's barrel-chested sound. If you like a bright vocal sound, boosting the midrange section set at 10, 12 or 16 kHz is glorious—there is nothing like a tube-based LC equalizer!

Next I tried recording a 1971 Fender P-Bass plugged into the front panel DI jack. Here the sound is exactly like UA's 6176—thick and creamy, big tube coloration with loads of sustain. But unlike the 6176, the CS2-FA has a complete EQ for carving the bass sound to perfectly fit the player, the part, the track and the song. Again, you can crank gain and reduce level going to the EQ/limiter and go from clean to dirty, and easily maintain the same amount of compression.

My 80-year-old Schiller baby grand piano sounded amazing when recorded through the CS2-FA. The Mojave mics were used but with the -15dB pads and cardioid capsules. I placed them right over the hammers, aimed outward, left and right, toward the extreme ends. By themselves, the mic pre's produced a full and balanced sound. Boosting 10 kHz using the broadest Q in the midrange EQ opens up the sound with more air/brilliance, and adding the compressor set to a 4:1 ratio with 2 to 4 dB of compression compacted the dynamics nicely.

Two-Rackspace Powerhouse

I found the CS2-FA wonderfully handled any recording task and stereo mix bus processing. While the front panel looks technically daunting at first glance, operationally it works in a musical manner. As with any vintage tube unit, I quickly learned each control and then cranked them around freely, achieving a lustrous, fat sound on all sources. III

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



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JZ Microphones V47, V67 Vintage Series High-End Models Excel Across a Range of Applications

Designed by Juris Zarins and made in Latvia, JZ Microphones created its V67 and V47 models with a vintage pedigree in mind. The designer sought to offer a “new and renewed” view of the legendary sound of Neumann’s U47 and U67 tube microphones, using Class-A discrete electronics. On the outside, both mics look exactly alike and are identified by the gold label on the rear. Inside, the two differ in proprietary design but both are fixed cardioid and phantom powered, and have 1-inch, double-diaphragm capsules made with JZ’s patented Golden Drops sputtering technology.

The unique “flask” design and internal shock-mounting system make it easy to get the mics into tight spots, as does the ball-and-socket swivel that provides a limited-range method of fine-tuning your mic placement. Both are nearly flat from 30 to 20k Hz, and handle 134dB max SPLs with 0.5-percent THD @ 1,000-ohm load. Neither has a bass roll-off nor a pad.

In the Studio

I had both mics on hand across a number of duplicate same-day sessions and could A/B them while swapping them around. First, I used the V47 about six inches away from the outside head of a kick drum recorded through a Groove Tubes SuPre preamp with the input impedance set to 1,200. It sounded great paired with a Shure Beta 52 inside the drum with a heavy scoop taken out at 400 Hz, offering lots of kick-in-your-chest low frequencies with great transient presence. The mic handled the level without wincing, yielding plenty of clean output that necessitated a pad at the preamp. The V67 was equally good in this application; it offered nearly identical results, but had decidedly less low end.

PRODUCT SUMMARY

COMPANY: JZ Microphones
PRODUCT: V67 and V47 Vintage Series
WEBSITE: www.jzmic.com
PRICE: \$1,999 each

PROS: Great sounding. Easy to place and adjust. Five-year warranty.

CONS: Pricey for some. V47 not as versatile as the V67.

Placed 2.5 feet above the cymbals and centered on a drum kit, the V67 sounded very good. I also used the V47 in this application but preferred the V67 as the latter brought out the transient hits of the toms with plenty of bottom end from the kick and lower drums.

I then tried the mics on acoustic bass, set about a foot above the bridge and facing upward. The V67 and V47 both excelled in this application, with the V47 offering more bottom end and the V67 yielding better string detail.

When I listened to both mics routed through identical signal chains while recording a male vocal, the V67 was a clear winner. The V47 was good, but the V67’s rich midrange made the track. Both offered a nice rendition of “t”s, “p”s and “s”s without sibilance and exhibited a smooth top end.

The V67 on a Fender guitar amp was rich in tone, providing some needed midrange with an SM57. It was smooth at the top end, lifting the track to just the right place in the mix. While sounding good, the V47 on the same amp didn’t equal the performance of its sibling in this application.

Both mics paired well together on acoustic guitar. I put the V67 on the bottom end near the bridge and the V47 on top at the 12th fret pointing into the center of the guitar. The V47 offered good high-end string detail—without clutter—while the V67’s midrange reproduction gave the instrument a rich tone.

The V67 was a winner when recording a tenor saxophone, with the mic placed about two feet above the bell and pointing in. It nicely represented the deep resonance of the lower range of the instrument and was smooth and never strident in the higher registers. With its sweet midrange, it



The JZ V47 and V67 are made in Latvia and feature a 1-inch capsule and integrated shock-mount.

beat out the V47 in this test.

Journeymen Transducers

After using both mics across a range of sessions and instruments, I am impressed with the JZ V47 and V67. I’m not one for shootouts, but having both mics on hand made it hard to resist. If I had to choose an overall favorite, it would have to be the V67. Its rich midrange repeatedly blew me away with its rendition of the instruments I tried it on. It excelled on guitar amps, over a drum kit, on tenor saxophone and with male vocals. It’s been awhile since I’ve heard a mic that worked so well across a wide range of applications.

On the other hand, the V47 was no slouch, performing better on kick drum and offering more bottom end when used to record a standup bass. The V47 is a good all-around mic, but the V67 repeatedly took it up a notch.

Retailing at \$1,999 each, these mics are not inexpensive, but if you’re looking for that magic mic that has a shot at doing it all very well, the V67 is just the ticket, while the V47 offers a bit more bottom end and the same smooth high-frequency detail. ■■

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JoeCo BlackBox Recorder

Feature-Packed, 24-Channel Live-Capture Solution

JoeCo is a new startup founded by Joe Bull, who founded SADiE, the UK-based company that offers high-end DAW solutions for music, post, broadcast and mastering. When SADiE was purchased by Prism Sound last year, Bull moved on to produce the BlackBox recorder, the first new product released under the JoeCo banner. The single-rackspace, 4.5-pound unit comes in four versions: the BBR1 with unbalanced I/O; BBR-B with balanced I/O (reviewed here); BBR-A with ADAT I/O; and the BBR-D with digital I/O. The BlackBox records to any external FAT-32 formatted-USB 2 drive operating at least at 7,200 rpm, making it easy and affordable to purchase storage.

The unit is designed to work across a variety of applications. For instance, you can use the BlackBox as a zero-latency “thru” recorder where input is fed instantly to the output across the insert of a console. This way, even if power to the BlackBox fails, you still have output. You can also feed the D/A converters to the outputs so that you can use an existing recording for soundcheck. The box can be controlled via MIDI (MMC) or 9-pin, and can slave to existing SMPTE or clock itself internally. Whenever you push Record, tracks are recorded in BWF and are stamped with the date and time in an auto-named folder on the drive. You can rename items after the session or by using a keyboard plugged into the unit’s PS2 port.

The maximum sample rate is 24-bit/96kHz, and all but the BBR-1A record up to 24 tracks at that rate. The BlackBox with ADAT I/O drops back to 12 channels at 96 kHz because of the limitations of the Lightpipe interface in SMUX



The BlackBox features record/playback of 24 channels, 9-pin and MMC control, and SMPTE sync.

2 mode. If you need more than 24 channels, you can chain multiple units and run them from a single interface.

Deceptively Simple

Right off the bat, the BlackBox requires some explanation: It isn't a punch-in/punch-out studio recorder; instead, it is a simple capture box for recording a live performance. And although the BlackBox looks simple, behind the curtain is a range of features that makes it a real contender for those wanting minimum haul and maximum results.

The front of the box is rich with visual feedback. It offers 3-segment confidence meters with a selectable sticky-peak feature and separate LEDs for indicating record arming, disk activity and playback lockout. An easily readable, color LCD offers a large timecode display, menu options, date/time, sample rate and more. The unit also has large Record, Stop and Play buttons; a scroll wheel for navigation; and Back, Mark, Loop and Menu/OK buttons.

All buttons have no moving parts and are designed to last. However, this is a bit disconcerting because the buttons are capacitance-sensitive and trigger easily, even within close proximity. This takes a bit of getting used to; more than once, I accidentally triggered Record or another menu feature until I got the

hang of it. Speaking of menus, they are well laid out, intuitive and easy to navigate once you're familiar with the buttons.

The back of the box is loaded with I/O and control options. The BBR-A offers 24 channels of balanced I/O on six D-Sub connectors (Tascam format), external clock I/O (RCA), 9-pin control port, PS2 keyboard port, MIDI input, DC power in (wall wart), headphone out, USB 2 drive port and a double-duty LTC/footswitch input for remote record/mark or external time code input.

Smart Operator

The BlackBox has a number of smart fail-safe features designed to shield you from catastrophic events such as accidental playback during performance or hitting the Stop button by chance. The unit defaults to playback lockout, and to exit Record you must hold the Stop button for two seconds. It also makes it hard to screw up a recording. For instance, I intentionally pulled the power to the BlackBox during a recording. Upon reboot, I found that the files existed on the drive up until the time I pulled the plug. Also, there is no menu feature allowing you to delete files. At first I found this inconvenient, but as I got into using the unit, I liked the fact that neither I, nor others, could easily erase files accidentally in the field. Instead, I had to plug the drive into my laptop and audition, erase or export them

PRODUCT SUMMARY

COMPANY: JoeCo

PRODUCT: BlackBox

WEBSITE: www.joeco.co.uk

PRICE: \$2,795 (balanced version)

PROS: Low profile. Easy to haul. Simple DAW file transfer. Uses affordable USB drive. Offers lots of visual feedback for such a small unit.

CONS: Capacitance-sensitive user buttons are easily triggered accidentally and require time to get used to.

that way. Speaking of exporting, with its cross-platform FAT-32 format, it's a simple matter to drag and drop the files into any PC/Mac DAW when production moves to editing and mixing. For more tech info, be sure to view the BlackBox bench tests that incorporate an APx500 test and measurement system in the "Mixed Media" section at mixonline.com.

Great in the Field

My first gig was a live recording of a concert in a large church that featured a grand piano and saxophone (read more about it on *Mix's* "Tech Ticker" blog). I needed only eight inputs so I decided to run at the maximum sample rate of 24-bit/96kHz. Before the gig, I armed the tracks I needed and set the sample rate and other needed parameters, and then unplugged the unit for the trip to the venue. When I got there and powered up, all of my settings came up instantly and I was ready to go.

The concert was slated to run 90 minutes, but because it was in an improvisational format, I had no real idea how long it might run. This was no problem as a quick glance at the Remaining Disk readout on the LCD screen assured me that I had more than enough recording time. Once I hit Record, the button went red. SMPTE started running and a ring of lights ran clockwise around the scroll wheel. This offered me plenty of confidence in the system and was easily viewable from my seat in the venue. As an aside, I had hooked up the Millennia HV-3R preamps with a wireless router so I could view and manipulate my levels on larger meters, group tracks and even apply phantom power from my seat in the front row. The recording went smoothly and the tracks sounded great. In addition to the BlackBox, I also had an on-site backup recorder as there's no facility onboard for redundant recording. However, the BlackBox was recently tested with Glyph's GT 062E RAID-configurable two-bay drive, making it easy to take a simple and trustworthy recording solution on the road.

The next application was in a live sound venue with a band where 16 channels were recorded during two live performances. Once again, the tracks sounded great and the unit operated without a hiccup.

Ready and Able

The BlackBox is a unique tool for capturing great-sounding live recordings and was easy to operate once I got through its quirks. Its easily triggered buttons were troublesome at first,

but once I figured them out, I found it easy to navigate and choose menu options. I'm not crazy about the wall wart, but if the power supply should go, it would be an easy matter to switch to a spare without popping the hood. I do think that a Locking function on the DC power input would provide confidence that the plug won't be accidentally pulled; in fact, JoeCo notified us during fact-check that production units now feature a small lug to tie down the power inlet.

I really liked the visual confirmations that the

unit was recording. The front panel displays redundant assurances that you're in Record mode. After the gig, it was a snap to take the files off the drive for backup and export them to my DAW.

If you're looking for a first- or second-line recorder for live sound, I strongly recommend the BlackBox. It's affordable, reliable, sounds great and makes it easy to have confidence in the field. III

Kevin Becka is the technical editor of Mix.

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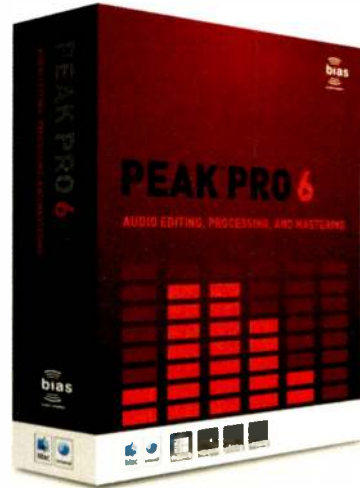
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●● In Memoriam

By George Petersen

Bill Porter, 1931-2010

Farewell to an industry pioneer, innovator, engineer and educator

In the music biz, adjectives like “legend” and “master” are used so much that they become tired and cliché, but in the case of Bill Porter, they certainly apply. Not only was he a brilliant engineer with the innate ability to engineer hit after hit using simple mono, stereo and primitive 3-track recorders (an almost lost art in these days of unlimited virtual tracking), but Porter was also a warm and wonderful human being who spent years of his life giving back to the community as an educator.

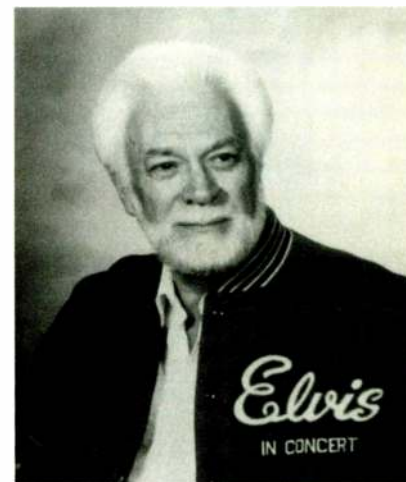
Porter grew up around music in Nashville—falling in love with the art—and was self-taught in electronics. After serving in the Army Reserves, he hoped to be a cameraman at Nashville’s new CBS affiliate, WLAC, but was assigned to handle audio because no one else at the TV station wanted the job. In 1954, Chet Atkins recognized something special in Porter and hired him as a staff engineer at RCA Nashville. After two short months, he cut his first charting song—Don Gibson’s “Lonesome Old House.” The hits kept coming. In late 1959, Porter had his first session with Roy Orbison, doing “Paper Boy” and “Uptown,” followed by chart-toppers like “Only the Lonely” and (years later) “Oh, Pretty Woman,” along with Tommy Roe’s “Sheila,” many hits for the Everly Brothers (among these were “Cathy’s Clown”) and Al Hirt’s “Java.” Most famously, a long association with Elvis Presley on RCA resulted in classics such as “Stuck on You,” “It’s Now or Never,” “Surrender,” “Are You Lonesome Tonight?” and “Good Luck Charm.” In all, Porter engineered some 7,000 sessions that yielded nearly 600 charting records, including 11 Number One songs and 49 Top 10 hits.

Porter’s work as chief engineer at RCA Records’ famed Studio B led him to be widely acknowledged as one of the main archi-

texts of the “Nashville Sound” in the 1960s. However, his spirit of innovation didn’t stop there. In 1966, he moved to Las Vegas to manage Bill Putnam’s United Recording of Nevada, a studio Porter later acquired. During this time, he worked with many artists, including Barbra Streisand, Diana Ross and Sammy Davis Jr. In 1969, Presley’s producer, Felton Jarvis, came to Porter with an 8-track master of “Suspicious Minds,” hoping to add some horn parts. As all the tracks were full, Porter suggested having the horns perform live in the studio while he mixed them in with the tape tracks. Sometimes, clever solutions are borne out of necessity.

From this came a request that Porter help with Presley’s live sound, beginning a new life path for Porter that continued until the star’s death in 1977. In his post-Presley career, Porter focused on education, continuing the work he started in 1975, when he established the first four-year Audio Recording degree program in the U.S. at the University of Miami. Even today, Porter’s recording technique program is a model used by other schools. He continued working with audio engineering students, lecturing at AES events and colleges worldwide, and spent years teaching at the Colorado University and Webster University in St. Louis.

Inducted into the TEC Awards Hall of Fame in 1993, Porter also won the William T. Kemper Award for excellence in teaching in 2003 and was bestowed with a Lifetime Achievement Award from the Student Chapter of the AES at Webster University.



Chet Atkins and Bill Porter (right) work on a Session at RCA Studio B in Nashville, June 1961

Porter passed away peacefully in Ogden, Utah, on July 7, 2010, with his wife, Carole, by his side. He is survived by a brother, sister and his children, Nancy and Gene. Memorial donations can be sent to the University of Miami’s Music Department in Porter’s name. ■

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