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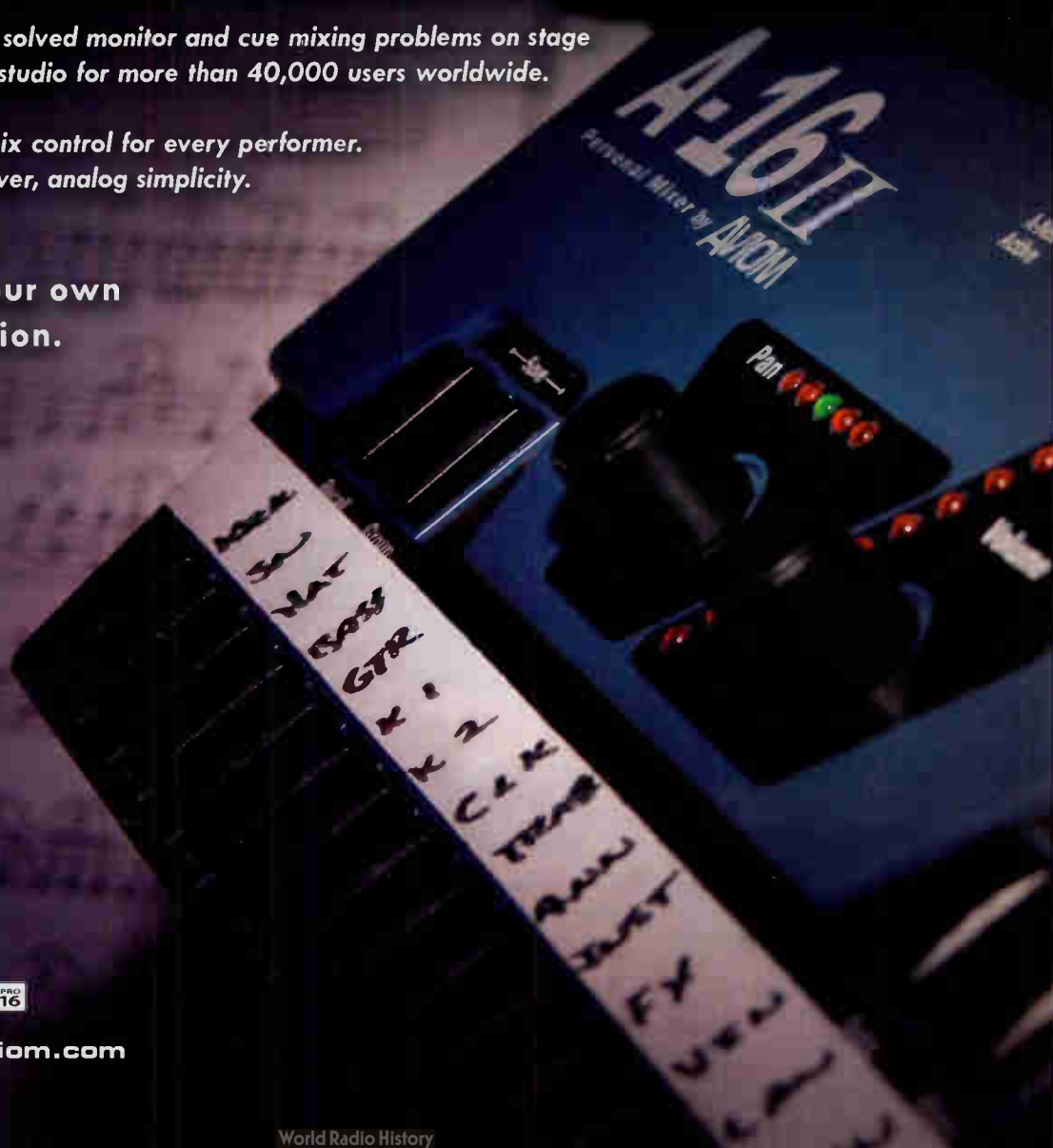
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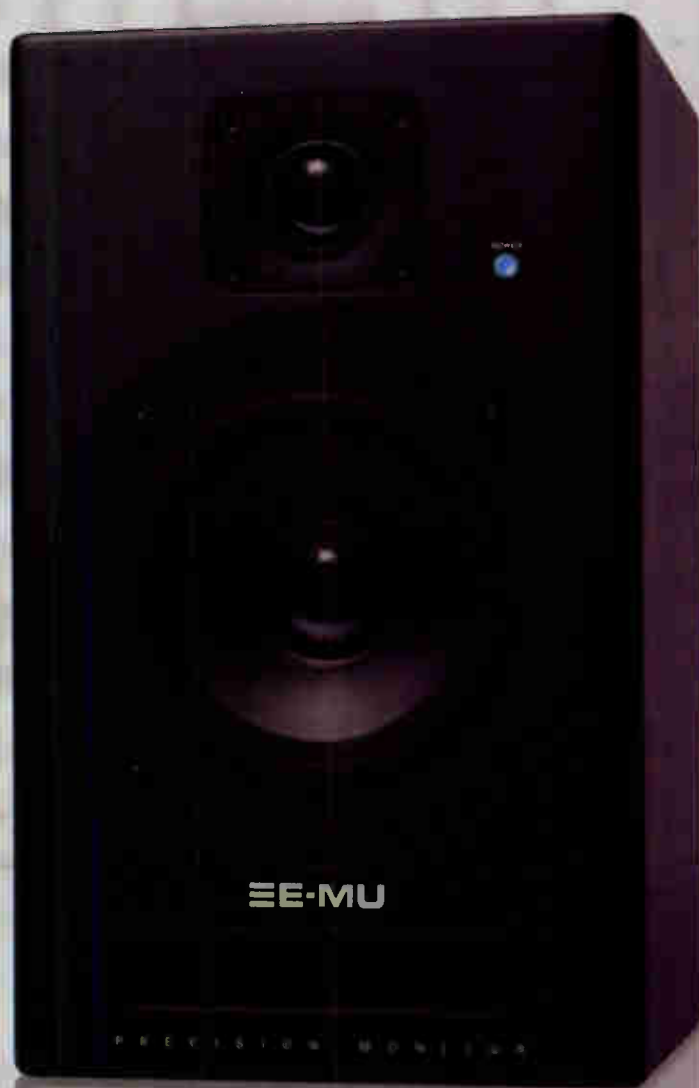
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January 2006, VOLUME 30, NUMBER 1

features

30 Orchestral Recording

Revisiting and Refining Classic Techniques

The old adage "if something isn't broken, don't fix it" fits in quite well with orchestral recording engineers, who have found great results in "old-school" miking and recording techniques. Even as they adapt to evolving technology, seasoned engineers Lawrence Rock, Allen Sides, John Kurlander and John Rodd maintain a modified traditional approach.

38 Essential Equalization

In every audio engineer's arsenal, you'll see EQ—hardware or software. While audio pros definitely have their tried-and-true outboard EQs, virtual EQs are better than ever, with improved sonics, ease of use and flexibility. *Mix* rounds up the latest in traditional EQ plug-ins.

LIVE SOUND SPECIAL!

Top-selling tours, regional spotlight, the latest road gear and much more.

48 Networked Amplifiers for Live Sound

Networked communication for power amp management can make life a lot easier for SR engineers when configuring and tuning industrial sound systems, touring P.A. systems and club/stadium/theater installations. Networking was once offered as an add-on, but these days, many amplifier manufacturers are designing their amps with onboard data communication.

74 All Access: Death Cab for Cutie by *Steve Jennings*

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On the Cover: Modern funk group Jamiroquai is out on tour supporting their new album, *Dynamite*, transforming clubs across the U.S. into a groove-laden dance party, with assistance from UK-based sound company Britania Row. **Photo:** Steve Jennings.



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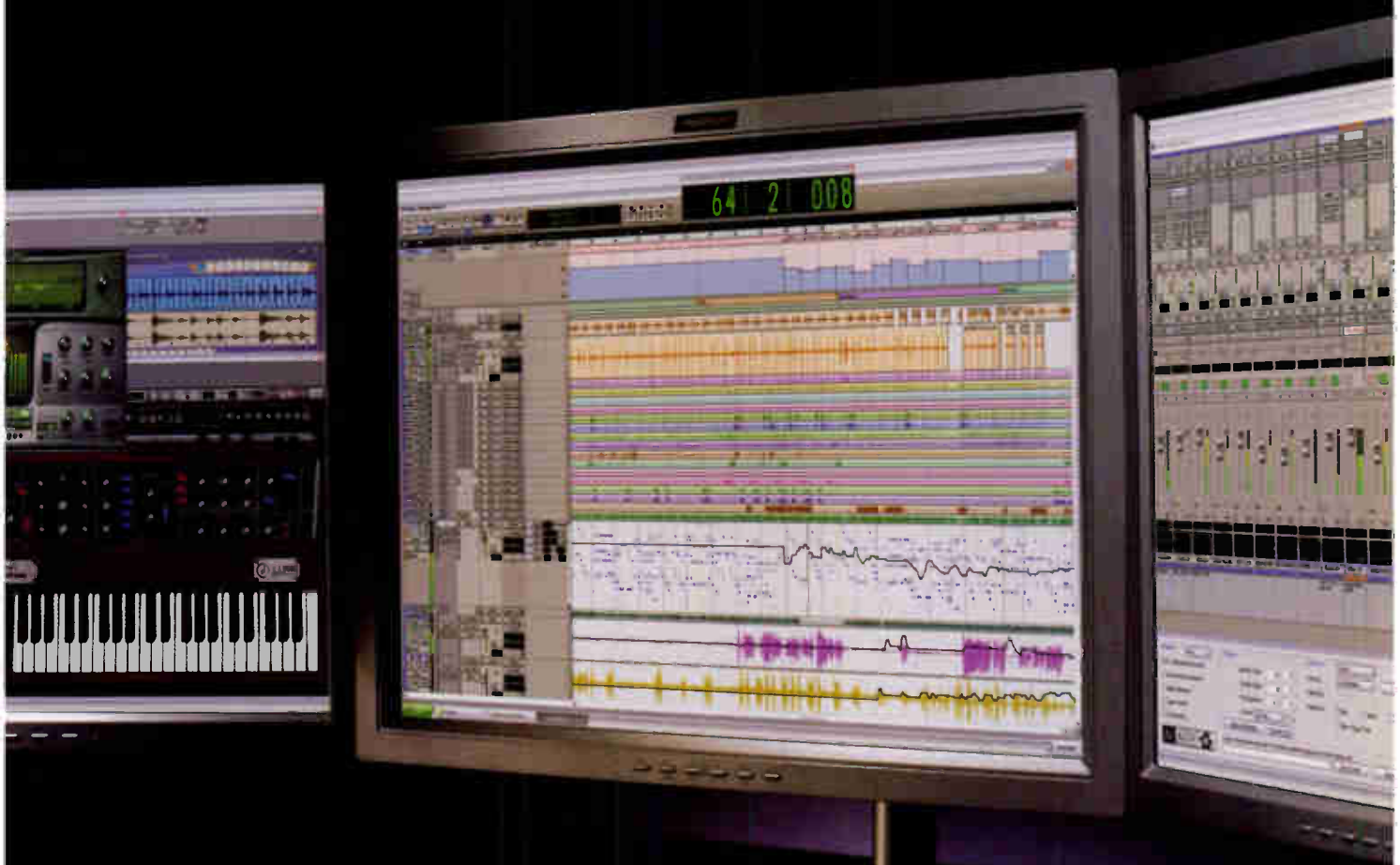


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Virtual Vintage

Walk around any pro audio/MI convention, and you'll see lots of vintage gear—or *vintage-looking* gear. Some of it is close to the real thing, from museum-quality, custom-shop reissues of older Strats and Les Pauls to meticulously hand-wired Vox AC30s or Universal Audio 1176LNs. Other stuff has a vintage style or flavor, putting modern components into a retro package like Shure's 55SH "Elvis" mic. At the same time, you can see a lot of gear with a classic appearance—at least in onscreen emulations of huge bakelite knobs, rounded VU meters, etc.—in the form of plug-in software. In fact, with a little careful editing, a video tour of this month's NAMM show could look more like 1966 than 2006.

We audio types are all tire-kickers at heart. When checking out a new console, the first thing we do is move a couple faders or knobs to determine their feel. In fact, years ago, a young Greg Mackie was disappointed with the gain pots on his Tapco Model 6100 mixer design and experimented by squirting various types of goop into the controls to give them a smooth rotation. It worked, but over time—or in colder climates—turning those knobs became a real chore.

Ironically, if feel is so important, then why are we so willing to give it all up when we substitute a control surface for a console or a mouse for a fader? If feel meant nothing to guitar players, then companies such as Benedetto, D'Angelico and Paul Reed Smith would cease to exist.

I was recently watching the (highly recommended) DVD *Tom Dowd and the Language of Music*, a brilliant documentary on the career of one of the industry's legendary engineer/producers. In the film, Dowd recalls the experience of working with rotary controls and how he was liberated by the transition to linear faders, which allowed him to create a dynamic, fluid mix as nimbly as a conductor works an orchestra.

These days, with the availability of automation on every console parameter, creating a mix can take weeks rather than minutes, especially when each cowbell clank can be tweaked to absolute sonic perfection. Certainly, nobody wants a bad mix, and the ultimate power of automation can allow the creation of works that previously would have been impossible, but when you're running 80 inputs on a metal power trio—or a cappella madrigals—maybe something's wrong. With all the tools at our disposal, technology can sometimes get in the way. All too often, a little time spent on non-technical attributes—such as re-examining the lyrics, reworking a bridge or polishing the arrangement—will make a far greater contribution to the song than four hours of editing a hi-hat pattern.

But let's not toss out the technology with the bathwater. Sure, I wish I had a 9-foot Bosendorfer Imperial Grand in my studio; however, it's nice to know I've got some affordable (virtual) options. And a walk down the floor at this month's NAMM show will demonstrate that there's room for both emulative and actual products in our musical lives. Yet, somehow, a little more tactile reality wouldn't hurt at all.

George Petersen
Editorial Director

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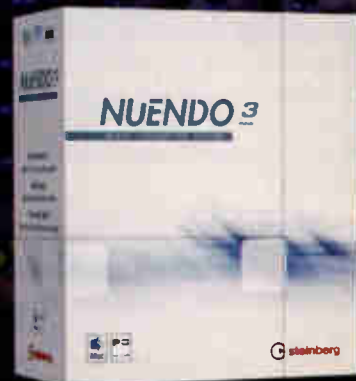
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Letters to Mix



GREAT IDEA, QUESTIONABLE APPROACH

First, let me commend you on a great October 2005 issue. I found the overall content to be really informative to my particular interests, and the AES reviews were gravy!

I did find some things in KK Proffitt's article, "The Resolution Project," puzzling. Her presentation was fine; it's in some of the technical approaches conducted by John Calder [producer and founder of Generator LLC] while creating *The Resolution Project* that I question. I specifically take issue with the following passages from Proffitt's article, which reads: "Calder simultaneously recorded five channels of PCM audio at three different resolutions: 16-bit/44.1 kHz, 24-bit/96 kHz and 24-bit/192 kHz"; and, Calder explains, "The three data-compressed formats [MP3, WMA and AAC] were encoded from the 16-bit/44.1kHz stereo selections in exactly the same popular method utilized to convert CD tracks for playback on portable digital audio players, then transcoded back into 16/44.1 resolution."

I think it's fair to say that most engineers are recording content in a minimum of 24-bit/48kHz resolution with 24-bit/96 kHz becoming more and more the de facto standard (at least where the goal is published content). Perhaps it would have been more in step with the industry to first convert the 24-bit/96kHz or 24-bit/192kHz tracks to 16-bit/44.1 kHz and then create the lossy formats. I understand that Calder wanted to avoid adding dither into the equation, but his result was a less-than-true representation of what is really happening on the street.

I also noted that the lossy formats were encoded at 64k-bit/second. I am under the impression that 128k-bit/second is a more popular resolution as "FM quality" (Fraunhofer Table) and might have been a better choice.

All in all, I think *The Resolution Project* is a

great idea and helps to bring a higher-fidelity awareness to the consumer. As a side note, I've noticed that most people who are making the public aware of high-resolution audio speak of or demonstrate the point in the realms of jazz and classical music. While this is quite understandable, to show the full sonic advantage, I have relied on showing my clients the differences between DVD-A, CD and MP3 using rock 'n' roll. The message still shines through. Perhaps Calder can try different musical genres for *The Resolution Project, Vol. II*.

Merrick Fleisher
Bellsong Recording Studio
Brooklyn, N.Y.

FRESH FRUIT FOR THOUGHT

There's quite a bit of misinformation and misstated facts in the October 2005 "Classic Tracks" article on Dead Kennedy's "California Über Alles." I wish there had been a little more finickiness.

Other bandmembers besides the finicky lead singer made many more significant contributions to the projects than could be learned from the article. It's a little embarrassing, but they failed to mention that I was the one who wrote the guitar part to "California Über Alles," mixed the single, set the label up and, with drummer Ted, sold the first 6,000 singles. It's also embarrassing that I was not credited for the mixing of *Fresh Fruit for Rotting Vegetables*. I did all the mixing with Oliver DiCicco and was, in Oliver's opinion, the producer—I managed all aspects of the recording.

And, I guess, in the zeal to make sure others did not get the proper credit, some factual errors slipped through. After *Fresh Fruit for Rotting Vegetables*, the band recorded *In God We Trust Inc.* in 1981 at Mobius Music. Next was *Plastic Surgery Disasters* in 1982 with Thom Wilson and John Cuniberti at Hyde Street Studios, then *Frankenchrist*.

Though people love to get this one wrong because it's easier than doing the research, the band broke up well before the *Frankenchrist* album cover trial, not in the midst of it.

East Bay Ray

LATENCY ISSUES DON'T ADD UP

In Jim Aikin's article ["What's the Holdup," October 2005], what he says [up until and concluding with]—"Thus, the track will be perfectly synchronized with other tracks that were being monitored while the recording was being made. Problem solved."—directly implies that if I take an analog out from my

Pro Tools 002R, for example, and record its output directly back into an analog in on the same unit, then the newly recorded audio will precisely align with the original audio.

Well, sorry to say but, no, it doesn't! You will consistently get about a 94-sample delay when recording at 48/24 and about 82 samples at 96/24. I can further reduce the 96/24 delay down to about 73 samples by using my Apogee MiniME as the input and sending its S/PDIF out into the 002R's digital in. We're only talking 1 or 2 milliseconds here, but Jim implies this problem has been precisely addressed and solved. Sorry, but it has not!

David Loeb

You make a good point, David. Some DAW/ interface combinations compensate better for monitoring latency than others. Using Cubase SX3 and an M-Audio FireWire 410 whose buffer is set to 1,024 samples, my out-to-in latency is only 11 samples at 48 kHz (equivalent to moving a mic less than three inches further from the source). This is somewhat better than your figures for Pro Tools, and is certainly inaudible except under test conditions, but I have to admit that "problem solved" was a bit of an overstatement. Engineers who are concerned about this latency can diagnose their system's out-to-in latency at a given sample rate and buffer size, and then advance newly recorded tracks by a few samples as needed.

—Jim Aikin

A WORTHY CONTENDER

I am just now finding time to write you on the 2005 TECnology Hall of Fame innovations in your September issue. I think that all of your choices are worthy of the distinction that you have given them.

I would like to bring to your attention an innovation that I believe has revolutionized the audio industry. Time Delay Spectrometry (TDS), invented by the late Richard Heyser, has enabled many advances in our industry. This measurement technique made it possible to more fully characterize loudspeakers systems and to analyze the acoustics of spaces and how to better treat them.

Charlie Hughes
Excelsior Audio Design & Services LLC
Gastonia, N.C.

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GET ADR OR DIE TRYING

As Hurricane Katrina moved toward Miami, Manhattan Transfer Miami (www.mtmiami.com) was expecting 50 Cent (who was in town for the MTV Video Awards) for an ADR session to replace 40 lines in his new movie, *Get Rich or Die Tryin'*. But then the hurricane hit and the studio lost all power. However, nearby hotel Ritz Carlton (where the movie's director, Jim Sheridan, was staying) still had its lights on, so senior audio engineer Eric Williamson and audio engineer Juan Dieguez took the session to Sheridan's hotel suite and set up shop.

"Juan and I simply packed everything we needed or thought we would need into his SUV: headphones, spare headphones, mic stands, DATs, cables, preamps—everything," remembered Williamson. "With the power being out in most places and no guarantee that the rest of Miami wouldn't soon follow—and because 50 Cent only had so much time—the clock was really ticking, so we raced over to the Ritz Carlton and unloaded all the gear.

"Of course, we were not in the best controlled environment and we had no idea what ambient sound we would be exposed to," he continued, "so I decided to dual-mike 50 Cent because we wanted the intimate 'voice-over' sound quality of the Neumann U87, but the rejection quality of the Sennheiser MKH 60 shotgun. Basically, the U87 had the sound we were looking for, but not the pickup pattern: Any unwanted noises would be picked up, as well. The MKH 60's timbre wasn't ideal, but its hypercardioid pickup pattern rejects pretty much any sound except what it's pointed at. So I decided to run both mics simultaneously."

The crew also used a Tube-Tech MP-1A preamp to accentuate that "voice-over quality we were striving for," said Williamson, who also brought in two DAT machines: one as the master and one to run a simultaneous backup copy. "We set it all up in Jim Sheridan's hotel room and decided to have 50 Cent sit on the couch. This was not only for the sake of 50's comfort, but also because the couch had a high back, heavy drapes to the right and a plush bed on the left—ideal acoustics, as far as hotel room recordings go! During the actual recording, lady luck finally came to our side as not only were the 'neighbors' quiet, but there was also very little foot traffic in the outside hall. The only big noise problem was that we had a VMA party outside, nine floors down! Luckily, most of the sound bleed was of lower volume and in the lower-frequency range so it can be filtered out by EQ.

"All in all, I think we got pretty lucky."

QUAD SALE FINAL

It took longer than was initially expected, but the sale of the four floors of Quad Studios (www.quadstudios.com) below its penthouse has been completed. In New York City, Lou Gonzales has passed the torch to Ricky Hosn, the 29-year-old former owner of Renaissance Recording (Tampa, Fla.). The studio will continue to operate under the Quad name and retain many key staff members, including operations manager Robbie Norris, assistant manager Willis Sowder and studio manager David "Ros" Rosner; Gonzales will continue to own and operate Quad Nashville.

While Quad's traditional commercial facility business plan will keep the studio largely out of competition with its new upstairs neighbor, Tainted Blue Productions, there are some definite similarities in its new-school outlook. "It means the world to me to get Quad," Hosn said. "The old school is a lot different. Today, one person can engineer, mix and produce the whole record. The rooms I'm going to open up are for one person to start and finish by themselves, using digital workstations and virtual synths. But being able to put that with the old school—now I can take that to a world-class 'J' room—that's a lot different." Extensive renovations to the studio and equipment upgrades have already begun and will be completed in early 2006.

—David Weiss

PHOTOS: MOJO WORKING



Juan Dieguez (right) and Eric Williamson loading all possible necessary gear into their car for the 50 Cent session at the hotel room



Jim Sheridan's hotel room. Note the two-mic setup for 50 Cent.

ANOTHER ROAD CASE A TEC AWARD FOR U2



From left: engineers Dave Skaff, Joe O'Herlihy, Niall Slevin and Robbie Adams accept their TEC Award for Best Tour Sound for U2's Vertigo tour while backstage in Oakland, Calif.

PHOTO: DAVID WEISS



From left: Robbie Norris, Ricky Hosn and David Rosner

PINK SPIDERS AT ELECTRIC LADY

The Pink Spiders recently finished tracking for their soon-to-be-released, untitled album at Electric Lady (New York City). Pictured from left: producer Ric Ocasek, studio manager Lee Foster, assistant engineer Ryan Simms and tracking engineer Mark Owen.



FAIRLIGHT TO BENEFIT WITNESS

PHOTO: BOB OBER/FINDER



Fairlight's John Lancken and Steve Winwood

Fairlight has partnered with human rights nonprofit group WITNESS to host an auction of a one-of-a-kind, vintage Fairlight CMI signed by legendary musicians and producers—including Peter Gabriel, Hans Zimmer, Thomas Dolby, Alan Parsons, Todd Rundgren, Mike Oldfield and Jan Hammer—with each participant signing one white key. All proceeds from the auction will go directly to WITNESS to support its efforts to equip and train local organizations around the world to document human rights injustices.

According to Fairlight CEO John Lancken, "A keyboard is a natural, universal form of expression that subscribes to only the language of music. In our partnership with WITNESS and the participation of legendary artists of our lifetime, this keyboard is more than 61 keys.

It's a symbol of individuals coming together to support the brave men, women and children aided by WITNESS."

Gabriel, co-founder and chairman of WITNESS, commented, "I am deeply honored that Fairlight has selected us as the nonprofit beneficiary of the auction. We look forward to working hand-in-hand with Fairlight to make this a successful auction and a strong partnership for the future."

Watch this space for news on the upcoming auction.

LEARNING ONLINE TRICKS

After 20 years as a real estate agent, 56-year-old recent Berkleemusic.com graduate Del Couch now owns and operates his recording studio in Palmetto, Fla. (just south of Tampa), Howling Dog Studios, which hosts local bands and musicians available for session work. Last year, Couch recorded with neighbor rocker/producer Rick Derringer. "Rick told me if I got hip to Pro Tools, he would certainly like to record at my studio," said Couch. "All I knew about recording was from reading trade magazines, so when I heard about Berkeley online, I signed up for Pro Tools 101. I not only learned how to become a digital engineer, but I also found out what equipment and software I should buy."

Couch then took Mixing and Mastering With Pro Tools and the Production Workshop courses. "Just having my certificates on the wall has really helped make the studio a success," Couch said. Howling Dog is centered on a Digidesign/Focusrite Control|24 mixing console and Pro Tools|HD3 Accel running on a Mac G5, as well as top-notch mics and outboard gear.

PHOTO: MR. BONZA

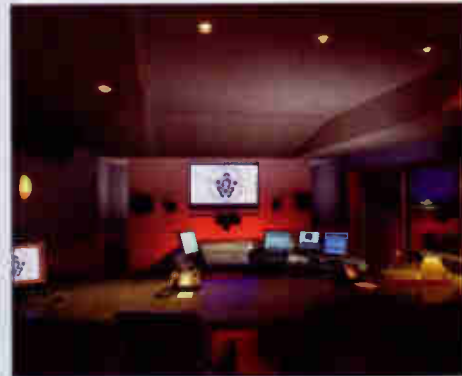


Rick Derringer (left) and Del Couch

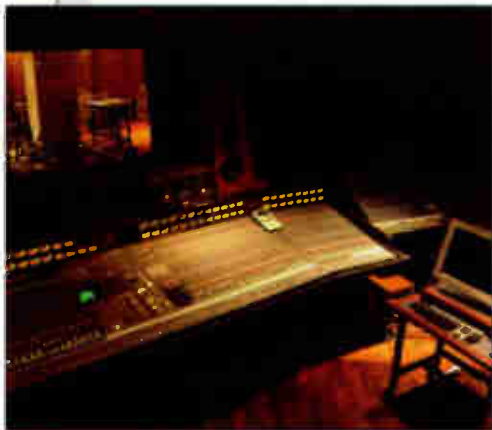
MARGARITA MIX GOES HD

Margarita Mix de Santa Monica's (www.margmix.com) infrastructure has been re-engineered to host full high-def audio, including adding a Fairlight DREAM Constellation routed to a digital high-definition D5 VCR and 61-inch high-def monitors, allowing for mixing 5.1 to HD picture and layout to and layback from HD picture.

"We chose Margarita Mix de Santa Monica to do the 5.1 mix of the theatrical trailers for our hit series *Everybody Hates Chris*, and it was very helpful to be able to view them in HD right there in the studio," said Jeff Morritt, VP of advertising and promotion at UPN. "Overall, we had a terrific experience. The mixer was great to work with, the facilities were top-notch and the finished product sounded great."



GROOVEMASTER UPGRADES WITH SSL



Engineer/producer Johnny K (owner of Groovemaster Recording in Chicago, <http://groovemasterstudio.com>) recently tracked Disturbed's latest release, *Ten Thousand Fists*, on the studio's new SSL 4080G+, supplied by PAD. PAD also brought in Dynaudio Acoustics/Custom Munro C4+ mains with custom 3x12 subs finished in natural cherry with Chord Electronics amplifiers and XTA crossovers.

PAD's technical group also assisted in the wiring and integration for the new console upgrade. Since the completion of the construction, Groovemaster has hosted sessions for P.O.D., Sum 41, Simple Plan and 3 Doors Down.

CLASSICAL TURNTABLISM



PHOTOS: FRANCOIS PORTMAN



Top: DJ Radar (left) and conductor Constantine Kitsapoulos prepare. Above: DJ Radar and the Red Bull Arts

A most unusual spin on classical music performance debuted at Carnegie Hall in New York City this fall: the Concerto for Turntable. Composed by Raul Yanez (www.raulyanez.com), the scratch-happy suite in three movements was performed by DJ Radar and the Artsechro Orchestra and received a standing ovation from the discerning audience.

"My inspiration for this piece comes from many entities," Yanez said. "The first is my relationship with my good friend DJ Radar. We have spent many hours developing a bridge between turntablism and prepared music. The Music Education department at ASU was also a huge inspiration. In 2001, I was working on a Masters in Music Education degree at ASU, which provided a hands-on relationship with orchestral instruments, as well as philosophies and theories that I adapted for turntable pedagogy. My mentor Chuck Mahoronic was an inspiration for his insights on jazz trio and orchestra collaborations. I really need to include my wife, Gloria, as a major influence in all my work."

The orchestra was put together by none other than Red Bull. "It was made up of musicians that auditioned from NYU, New England Conservatory, Julliard and other major schools from the East Coast," Yanez continued. "Red Bull is known for its extreme sport productions; I think they took that extreme mentality and applied it to this project. Carnegie Hall is considered one of the most prestigious halls in the world and the final performance was unbelievable."

—David Weiss

INDUSTRY NEWS



Dave Missall

JBL (Northridge, CA) new appointments: Simon Jones, director of portable P.A. marketing; Phil Sanchez, product manager for commercial sound products; and Harald Kanz, product manager for portable P.A. products...Dave Missall

joins Sennheiser (Old Lyme, CT) as Eastern region market development representative, professional products...Tannoy North America (Kitchener, Ontario) hired Ivan C. Schwartz to fill in the Western regional sales manager position for the company's commercial/professional product line...San Francisco-based VirellaPro Sales & Marketing is Eventide's (Little Ferry, NJ) representative in Northern California and northern Nevada...TCS Audio (San Diego, CA) added Dimension/Point IX Marketing (Houston) to its field sales force, representing the company in Texas, Oklahoma, Arkansas and Louisiana...New distribution deals: SLS Loudspeakers' (Springfield, MO) new distributor in Germany is Audio Concepts and in the UK is Raycom (Warwickshire); Sonic Reality and esoundz.com (Sunrise, FL) are Q Up Arts' (Salt Lake City) exclusive worldwide resellers of the company's CD and CD-ROM sample libraries; Bag End (Barrington, IL) will be distributed in the Upper Midwest by Champion Enterprises (Eagen, MN) and in Australia and New Zealand by The Audio Vision Network (Alexandra, New South Wales).

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"Orchestral Recording": Read additional interview footage, culled from our senior editor Blair Jackson, on recording modern orchestral works, which often combine traditional and electronic instruments, voices, tape loops and other elements. Plus, browse through *Mix's* archival footage to read more tips from the pros.



Slate Run Productions: Constructing Slate Run, Jay Shilliday's new studio was quite an undertaking. Go online to see a pictorial of the build process.



Producer's Desk: Jeffrey Lesser shares more about *The Lord of the Rings* and reveals some other exciting projects he's got in the works.



DrumCore Percussion Loop Library "Field Test": Reviewer Jim Aikin assembled a "funky jazz shuffle" using the DrumCore loop library, Native Instruments Kontakt and Spectrasonics Trilog, among other items. Log on to download MP3 audio clips of his fun rhythmic arrangements.

NOTES FROM THE NET



iMesh launched the public beta version of its iMesh 6, a P2P online music service that hosts 15 million tracks available from the Gnutella and iMesh networks, including 2 million authorized tracks from major and indie labels, individual artists and public-domain content (home garage recordings, unsigned artists, unclaimed world music, etc.).

Users can download, and share music via either a subscription plan or a la carte. The basic iMesh 6 service, which includes the iMesh media player, is free for 30 to 60 days; after the introductory period, users will be charged \$6.95 a month. iMesh is broadband-enabled, supports Windows Media Player 10 and is compatible with any of the "Plays for Sure" devices. (Microsoft's "Plays for Sure" campaign includes a logo on devices that support Windows Media and will be advertised by download services that distribute files in that format. The campaign is aimed at assuring consumers that all services and devices carrying the logo will be compatible with each other.)

SOLO DAVE MATTHEWS
NEW WORK AT ROBERT LANG STUDIOS

From left: Dave Matthews, producer John Alagia, engineer Justin Armstrong and second engineer Austin Sousa

Dave Matthews recently recorded new material at Robert Lang Studios (Seattle, www.robertlangstudios.com) with producer John Alagia (who called the studio "an incredible-sounding room"), chief engineer Justin Armstrong and second engineer Austin Sousa.

Work was completed on the studio's 48-channel SSL 4000 G Series board with Total Recall, which offers E Series EQ, G+ computer, 24 mic pre's, updated center section and all-new capacitors; a 12-channel API sidecar with 550A EQs was also

used. Monitoring was via soffited Westlake, dual 15-inch JBLs with TAD horns and drivers, two McIntosh 2300 power amps, a Genelec 1032 and a Yamaha NS10M Studio.

Matthews' vocal mic was a Neumann Tube U47 through an API mic pre and LA-2 compressor. Drums were miked with Electro-Voice 868 (kick), SM57 (snare), KM84 (hi-hat) and M49 (room).

CORRECTION

In the October 2005 "The Audio Pipeline" feature, under the "Protocols at a Glance" heading, the sentence, "...with architectural support for a staggering 3,200 Mbps/13.2 Gbps..." should have read 3.2 Gbps. *Mix* regrets the error.



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Part Two—Things Get Complicated

Last month, I promised a hardcore report on the “compromised” gear in my living room. This won’t be as boring and irrelevant as it seems, as there were some interesting surprises and discoveries.

Having gone full-tilt, no-windows audio my whole life (and having always been very happy with the acoustic results), I was torn. I knew I could achieve my acoustic goals that way, yet I had been secretly envious of all those PMDs who have the newer slick sticks. These Pretty Much Deaf have been happily installing tiny aluminum sticks instead of real speakers for a few years now, and their living rooms and trailers look great. They usually sound like 1970 laptop speakers driven by 1966 Magnavox 8-watt console amps at 400 percent TDR, but they *look* marvelous.

Some people go for those Costco home theaters in a box—with all the amps, a CD changer, five speakers and a sub for \$299—and others have \$29,999 European super-slick terawatt sticks. And though the quality difference can, on occasion, be shockingly small, the high-dollar monsters usually eat the toys for lunch. But nothing can touch a classic room and relationship-destroying, dedicated stereo-dank-windowless-cave setup. If you want the real thing, you gotta put the monsters in a cave, where they belong.

Well, I have a cave and now I want a living room. I want the speakers to be art but still speak, and I do not want to be able to tell where the walls are. This is one of those outside/inside spaces, and I want to keep it that way. So I have to compromise. Luckily, I am already halfway there. My previous setups had racks showcasing the gear, but my last two have separate gear rooms for the cleanest, least visible approach. Hold on. Don’t envision me running around in a Mac-mansion in my Sansabelt pants turning little wire-wound Bogen attenuators to adjust the levels of glorious Muzak on each room’s 88-cent, 6x9 ceiling speaker. Don’t even envision me attempting to be anything short of violently cruel to anyone who I discover actually went that route.

Nope. I just want a little aesthetics with my flicks and tunes. *Sleek* aesthetics. So I want a set of sticks, too, but I gotta be able to live with them—*lots* of them. I shopped, I listened, I cringed. The speaker count went from 11 to more than 20 once I realized that the bedroom system would look and sound stupid once I finished the living room. This meant that each \$100 spent on a stick would translate to a \$2,000 increase in total outlay.

And so, I now share with you my extremely complex compromised purchases of late, and my newfound respect for the skills involved.

DISPLAY

Easy. Panasonic plasma. One of the few that can make black, and it has several plug-in interface slots, which I

have filled with HDMI cards. No audio at all. Perfect. Also, one of the least expensive panels that actually works.

SPEAKERS

Not so easy! In fact, things went so poorly that I gave up and abandoned the project for a few months until a new technology came along that made it, for the first time in my opinion, possible.

I found terrifying monoliths that sounded quite nice, each blocking about 22 acres of view. I found smaller ones that sounded *real* nice, but dangerous voltages were involved. But at least you could sort of see through them.

There was one popular 7.1 setup that the mags seem impressed with—the Definitive Technology Mythos series. They are skinny, cool-looking, mid-priced, solid metal

Nothing can touch a classic
room...If you want the real
thing, you gotta put
the monsters in a cave,
where they belong.

sticks. They fell right in the group of sounding okay except for a bark and bite here and there and some crossover phase shift that made me feel like I just had nasal surgery. But, in all fairness, I am violently intolerant of *any* phase shift—I can physically feel it in certain \$40,000 speakers.

And after a week of *hard* break-in, they calmed down and seemed okay for their intended application. But that phase shift continued drilling number 20 holes into my forehead. Tall, skinny towers are not an ideal shape for controlling internal resonances or multiple-driver phase cancellation. But they do look cool.

POWER AMP/RECEIVER/SWITCHER THING

I *really* wanted to go all Class-D (no, this is not a joke; the new ones sound solid and effortless and clean as hell), but there were no straight digital offerings that had any mystical DSP that would let me use the speakers I wanted.

So after doing everything I could to avoid it, I went with a Denon AVR3805. And I hated it. It was underfeatured, underpowered and the thing I got it for, the Super-Monster-Fix-Your-Room-In Short-Short-Time feature was, well...nah.

Now these here are modern times. You just plug a mic into these machines, push a button and sit back while they

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set your entire room up. They claim. And here is what that AVR3805 did. It perfectly time-aligned every speaker. It level-balanced every speaker within about 1 dB and then let me touch each one up. It suppressed most of the room and speaker resonances, and pretty much flattened out the entire system so that pink-noise analysis looked okay.

But it *sounded* unbearable. Sort of a Whitman's Sampler of phase problems. I tried 10 times, got 10 different results, none of which were tolerable at all. The room may be ridiculous as far as acceptable acoustic environments go, so all this may be unfair, but I was on a mission and I don't think it was so unfair—just real, real tough.

So I returned the AVR3805, just as a truck arrived at the store with the first AVR4806. This machine is quite expensive, has many more features than any human could ever need and has a fatal HDMI bug that won't pass Version 1 protection, making the entire digital switching portion useless to me, but it *did* have this new snake-oil thing called Audesey. I bought it. I could always bring it back once it pissed me off. I couldn't carry it to my car and it won't fit in my gear rack, but it's here in front of me nonetheless.

Audesey is supposed to be some alien magic that fixes absolutely everything in

your life with no audible side effects, and do it, wait for it...for *eight* listening positions, wait again...simultaneously.

Well, let's get this myth out of the way right now. It does. It claimed to be a true FIR nonlinear system that even fixes the subs (the others *destroy* sub response), so you do the same thing—hook up the mic, push the button, sit back and wait. But then you pick seven more places in the room and do it for each of those. It then goes off and crunches for available room EQs.

Now I have the largest Mythos speakers, the Denon AVR4806, 4,000 pounds of Monster cable and interconnects. (Yes, I do use Monster. You could weld with the speaker cables, the video and optical interconnects are so overbuilt that my cats can't bite through them and it sounds very good.)

And...nothing sounds much different. (Insert frown emoticon here.) Oh well. There was a boatload more amp power and a more open feel, but the speakers and the room sounded pretty much as they did before. Maybe I did something wrong, like neglecting to actually select the Audesey EQ. Devil's in the details.

So I turned it on. Absolutely amazing! Balance, delays, image, stage—all perfect.

Response curves, resonance management, all that impossible stuff—apparently possible after all. I have never even re-run the setup; the first try was so good that I have been using it ever since. But here's the kicker—I hear *no* phase games, no IIR artifacts, no creepy dynamic image shifting. None at all.

In fact, when you turn on the Audesey, the problems either go away or are noticeably minimized, the soundstage snaps into place and that's it. You don't really *hear* anything. You don't hear it work. But all hell breaks loose if you try turning it off after a few days. I tried it...once.

Of course, this fix-it-in-the-bits approach in no way replaces actually setting a room up properly as an acoustic environment. Duh. But, if you can't, this setup can make it all work anyway. And that's a pretty big deal.

So there you have it—an improbable story of hardcore mystic technology (sort of acoustic cold fusion) solving a problem that has never really had any viable solution until now.

By the way, I am now using Audesey in one of the studios, on monster speakers. ■

SSC is feeling quite centered these days, especially when the DTS light comes on.

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My Back Pages

T-Plus-10 and Counting

In January 1996, this magazine reported that 3M was getting out of the recording tape business. Ampex was changing its name to Quantegy. Alesis was advertising the new, beefed-up ADAT XT, and Avid was touting its AudioVision system for (gasp!) combining audio and video on a single computer. The news page announced half-a-dozen manufacturers now had sites on the World Wide Web. And on page 28, the "Insider Audio" column appeared with a new byline—mine.

Actually, my first essay for *Mix* was published the previous September—sort of a "dry run" so that the editors and I could get a feel for each other. It was entitled "Fear of Frying (My Studio)" and was about the dread I felt every time I changed anything in my setup. I guess they liked what they saw. Unfortunately, that dread has never gone away.

The 10 years since have been, as the Chinese curse says, interesting times, during which I've somehow managed to produce 120 columns. I've written columns I'm very proud of and columns I'd very much like to take back. There were columns that flowed out of my keyboard from the original idea to the last period and columns that were like pulling teeth to write (although hopefully not to read). And there were a few that were so inflammatory that the editors wouldn't run them. I've gotten tons of feedback, most of it favorable, but a good portion of it falling into the "You don't know what the hell you're talking about" category, and it often happened that the writers of the latter were right.

So in honor of this anniversary, I've brushed the cobwebs off of some of my old columns and dug out a few of the things I've said in my 10 years on the "Insider Audio" beat that still make me smile—or make me cringe. Here are a few that made me smile.

On the future of hardware (January 2002):

As long as we have hands, fingers and feet, we will need to be able to hold, push, turn, press, squeeze and stomp on our tools if they are going to feel like they're ours. Until, of course, purely synaptic-driven interfaces (with appropriate neural feedback) are perfected. At that point, all bets are off.

On using systems that are too perfect (July 1997):

Finding defects in a tool and turning them into virtues is an age-old practice, and much of the music of the early rock era is defined by this. And perhaps that is what people are *really* missing in today's gear: the serendipity of finding something weird and figuring out how to exploit it artistically.

On dealing with clients (October 1996):

Audio is a very high-tech field, and it's also a high-glamour field. A lot of clients like the latter part, without understanding very much about the former. But they *think* they do, and that makes them dangerous.

...and more (December 1998):

Whether or not they have anything to do with their

projects, some clients will insist that you have the latest plug-ins, operating systems, digital effects and tube pre-amps or they'll take their business somewhere "hipper." It doesn't make any difference that they're producing a video that's going to end up on a kiosk in the middle of a railroad station waiting room—if you haven't got 24-bit 96kHz converters and a mixer with automated effects and 5.1 surround panning, they're not interested in you.

On the problems of keeping up with technology (September 1995):

Imagine how guitar players would react if every time Fender came out with a new model, it had a different number of strings in a different order and the frets were arranged in a new way.

...and more, from producer/engineer Tom Bates (April 2000):

Imagine how guitar players would react if every time Fender came out with a new model, it had a different number of strings in a different order and the frets were arranged in a new way.

"I hate going up and down the aisles at AES and seeing 800 new little black boxes. I don't quite grasp what they do, and I'm not sure I need to do any of those things. It's all got to be work-driven. There's no point answering a question nobody has asked or solving a problem nobody has."

On life lessons (August 1999):

If you ever—well, more than once—ask yourself, "What am I doing here?" then you probably don't belong here. If you don't love this, if you can't imagine yourself spending the rest of your life anywhere else except in front of or surrounded by a bunch of speakers, devoting all your energy and creativity to perfecting in one way or another the sounds you hear, then you're in the wrong place.

On user manuals, from Digidesign support tech Beto Carvalho (February 2000):

"Some people call support every time they try to do something they haven't done before, without ever consulting the manual. And they say, 'Walk me through this.' When we tell them to read the manual, they'll say, 'I don't have time for that!' or 'I don't understand it.' We understand that manuals are not exactly light reading, but it's not support's

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job to read it for you. As a colleague of mine once said, "That's why we call it Pro Tools and not Amateur Tools."

THE DUMB STUFF I HAVE SAID

This little gem from November 1996: DVD seems to be designed from the git-go to be all things to all people, and history says that may not be such a great idea.

As it turned out, of course, DVD was a great idea, and it is all things to all people—almost. It's not the medium's fault that it's still not particularly well-established as a music-only delivery medium.

I admit I have had a very hard time accepting the Internet as a serious delivery system. As a veteran of 300-baud modems, I didn't believe that high-speed Web access would ever make it into a significant number of homes, and I thought that music lovers used to the sound of CDs would never settle for compressed audio.

So I wrote this pessimistic piece in February 1997: Even with an ISDN or T1 line, handling more than one channel of high-quality audio at a time is next to impossible. The fact that the best we can hope for in terms of soundtracks in this brave new world of the Internet is the ability to access a few megabytes of samples accom-

panying a telephone-quality voice track is sobering, to say the least. For an industry that has strived for so many years to attain the highest reproduction quality, it's pretty odd to be staring down the barrel of sonic mediocrity and calling it the future.

Although I still like that last sentence, the real lesson, which I keep forgetting, is never assume that the public will value quality over convenience. And also never underestimate the ability of truly dedicated engineers to force camels through eyes of needles. I expounded more nonsense in July 2001: There will always be, as there always has been, a race between the Net's capacity to carry traffic and the amount of traffic it's being called upon to carry. Every year, some expert solemnly intones, "In two years, we will have three times as much bandwidth as the nation will require," but, inevitably, the demand manages to catch up with, and usually exceed, the supply. As it is now, DSL and cable Internet are penetrating the domestic market very slowly—only about 5 percent of residential customers have high-speed hookups, two-thirds of them through cable and the rest through DSL. But that is all we're going to have for a while.

Yeah, right. Then there was this odd statement (October 1998): A lot of current

platforms have trouble accessing a modem and a MIDI cable at the same time, to say nothing of dealing with audio. I don't know if you've ever tried to pull down a large file from the Web at the same time you're recording a new track on your hard disk, but the experience isn't pretty. Even with a cable modem or T1 line, the World Wide Wait is not a pleasant way to get information quickly.

Now, why would anyone *want* to download a file while recording another one? But I guess I never asked myself that. And when it comes to pleasant times on the World Wide Web, I certainly never foresaw how many people would fall in love with MP3s and Internet porn. It's thinking like this that blew my chances to make millions—or lose them—in the dot-com boom.

I did a column about Napster that sparked a gigantic, heated online discussion that included this paragraph (October 2000): People who like music will continue to pay for it, if the music is what they want and the price is reasonable. Folk singers, rappers, garage bands, jazz players, world musicians, techno heads and anyone else who wants to make a living in this business without turning their music into zillion-sell-

—CONTINUED ON PAGE 146

GT PROFILE

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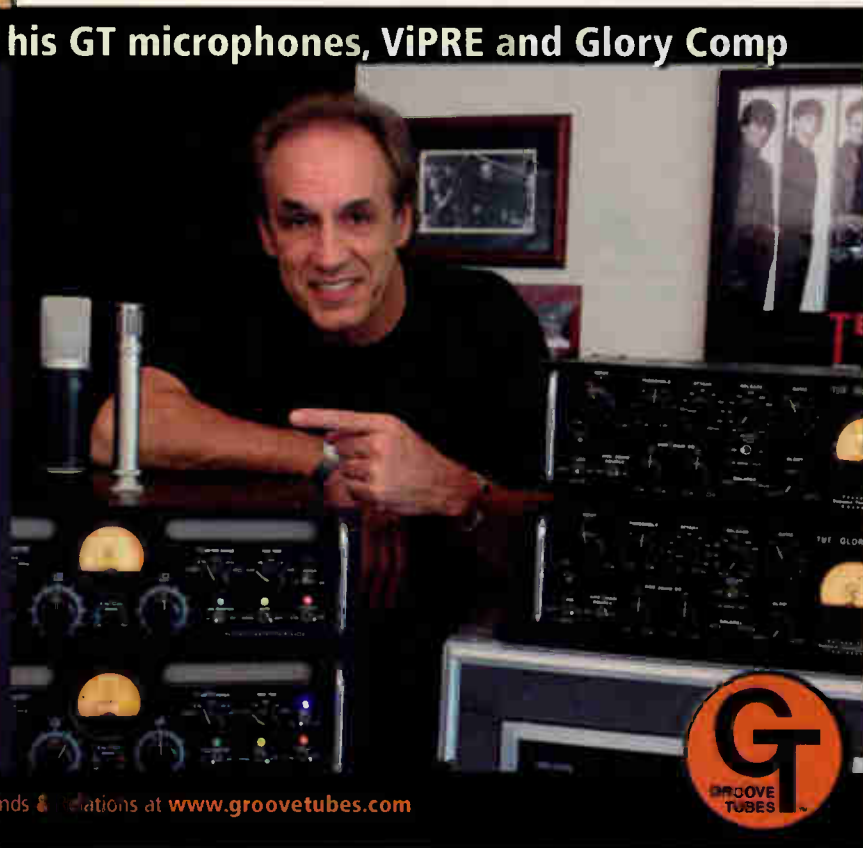
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Orchestral Recording

BY BLAIR JACKSON

The conceit of these sorts of periodic articles, which are designed to fill readers in on the latest recording techniques, is that there is great new information to be imparted—that changes in technology have led to some sort of reassessment of the way a particular musical style is captured for posterity. But the fact is, in the world of orchestral recording, there doesn't seem to be radical departures in the way that engineers are working, even as the ultimate media destinations have almost entirely moved from tape to digital disk storage. Traditions run deep in classical music recording, and while it isn't exactly accurate to say that there's nothing new under the sun, there is still a great reliance on tried-and-true methods that have been successful for many decades, though it isn't hard to find a few new wrinkles, too.

With that in mind, we contacted four engineers steeped in the wisdom of how to best record an orchestra, whether for a classical production, a film score or as background on a pop date. Lawrence Rock (you can call him Larry; many do) has been the audio director of the New York Philharmonic for nearly a decade, and has made countless classical recordings both in recording studios and, more often, live in concert. Long revered as an intelligent and resourceful studio owner (Ocean Way, Record One, et al), Allen Sides' greatest passion has always been engineering, and he's recorded orchestras for many pop and rock records (Goo Goo Dolls, Sheryl Crow) and film scores. These days, John Kurlander mostly engineers film scores in L.A. (*The Lord of the Rings* films, *Master and Commander*, etc.), but during his more than three-decade career, he has also cut dozens of straight classical albums and has worked with orchestras on numerous rock LPs. John Rodd, the youngster of the group, cut his orchestral recording chops in the late '80s and early '90s in his native Canada, working on classical and film scoring dates at Manta Sound in Toronto and the Banff Center for the Arts (Alberta). Later, he moved to Los Angeles and landed a job as a scoring recordist at Fox's Newman Scoring Stage and is now an independent engineer specializing in recording orchestral film and videogame scores.

MODIFIED OLD SCHOOL

For a half-century, orchestral recording has been dominated by two techniques that emphasize minimal miking in front of and above the musicians: The Blumlein method, developed in the early 1930s, uses a single pair of bidirectional mics to create an accurate stereo image; and the more popular Decca Tree, developed by engineers for Decca Records in the mid-'50s, uses three microphones on a T-stand (the classic iteration used Neumann M-50s) to give optimal left, right and center imaging for recording. (For a detailed, cogent look at the Decca Tree, see Ron Streicher's September 2003 *Mix* article at mixonline.com.)

There are still some purists who fully embrace these proven "old-school" techniques, but it has been much more common during the multi-track age for engineers to augment either the Blumlein or Decca setup (often modifying each) with spot mics over small groups of players or sections



A John Rodd session: musicians performing the score for an animated short film at Capitol.

REVISITING AND REFINING

of the orchestra that can be brought into the mix later. All four of these engineers favor a modified Decca Tree with spot mics. And, not surprisingly, surround recording also considerably changes the mic equation.

Kurlander got his start at EMI (Abbey Road) Studios in London in the late '60s. After several years working his way up from "tea boy" to assistant, he got his first shot as lead engineer on a classical project in 1975. "I went up to Liverpool with instructions from one of the chief engineers who said, 'Look, just do as you're told and don't experiment. I've been doing Liverpool Philharmonic Hall for 20 years now and *this* is how you do it.' You had classical engineers and pop engineers; they were very, very separate. The EQ modules for the valve boards even said 'pop' or 'classical' on them.

"The Decca Tree was the tradition from Decca, which was about a mile down the road from us," he continues. "and the tradition for EMI Classics was a Blumlein stereo



John Kurlander at the Neve Capricorn at CTS Studios, Watford Town Hall, UK

CLASSIC TECHNIQUES

pair, so you could get into serious trouble if you tried putting three M50s up. [Laughs] And, likewise, the Decca boys would have been in trouble if they had put up a Blumlein stereo pair. The truth is, even the guys who worked for Decca were constantly trying to second-guess [the Tree]. Even though they probably had the formula framed on the wall, they were still wondering, "What if we tried something else on the center? What if we went a little wider?"

By the late '70s, Kurlander found himself working increasingly on hybrid pop/classical projects. "You know that joke in *This Is Spinal Tap* where they say they want to do some of their acoustic numbers with the London Symphony Orchestra? Well, that joke was based on what actually happened! Every rock band worth its salt wanted to overdub the London Symphony."

Kurlander says that unlike in straight classical recording, when the orchestra's natural dynamic range is maintained, an ensemble being layered over a rock track

requires different mic treatment. "I would typically mike it up from three different perspectives: a close, a medium and a distant. Then I started compressing those three layers. In those days, I would probably have six or eight mics close, then a medium [pair] over the conductor and then a really distant [pair]. A lot of times, I wouldn't be mixing it. The engineer who had recorded the [pop] tracks would come along and I'd give them very specific guidelines on how to mix my tracks. By using the multi-perspective technique, you'd actually come out with something that was relatively squashed up but gave the illusion of being dynamic and natural."

Today, Kurlander says, the modified Decca Tree has become a standard for film scoring. "I use the [Neumann] 150s [a modern update of the M-50] simply because they're new and they're matched and they're reliable, and reliable is really important. So I'll do that and then do a round of closer mics, depending on what the score is, because you never really know what

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you're going to need [in the mix].

"I'll put my initial Tree at 10 to 12 feet. Then I'll have a circuit of close mics in the sections, and that would depend on the size and the writing and where we're recording—how close they're going to be. It could be as few as five or six mics or up to as many as 18 or 20. I use a lot of [Neumann KM] 84s or derivatives of 84s—the 184s. And if I have to go closer than about 12 to 18 inches, I prefer not to go that close with a modern condenser and I'll use a ribbon. And if I'm going to go for violin solo or a cello solo, I'll use a ribbon, as well. For surround, I'll have a pair of very high omnis, and sometimes



PHOTO: CHRIS LEE

Lawrence Rock in the radio room at Avery Fisher Hall, home of the New York Philharmonic

I'll add in some of the Tree's left and right into the rears."

LIVE CHALLENGES

Most of what Rock records for the New York Philharmonic are live concerts for either broadcast or CD release, putting him in a different position from the other engineers. Not only does he have to deal with a live audience, he usually doesn't have the opportunity to switch miking schemes between musical pieces at a given performance, even if there are significant changes in style or instrument configuration. And if he's working a broadcast, he also has to consider the dynamic limitations of radio compression.

"When you're recording live, you're dealing with an audience and the noise they make, and any concert hall is going to become less reverberant when people are in it. As a result, I have to use digital reverb; in fact, I've often said that I've built my career on the judicious use of digital reverb," he says with a chuckle.

Rock says he has mostly used Lexicon reverbs during the years. "The 300 has been

my workhorse because the digital interface is so straightforward. Of course, I go back to the era of the 200 and the 224, which didn't even have digital interfaces."

When asked about the newer generation of reverbs that actually emulate some of the classical halls in which he records, he says he doesn't like the "known room" approach, "because in my mind, what you're really creating is an idealized version; what we're creating is an illusion. Microphones don't hear the way ears do—you don't have the brain to sort it all out until you're listening on the other end, and then you're listening to speakers or headphones. So you're really creating a whole sound that's certainly related to the source, but it's hardly an exact replication. So you use whatever you have at your disposal in terms of types of microphones and the placement and whatever processing you need. That said, in the classical world, we try to minimize processing—choosing the microphone that has the kind of sound you're going for and then *not* adding equalization to it because, be it analog or digital, you're still introducing a form of distortion, technically speaking."

Rock says that growing up in Chicago, he was well aware of the Decca Tree approach. "During the [music director Sir Georg] Solti era, they always had the Decca Tree and they applied that approach no matter what hall they were recording in, and I think the results were variable. Sometimes they would have seven of the modified M-50s—a Tree and two outriggers on each side—and it was too much of the same mic sound; it got a little muddy and a little brittle."

Rock likes to mix mics, avoiding the buildup of the coloration of any given mic. "What I generally use is a combination of the Neumann KM-130s, which are the omnis—in fact, I use them with the little [sound defraction] spheres that make them, as I call them, the poor man's M-50—in the center, and then I use the Schoeps MK2S, which is an omni capsule that has a little bit of high-end rise, as does the Neumann 130. In a place like Avery Fisher Hall here [in N.Y.], and really, working in any hall with an audience present, the first thing to go is the high-frequency return—the kind of reflections and so on that would support high frequency. So those mics are both good for that."

How far up does he hang the mics? "Just under 10 feet; nine-foot-11 to be exact," he says with a laugh. "You get this sweet spot. These four mics hang in a line in front of the orchestra, spread horizontally. The center ones are 18 inches apart;

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Orchestral Recording



Allen Sides leaning over Capitol's custom API board, with (from left) assistant engineer Scott Barefield, Burt Bacharach (foreground) and music director Rob Shrock

the outriggers are another 12 feet out on either side. One of the things that does is give me flexibility in changing the balance between the inner pair and outer pair. The Schoeps tend to be a little warmer-sounding and the Neumanns are a little more brilliant and have a little more reach. A program might have a wide variety of pieces, and I can't go down there and change mics and change positions in the middle of a concert. But I *can* change the balance, and if I need a warmer sound, I can bring the Schoeps up, and if I need a clearer sound, I can bring the Neumanns up." When it comes to spots, "I'll use some of the KM-140 cardioids over woodwinds and some string spots. I also like the MK21, which is the sub-cardioid Schoeps. Generally, I go from the omni to the more directional as I go upstage."

CAPTURING SMALLER ENSEMBLES

A conversation with Sides centered on his involvement with the most recent Crow album, *Wildflower*, which features sumptuous orchestral accompaniment (by veteran pop arranger David Campbell) on nearly every song. While Sides certainly has experience working with larger orchestras, for this pop date, he recorded a smaller ensemble. The sessions took place at Ocean Way B in Los Angeles.

"The way I record [strings for a pop album] is not that different than what I do for a motion picture," Sides says. "The big live rooms we have sound so good that with the right section and the right setup and a pair of M-50s and the right spot mics, it sounds pretty amazing without having to work all that hard. It's one of those things where simplicity is really the way to go.

"With the smaller sections," he continues, "I set it up a little differently than with a larger orchestra. Typically, with David [Campbell], it will be like 12 violins, three cellos and three violas, so I end up making three rows of six: six violins, six violins and then the three violas and three celli in the last row.

"One of the challenges of recording a section like that is if you have your overall mics aimed at the first row of players, it ends up sounding like a few violins playing. With M-50s, which are actually fairly directional mics above 1k, if you aim past the front of the section, you end up getting a more unified sound. If what you're looking for is a more impressionistic sound, where you don't actually hear any one individual string but you really hear it as a group, I'll aim the M-50s more toward the last row. Then, what I'll usually do in a small section like that, I'll have three KM-54s for the L/C/R violins. If it's going to be 5.1, I'll put up a center M-50, plus I'll put up a couple of Schoeps omnis, sometimes left-right distant front, also left-right rear, depending on what perspective I want with the 5.1."

With the front M-50s, "Depending on the room, I'm usually about 12 feet in the air and sometimes as much as 15 feet—depending on the size of the section," Sides continues. "The bigger section I might split up in a more conventional fashion—say, four, four, four and four violins on the left; then four and two celli and four and two violas on the right; and the bass is in the center in the back. The other thing I do a lot of is if we're recording two basses, I usually record them in stereo with a couple of [Neumann] U47s because it sounds impressive in pop and they're also centered in the section, so if I

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Orchestral Recording

have it six, six and six [as in the Crow date], the two basses are dead center in basically a fourth row, so they're also being picked up evenly by the M-50s."

For spot mics, "I'll put a couple of 54s or omni 67s on the violas, and then I use a couple of 54s on the cello. The reason I use a 54 is because they have an incredibly smooth off-axis response. Usually, I'd put one per two cello; if it were four, I'd have two; if it were three, I'd have a left and right and have the mics a little farther apart and a little closer to the outside, because if they combine to mono, the center guy will be too loud."

When it comes time to mix, Sides says, "If it's a wide-open track with lots of space, I'll probably use much more of the overalls. Usually, I'll add a little viola, a little cello and not necessarily any of the close violin mics. But if it's a very dense track with multiple doubled guitar parts and lots going on, I'll probably need a little more of the close mics to fill in the distance. It always depends on what the track needs."

ROOM, ROOM, ROOM

Rodd, whose recent credits include DreamWorks' *The Madagascar Penguins in a Christmas Caper*, has also seen a lot of variations on the Decca Tree in the film scoring world. "Sometimes, you might see five microphones across the front, as well as spot mics. Every engineer has his own favorite way of doing it," he says. "In a good-sounding room, I'd say the room is probably going to be about 80 percent of the sound and the spot mics are more for presence than volume. On the Newman stage, for instance, depending on the score, the woodwinds often speak so clearly that you need minimal spot-miking. They're there for some presence and articulation." Rodd's favorite main mics are the Sennheiser MKH 800s, "and I've also been pleased with the Neumann 149s."

"Awhile back," Rodd relates, "I was recording a feature film score in a room that was more live than I would have liked, and the string section was proportionally a little bit small for the brass section. The players were all in one room, so I had to drop the spot mics a little bit closer than I might ordinarily, especially on the strings. I was aware of this going into it, so I was careful in terms of using the rejection side of the spot microphones in my favor and using a little bit of baffling, but still trying to use as few mics as possible. I guess I approached that session more like a TV date. In TV, you don't rely on room mics as much. With a smaller ensemble, in terms of speed and flexibility, it's



PHOTO: LARRY MAH

John Rodd favors a modified Decca Tree approach.

more about putting all the sections together and making sure that you can move quickly and balance things and not be reliant on the room sounding balanced.

"There are so many variables to consider before you start recording. Is there a huge dynamic range [in the music]? Are there featured soloists? Is there any musical element that's more important than anything else? Is it a lush pastoral score or more aggressive and edgy? Sometimes you have to pick which mics and mic placements are going to work for what the composer likes: Do they like an aggressive sound or a more lush sound overall?"

For an animated project called *Smile*, with music by Cody Westheimer, Rodd found himself recording a 45-piece orchestra at Capitol Studios A and B. "I put the strings and woodwinds in Studio A and then I put in the glass wall that divides A and B, and had the French horns, trumpets, trombones and tuba in Studio B. I put the conductor with his back to the glass wall that divided the two rooms," he says. "Depending on the writing of the music, the brass and so forth can overcome the smaller string section if they're all in one room. So the way I set it up, as it was a loud score, the brass could play as loud as they wanted and I could still have a refined string sound because the spot mics could be a little farther away from the instruments. It also really helped with editing because we could edit the brass differently than the strings as we had total isolation. Don't get me wrong—I'm a big proponent of having everyone in the same room at the same time, but with that particular size of an orchestra, that's a good way to work if you are at a studio like Capitol." ■

Blair Jackson is Mix's senior editor.

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EFFECT PLUG-INS COME OF AGE

BY STROTHER BULLINS

EQs: We all need them, and most of us have a lot of them—both in our racks and on our computers. Engineers have various criteria for choosing between hardware and software effects, ranging from value to convenience to, most importantly, sound quality, but even some self-professed analog processing devotees are finding it hard to resist the plug-in temptation. As virtual EQs sonically improve, they continue to offer ease of use and flexibility that their outboard ancestors just can't match.

"I'm more of an outboard gear guy, not really a plug-in guy," prefaces Neal Pogue, the Grammy-winning producer/engineer known for his work with OutKast and, most recently, Stevie Wonder. But he does have quite a few favored plug-ins in his arsenal. "When I use something," he says, "I use it because I really like it. When a plug-in version of something sounds *really good*, that's when I'll use it."

Jeff Coplan, producer/engineer/songwriter and owner of New York-based Subsonic Studios, admits he's turned into more of an "inboard guy." "There's no doubt that I'd prefer to use a good hardware-based EQ over any plug for the pure sound of it," he says. "However, the advantages of being able to automate your EQ

plugs are *huge*. Definitely the speed, recall factor and simplicity of working within my workstation are advantages."

Pogue and Coplan still regularly lean toward their favorite outboard EQs, even when considering the operational advantages that equalization within their workstations provide. "There's no plug-in I've heard that has the low-end punch of one of my Neve 1073s or 1081s, not to mention the beautiful highs of a Tube-Tech PE1C or even an Avalon VT-737SP," offers Coplan. "Even if I'm mixing directly in Pro Tools, I will always insert out to my hardware EQs for at least the kick, snare, bass and lead vocal."

But even this rule can be broken when the benefits of using plug-based EQ make the impossible happen. "I just finished mixing a record that I didn't track that had three—and sometimes four or five—lead vocalists per song," Coplan recalls. "Each had a different tone. Often throughout the song, they'd sing really hard to really soft, making their tone change dramatically. It would have been incredibly difficult to mix it without EQ plugs. Each track had to have its own EQ setting that often was automated to change throughout the song as their tones changed."

If you're considering going virtual

with your EQ, then check out the following plug-in guide. To keep this list somewhat concise, only what could be considered traditional—or operationally traditional—EQ apps are listed. None of the free (yet highly capable) equalizers bundled with DAW packages are here, nor are any virtual instrument add-ons, sound design tools with EQ parameters and so on—only products whose main purpose is equalization. Dig in!

ANWIDA Soft (www.anwida.com) offers a collection of graphic and parametric equalizers—including the GEQ15V 15-band and GEQ31V 31-band graphics—in a variety of bundle configurations. Most notable is the PEQ1V (\$69), a parametric EQ featuring a constant Q, minimum phase equalization algorithm. The PEQ1V includes 24-bit/96kHz audio support and 64-bit internal precision for its high/low shelving and four parametric peak/notch filter sections. Other features include parameter automation, preset change automation, factory presets and stereo output. Three operational formats—VST/Windows, VST/Mac OS X and SAWStudio—are offered.

Blue Cat's Music Software (<http://software.bluecatonline.org>) offers a half-dozen EQs designed for VST and DirectX



Opposite page, from left: McDSP Channel G, Sony Oxford EQ and Universal Audio Pultec Pro. This page, clockwise from top-left: Elemental Audio Systems Firnum, Waves Q-Clone, Wave Arts TrackPlug 5 and Massenburg DesignWorks MDW



platforms on Windows OS. Blue Cat's Liny EQ, a 9-band linear phase equalizer, offers a wide range (± 40 dB) of gain per band. Like all Blue Cat EQs, the Liny operates with no latency and features auto-gain compensation, "smooth update" mechanism for modifying parameters in real time, random preset of parameters and full automation support. Parametr'EQ is a 7-band parametric equalizer featuring a low-shelf filter, high-shelf filter and five boost/cut peak filters. It also offers a ± 40 dB gain range and wide bandwidth: 0.01 to 5 octaves. Both EQs are available in stereo and "widening" versions. Available for purchase directly from Blue Cat's Website, the Liny EQ, Liny Stereo and Liny Widening are priced at \$15, \$20 and \$30, respectively. The Parametr'EQ, Stereo Parametr'EQ and Widening Parametr'EQ are available for \$15, \$25 and \$35, respectively.

Bomb Factory's (dist. by Digidesign, www.digidesign.com) Pultec Bundle (\$595) is about as close as a discriminating Pro Tools-based engineer can get to Pultec equalizers without heat sinks or maintenance needs. The GUIs look and behave just like the tube boxes from which they were modeled. The three-EQ bundle—featuring re-creations of Pultec

EQP-1A and EQH-2 program equalizers and the MEQ-5 midrange equalizer—are built for use with Windows XP and Mac OS X-based Pro Tools DAWs, supporting TDM HD|Accel, TDM HD, TDM MIX, RTAS and AudioSuite systems. Featuring the VC5 Meequalizer, Bomb Factory's Joemeek Bundle (\$395) for Pro Tools is an affordable and flexible plug-in for Mac and Windows. Also including the SC2 Photo Optical Compressor, Joemeek Bundle's VC5 Meequalizer re-creates the EQ circuit in the original Meek-designed EQ, a treble and bass EQ with sweepable mids.

DUY's (www.duystore.com) MagicEQ (\$295) mastering equalizer is an extremely simple plug-in to use: It will automatically equalize a mix itself, allowing further user modification after the initial analysis. How does it work? Using three unique technologies—OFIR (Optimal Frequency Impulse Renderer), ASM (Adaptive Spectral Matching) and HAS (Historical Audio Statistics)—MagicEQ users click a Learn button, and the selected audio information will be analyzed. Afterward, the user can adjust the amount of EQ effect to be added to the original sound and make

further adjustments via four Spectral Atmospheres knobs. Five controls adjusting five bands—sub-low, low, mid, high and ultra-high—are also available to dial in exact desired EQ effect.

Audio production software company Elemental Audio Systems (www.elemental-audio.com) offers two EQ plug-ins: Firnum and Eqium. Both are Mac OS X and Windows XP-compatible and 88.2/96/192k-ready, and all native plug-in formats (Mac RTAS/VST/AudioUnits and Windows RTAS/VST) are included. Firnum is a linear phase EQ that "builds a complex FIR (Finnie Impulse Response) filter" to the user's specifications and is designed to not color audio via nonlinear phase shift. Its spectrum-matching feature allows frequency response to be analyzed and applied to another sound source. Two workspaces and comprehensive histories allow comparison of EQ settings, and adjustments of ± 18 dB are allowed. Unlimited bands

Beinhorn Says



"Royer R-121s and R-122s are essential to my guitar sounds. They give me something that no other mic has. I use a lot of microphones when I record, but if I pull the Royers out of the mix I really miss them. To me, that's the sign of a good mic.

"I used to avoid using ribbons on drums, but the SF-24 changed that the first time I used it. It attacks in the perfect place and interacts beautifully with the other mics on the kit. It adds power and richness to the drum tracks and seems to smooth out the other mics. Royers have become an indispensable part of how I record music."

Michael Beinhorn

(Producer - Soundgarden, Marilyn Manson, Red Hot Chili Peppers, Ozzy Osbourne)



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or filters are Eqium's appeal, which lets users create as many bands as needed. Features include boost/cut of ± 24 dB, two workspaces, filter graph zoom for detailed editing, flexible activating of filters on-the-fly and much more. Elemental's EQ Bundle featuring Firium and Eqium is priced at \$169 and is available directly from the company's Website.

Focusrite's (www.focusrite.com) Forte Suite (\$595) is essentially

a classic Focusrite Forte analog console for use in Pro Tools|HD Accel DAW systems up to 192 kHz. Along with a compressor, gate and expander, the Forte Suite offers the original 6-band equalizer from the Forte desk. The scalable plug-in offers a complete channel strip, a stereo version of every module and several 5.1 processing settings. TDM, RTAS and Audio Suite formats are supported.

IK Multimedia's (www.t-racks.com) T-RackS plug-in for Mac OS and Windows DAWs features four processors including a 6-band parametric equalizer, a stereo compressor/leveler, multiband master stereo limiter and an adjustable soft-clipping output stage. T-RackS' algorithms are based on analog circuitry, thus its vintage selection of sounds. In the latest version of T-RackS' EQ, full-band sweepable mid-bands are included, which allow both peaking filters to cover a 20 to 20k Hz frequency range. T-RackS lists for \$399, while a complete IK Multimedia bundle featuring T-RackS with AmpliTube and SampleTank 2 XL is priced at \$799.

Kjaerhus Audio (www.kjaerhusaudio.com) has a full line of Windows-only



ANWIDA Soft PEQ1V parametric EQ

audio plug-ins, including two EQs. The stereo GEQ-2 (\$98) is a 5-band parametric with a selectable shelf on the high and low band and low- and high-cut filters with selectable slopes. Four EQ "styles" are provided. Other features include full VST automation, sampling rates to 192 kHz, 64-bit internal processing, A/B comparison, separate L/R adjustment and no latency. The Classic Series EQ (available for free) is a simple 7-band stereo equalizer featuring Warm and Saturation algorithms. Stereo link, VU meter, full VST automation and separately adjustable L/R channels are included. Both models are available exclusively at the Kjaerhus Website. A trial license period of 14 days is available.

Levelground Media (www.levelgroundmedia.com) offers a unique EQ plug-in called the CrunchEQ, which combines a 10-band graphic and 5-band parametric within one equalizer. The CrunchEQ's Crunch feature allows the application adjustment of mild distortion algorithms on any given signal. Other features of this Mac OS X-based plug-in include a global sharpness adjustment on the graphic EQ; frequency, sharpness and amplitude ad-

justment on the parametric; and a Curve Excenuator for the application of different EQ styles to audio samples. The CrunchEQ V. 1.1 DSP is \$79.

Attention DAW tweekers: Massenburg Design-Works (www.massenburg.com), George Massenburg's plug-in company, has an EQ just for you. The MDW (\$795) high-resolution parametric EQ for Pro Tools|HD features 48-bit/96kHz, "double-precision" processing, wide frequency



IK Multimedia T-RackS (Mac OS X and Windows DAWs)

selection from 10 to 41k Hz, selectable bands, constant shape reciprocal curves and an intuitive design.

McDSP's (www.mcdsp.com) Channel G (\$995) and FilterBank (\$495) are flexible options for those looking to emulate EQ from basically every equalizer in existence. The stand-alone EQ configuration of Channel G offers modes styled after API, SSL and Neve channel EQs, while FilterBank allows the emulation of any shelving EQ's response curves. The Channel G EQ (designed to be a standard channel strip path for the Digidesign ICON console) offers five bands of parametric equalization, switchable shelving, gain ranges of ± 18 dB and two multimode filters. Other parameters include an expander/gate, a compressor/limiter, filters and a 5.1 compressor/limiter, among others. FilterBank offers 20 plug-ins of 2, 4 and 6-band EQs and filters in both mono and stereo versions. With all EQ and filter design parameters fully user-adjustable, FilterBank can model existing processors or be used for custom effects.

Version 2.1 of Metric Halo's (www.mhllabs.com) ChannelStrip—featuring 6-band fully parametric 48-bit EQ (64-bit for native) and six selectable filter band types—is a compatibility update that now operates with Pro Tools 7 TDM, LE and M-Powered systems. ChannelStrip for Pro Tools 7 is available directly from Metric Halo's Website for \$699, TDM/RTAS; and \$345, native.

Nomad Factory's (www.nomadfactory.com) Essential Studio Suite (\$379) and Blue Tubes (\$399) bundles include one and three EQs, respectively. In addition to eight other plugs, the Essential Studio Suite features the Essential Graphic EQ, a 15-band equalizer with adjustable bandwidth and brick-wall limiter. The bundle is Mac-based and TDM, RTAS, VST (Mac/PC) and AudioUnits-compatible. The Blue Tubes bundle includes 16 tube-style plugs for PC and Mac OS X DAWs that feature intuitive GUIs. The BT Equalizer PEQ-2A offers low-shelf, high-shelf and mid-peak EQ controls. Each band offers ± 20 dB boost/cut and selectable frequency. The BT Equalizer PEQ-2B is a "classic '60s EQ" with a low-frequency section allowing low-shelf boost and attenuation. Its high-frequency section provides boost/cut and bandwidth controls for a center frequency. The BT Equalizer PEQ-2C is a classic midrange EQ with high/low peak boost controls, a mid-frequency attenuator to create a vintage EQ curve.

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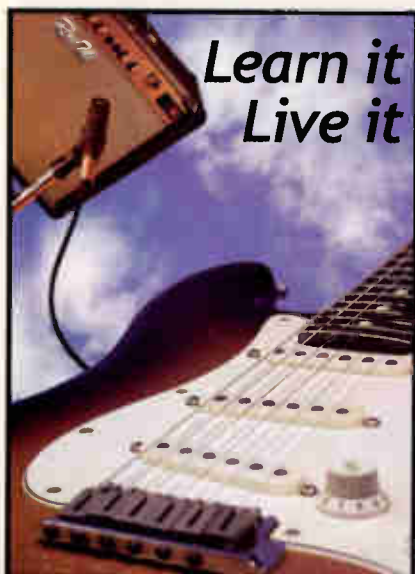
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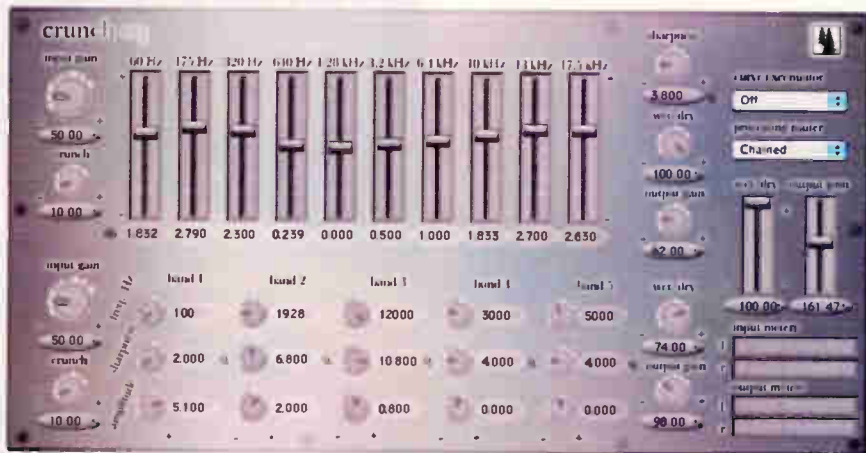
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Levelground Media CrunchEQ combines a 10-band graphic and a 5-band parametric in one equalizer.

Professional Sound Projects' (www.pspaudioware.com) MasterQ (\$149), a parametric equalizer designed for mastering applications, is also useful on individual instruments. The MasterQ features seven filters with adjustable frequency and Q over a wide range and a detailed display of the EQ curve and each filter's setting. The MasterQ operates at sampling rates from 44.1 to 192 kHz, and is available for VST/DirectX for PC, and AudioUnits, VST and RTAS for Mac OS X.

The Rane Series Pro Tools|HD TDM and Digidesign VENUE plug-ins from Serato (www.serato.com) are based on Rane's hardware EQs for live sound. The Rane Series Graphic EQ offers the features of the DEQ 60/60L in an easy-to-use GUI, with 31 bands of equalization, three bands of overall tone control, a low- and high-cut filter pair and a color-coded response graph for overall gain and phase change display. The Rane Series Parametric EQ re-creates the comprehensive feature set of the PEQ 55 and is similarly intuitive. Like the PEQ 55, this plug offers 10 bands of parametric EQ, movable from 12.5 to 20k Hz, all independently switchable from high to low shelf or bell filters. The plugs support sample rates up to 192 kHz and can be used in mono, stereo and multi-mono modes.

Originally designed for use within the OXF-R3 digital console, the Sony (www.sonyplugins.com) Oxford EQ (\$850) is available as a plug-in for Pro Tools|HD users. A 5-band

equalizer, the Oxford EQ includes selectable shelf settings on low- and high-frequency sections, separate variable slope lowpass and highpass filters, four different EQ types and a seemingly endless list of features. An optional GML 8200 Emulation, co-designed by George Masenbourg and Sony, offers the performance of GML's original hardware-based 8200 parametric EQ.

SpinAudio Software (www.spinaudio.com), makers of Windows plug-ins with flexible GUIs, offers the SpinEQ, a multiband parametric stereo equalizer available as a 4- and 10-band version. Operational in four modes—Mono, Stereo Equal, Stereo-Linked and Stereo-Free—the SpinEQ features five filter types per band, along with filter frequency, gain and Q adjustment. Its Visual Equalizer Control feature provides visible feedback and easy control over various filter parameters. The SpinEQ is a part of



URS graphic EQs. Top: the A10 Series 10-band equalizer; bottom: the N12 Series Classic Console 12-band equalizer

the Essential Plug-Ins Bundle, available directly from SpinAudio for \$95.

Universal Audio (www.uaudio.com), known for modern recreations of classic outboard gear, also makes plug-ins designed to appear *and* sound as if their DAW-based users are clicking the large black knobs of a vintage audio processor. Case in point: the Pultec EQP-1A Program Equalizer and Pultec Pro. The EQP-1A (\$249 for TDM) is a re-creation of the original Pultec Program EQ, while the Pultec Pro (\$149 for UAD-1) combines the Pultec MEQ-5 midrange EQ and the EQP-1A into one single plug-in. Either EQ section within the Pultec Pro can be separately enabled/disabled. The new Precision EQ plug-in (\$199 for UAD-1) is a stereo/dual-mono 4-band parametric equalizer and highpass filter designed for program material use. Four bands of filtering are grouped in overlapping pairs: two for lows, two for highs. A ± 8 dB shelving or peak/notch filter is available for each band, with five peak/notch responses per band. The Cambridge EQ (\$249, TDM; \$149, UAD-1), a "console-style" 5-band equalizer, features switchable parametric or shelving parameters and two high- and lowpass filters. Advanced editing features are included, as well as detailed adjustment of gain, resonance and each frequency band on its graphic "front panel" display. All of these EQs come together in the UAD-1 Ultra PAK bundle for \$1,199. (The Pultec Pro, Precision EQ and Cambridge EQ can be selected for the UAD-1 Flexi PAK, which offers fewer, but interchangeable, plug-in options for \$899.)

For those who crave classic API, Pultec and Neve EQs for their DAW-based projects, URS (www.ursplugins.com) has plenty of options. The URS A Series (\$499, TDM; \$249, native) is a digital re-creation of the API 550B 4-band equalizer, and the complementary A10 Series (\$499, TDM; \$299, native) is an API-style, 10-band fixed EQ. The URS FullTec Program EQ (\$499, TDM; \$249, native) is—surprise, surprise—a Pultec-style 5-band equalizer that accurately re-creates the desired parameters of the Pultec EQP-1. URS' N Series—the "N" stands for Neve—features two great EQ plugs: the 5-band "1084-style" Classic Console Equalizer (\$499) and Classic Console 12-Band Equalizer (\$499, TDM; \$299, native). URS also offers the S Series Classic Console Mix Equalizer (\$499, TDM; \$249, native), which—you guessed it—was modeled after a classic SSL G Series console EQ. The S Series is a 6-band EQ with low- and highpass filters.

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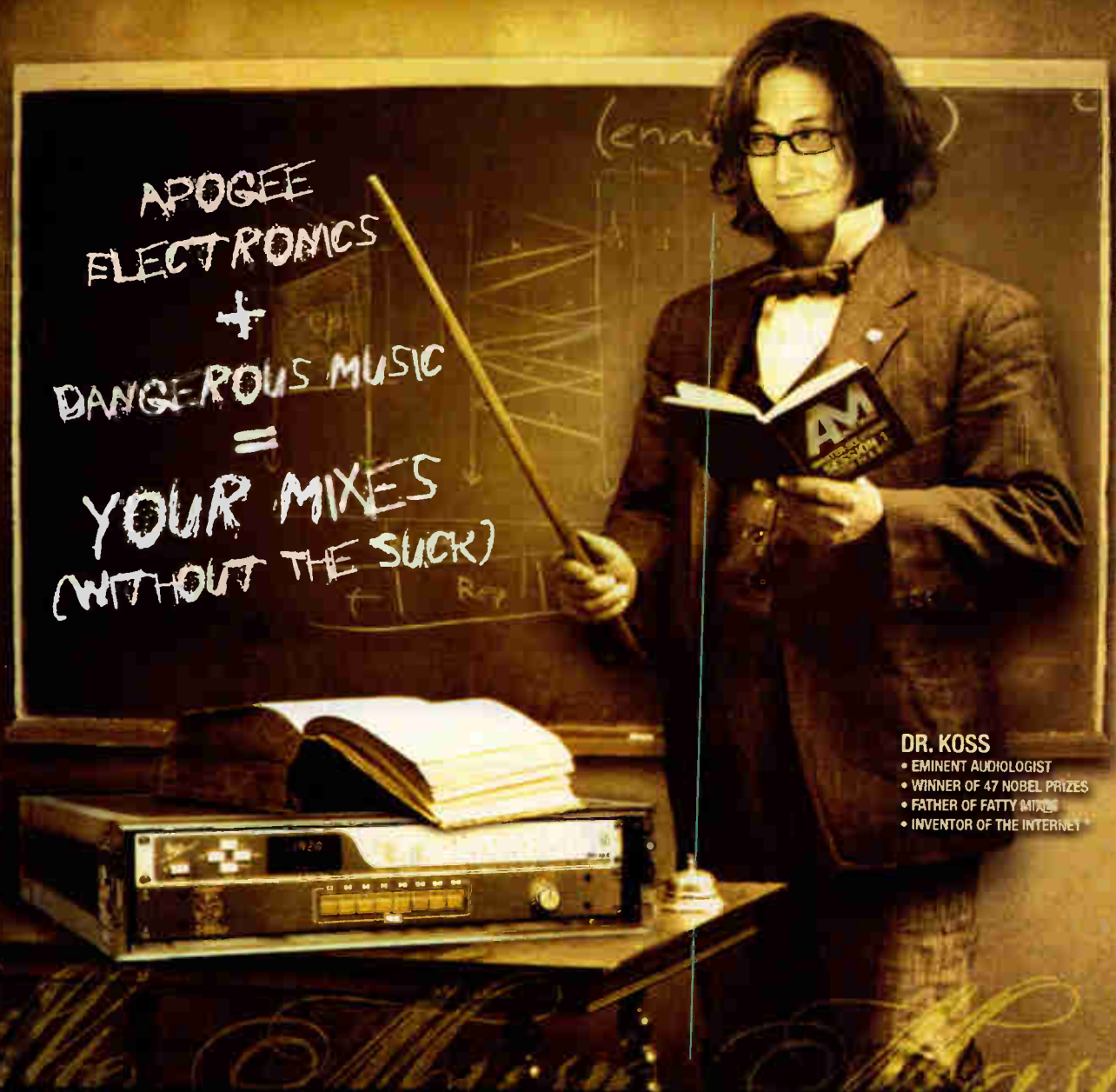


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For those wanting all of the above, URS' Everything EQ Bundle V. 4 features all that and more for \$2,299, TDM; \$1,149, native.

Voxengo (www.voxengo.com) offers the EssEQ, a free 7-band graphic equalizer that uses FIR filtering. If you get hooked, Voxengo offers two other equalizer plug-ins for purchase. The CurveEQ (\$99) is a mastering linear phase equalizer offering a freehand EQ curve drawing mode, I/O spectrum plots, "vintage" processor, a compressing saturator and more. The GlissEQ (\$79) is an analog-style equalizer featuring an intuitive GUI, five filter bands, eight filter types and a real-time spectrum analyzer. Voxengo plug-ins are available directly from the company Website.

Offering an all-inclusive EQ, compressor and gate channel strip for VST, MAS, AudioUnits, RTAS and DirectX host apps is Wave Arts (www.wavearts.com) with its TrackPlug 5 (\$174), a straightforward GUI providing up to 10 bands of 64-bit equalization. Each band offers a parametric, low/high shelf, low/band/highpass or notch filter. TrackPlug 5 can be fully automated via its host and comes with 47 custom presets.

Q-Clone (\$1,000, native and TDM), Waves' (www.waves.com) latest plug-in, lets users capture the sound of their favorite hardware equalizer and then freely use it throughout their DAW sessions as if they had dozens of that same piece of hardware EQ. Q-Clone uses an actual outboard EQ—the user physically adjusts the EQ settings—and a Q-Capture function constantly samples the hardware unit's sound, tracking all moves in real time. Also offered by Waves are the Q10 (\$300, TDM; \$1,000, native and HTDM) Paragraphic Equalizer, Renaissance Equalizer and the C4 Multiband. The Q10, a mono/stereo EQ, offers one to 10 bands of equalization, five types of filters and a library with more than 200 equalization setups. The Renaissance (\$400, TDM; \$200, native) is a vintage-style EQ plug that shines in both TDM and native applications, and offers standard features such as simultaneous multi-parameter adjustment. The C4 Multiband (\$800, TDM; \$400, native), a 4-band fully parametric compressor/expander/limiter/EQ, is designed based on the principles of the Renaissance Compressor. ■

Strother Bullins is a North Carolina-based freelance writer specializing in the professional audio, music and entertainment industries.

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ONYX 80 Series

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Right from the start, we designed our new Onyx 80 Series Premium Live Sound Consoles to provide superior value in every detail—ergonomics, circuitry, performance, sound, and yes, even knobs.

Our industrial design team started with 10 different knob prototypes. Their criterion was both comfort and precision, with feel, shape, and ergonomics at the top of the list. After two months, they came up with a tapered design that felt just right, and allowed users to “feel” the setting without having to look at the knob itself.

This exacting development process was employed throughout the entire Onyx 80 Series Console. We started with the highest quality analog components available—from premium op-amps to custom chip sets costing exponentially more than previous designs. Most notably, we developed all-new Onyx mic preamps and Perkins EQ circuitry from the ground up—specifically for optimum performance within the total Onyx system.

As a result, Onyx mic preamps deliver outstanding, verifiable specs like 123dB total dynamic range, -129 dBm Equivalent Input Noise, and 0.0007% Total Harmonic Distortion. And our all-new Perkins EQ circuitry—based on the Wien Bridge topology found in hallowed “British” desks of the ‘60s and ‘70s—offers all the warmth of British EQ, with greater boost/cut capabilities.

Additionally, the Onyx 80 Series offers features never before found in its price range. Its eight Auxiliary sends are logically divided into pairs, with each pair assignable as pre- or post-fader. Plus, every pair offers a Stereo button that reconfigures the Aux sends to perform level and pan functions for simple and intuitive control of up to four stereo In-Ear Monitor (IEM) mixes.

Of course, all these features are for naught if a live console is not built to last. So we designed the Onyx 80 Series console upon a tough-as-nails modular monocoque design, reinforced with beefy aluminum extrusions and strategically placed steel bulkheads. The design was torture-tested for impact, shock, heat, vibration, humidity—even dropped repeatedly from a height of three feet. In other words, it's ready for the real world.

Introducing the new Onyx 80 Series 2480, 3280, 4080 and 4880 Premium Live Sound Consoles—the best value in the history of live sound—from Mackie, of course.

Onyx mic preamps improve upon Mackie's hallmark XDR design with increased headroom and better RF rejection.

All-new Perkins EQ circuitry provides the finest musicality of British EQ circuitry but with wider boost/cut capabilities.

The Onyx 80 Series offers extreme chassis rigidity thanks to a modular monocoque design reinforced with beefy aluminum extrusions. Even the nuts are aircraft-grade.



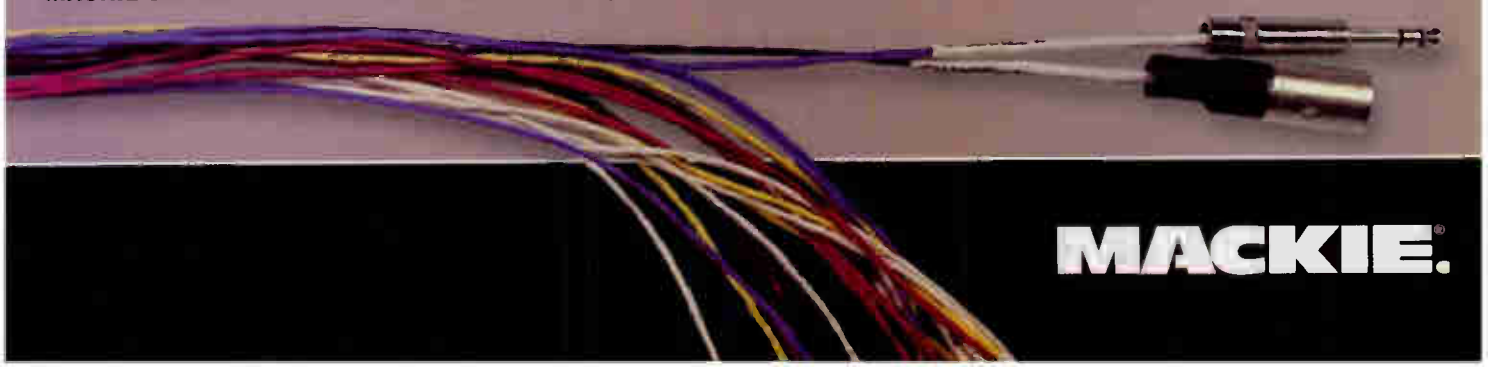
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Networked Amplifiers For Live Sound

POWER, CONVENIENCE AND TOTAL CONTROL

BY STEVE LA CERRA

These days, just about everything from your DVD player to your coffee machine can be remote-controlled, so why not your power amplifiers? Networked communication for power amp management can make life a lot easier when configuring and tuning industrial sound systems, touring P.A. systems and club/stadium/theater installations. Initially, network communication circuitry was offered as an add-on, but many amplifier manufacturers are now designing their amps with onboard data communication.

Most amplifier networks route control data, but several can route both audio and control information. Many manufacturers use Ethernet hardware, providing a familiar, off-the-shelf interface, with straightforward cabling requirements. The PC can be located anywhere in a venue, yet still allow adjustment of functions as simple as muting or gain, or as complex as multi-band equalization, delay and DSP. As network communication is two-way, amps can "report" various operational data back to the computer in real time, such as input/output clipping, thermal status, output voltage and status of protection circuitry. Complex amplifier networks can support hundreds of power amps (each with a unique identity), all under the control of any number of computers. Typically, the PC can be disconnected once the system is configured, preventing inquiring minds from making unauthorized tweaks or "improvements."

Listed alphabetically, here's a look at



Crown I-Tech 8000 rear panel

the latest top-of-the line networked amplifiers for live sound applications. We've also included a synopsis of current offerings in network protocols—both proprietary (company-specific) and general-purpose approaches supported by several amp manufacturers.

The Ashly Audio (www.ashly.com) Protea™ Enabled Series 3800 (\$2,900) is a high-power, high-efficiency amplifier that can be controlled and monitored via built-in Ethernet using Protea software, providing access to input attenuation, channel mute, channel polarity, output voltage and current, clipping, temperature and remote power on/off. Output is rated 1,900 watts stereo into 4 ohms or 3,000W bridged mono into 4 ohms. Inputs are Neutrik combo connectors and 6-pin Euroblock; XLR male connectors loop out to additional amps. Onboard analog processing includes a subsonic filter, clip limiter and input-sensitivity selector.

All amplifiers in Ashly's PE Series accept Protea DSP option cards (\$900 each) with a SHARC 32-bit/96kHz processor, enabling 24-bit AD/DA, and analog and digital (AES-3) inputs. Ashly's DSP library includes EQ, filters with slopes up to 48

dB/octave, delay, compressor/limiter, gate, signal generator and matrix routing.

The VX880 (\$2,745) is the flagship model of a new contracting series of amplifiers from BGW (www.bgw.com). The VX880 is capable of putting out 900W per channel into 8 ohms (2,450W bridged) and 1,400W at 70 volts (no transformers required). In addition to balanced XLR and Euroblock inputs, the rear panel features barrier strip output terminals, precision 1dB stepped attenuators for each channel and a switched 30Hz highpass filter (12 dB/octave). Safety features of the VX880 include quiet turn on/off, short protection, and independent DC and thermal-overload protection on each channel, which automatically protects one channel while allowing the other to continue operation (even if one channel is down). A rear panel FaastLink port allows the VX880 to be used with a CobraNet interface for audio routing and amplifier control.

Camco Audio's (www.camcoaudio.com) Vortex Series uses a switched-mode power supply to deliver extremely high power levels while reducing weight and dimensions. The two-space Vortex 6 (\$4,905) has a rated output level of 2,300W into 4 ohms/both channels driven and 6,600W into 4 ohms/bridged. Protection features include emergency shutdown in case of extreme malfunctions, overvoltage protection of up to 400V, thermal protection for the transistors and hum-free operation in case of extreme undervoltage. Front panel LEDs show operational



The Lab.gruppen C 68:4 can be configured for low-impedance or 70/100-volt apps via rear panel DIP switches.



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status and functions; all indicators and controls are available for adjustment via a remote-control network.

Camco's new UCA DSP-Module allows Vortex amplifiers to become a Universal ControllerAmp with 99 network addresses that are accessible by using the amplifier's volume controls. Parametric EQ, delay, filters, crossover and limiters are implemented via the Camco WinCai application. The UCA module is fully integrated with the amps, and data exchange is achieved via internal interfaces.



Ashly Audio Protea Enabled Series 3800 can be controlled/monitored via built-in Ethernet.

The Crest Audio (www.crestaudio.com) CMi 2208 amp works with the company's Nx CobraNet-8™ control module using Crest NexSys 4 and Peavey MediaMatrix

MWare™ software for advanced control and audio routing. The Nx CobraNet-8 module fits into a CMi 2208 rear bay, supporting all NexSys functions, DSP and CobraNet

Understanding Network Protocols

Networking and interfacing amplifiers is still a relatively new topic to most audio pros. The following are capsule summaries of control protocols used in live sound amplifiers. All companies listed here will provide more detailed information such as specs, white papers and other technical data on request.

Ashly Audio Protea: Running on any PC, Protea Software allows setup, control and monitoring of PE Series amplifiers and Protea processors using standard Ethernet hardware and manual or auto-IP configuration. Monitoring and control functions include input attenuation, mute, channel polarity, output voltage, clipping, temperature and power on/off. PE Series amps accept Protea DSP option cards, which use SHARC processors to operate from 48 to 96 kHz with a 24-bit AD/DA.

Aviom A-Net Pro64: Designed for use with Aviom's (www.aviom.com) distributed audio products and peripherals, as well as OEM products to other manufacturers, A-Net™ Pro64 supports up to 64 bidirectional audio channels (24-bit/48 kHz) over Cat-5 cable. The system can be expanded in parallel for 128x128-channel support, and includes bandwidth for handling multiple streams of non-audio data, such as MIDI, GPIO and RS-232.

Camco Adaptive Intelligence (CAI): Camco's amplifier networking and remote control can run from any Windows PC using an Ethernet network card. The company's WinCai software communicates with an EtherCai Interface, supporting connections for up to 32 amplifiers. Connection is via CAI protocol and RS-485, fully compatible with all CAI-equipped amplifiers and Nexo NX241/2 controllers.

Crest NexSys: NexSys® for Windows allows Crest CK and CKi amplifiers to be controlled and monitored via a PC. NexSys features output and system fault monitoring, speaker control, real-time control of amplifier and signal processing settings, and virtually unlimited snapshot and automation capabilities, as well as programming facilities for Crest's NC-Class modules, such as the NC-DSP input signal processor or NC-SLM load monitor.

Crown TCP/IQ: Crown's IQ™ network provides remote control and status monitoring of power amplifiers from central and/or remote locations using IQWic (IQ for Windows) software running on a host PC. IQ Networks perform DSP, automatic mixing, routing, and system and load monitoring. Crown amplifiers featuring PIP slots can accept the IQ-PIP-LITE module for connection to a 100Mb Ethernet network for use with IQ and CobraNet.

EtherSound: Invented by DigiGram and supported by numerous manufacturers, Ethersound (www.ethersound.com) provides bidirectional, low-latency transmission of synchronized audio channels and control data over standard Cat-5/6 Ethernet. Up to 64 channels of 24-bit/48kHz PCM audio, plus embedded control and monitoring data, are transported via a single cable.

Harman HiQnet: HiQnet™ communications protocol is shared by Harman Pro (www.harmanpro.com/hiqnet) brands including AKG, BSS, Crown, dbx, JBL, Lexicon, Soundcraft and Studer. An entire HiQnet system can be configured and controlled using Harman Pro's System Architect software. The HiQnet protocol is capable of wrapping around the transport medium employed by third-party networked audio protocols such as CobraNet, and supports up to 64 channels of streaming audio.

Lab.gruppen NomadLink: This closed-loop network facilitates control of up to 60 amplifiers. The NLB 60E serves as the bridge between Lab.gruppen's C Series amps and Ethernet using standard Cat-5 cable for communication of up to 1,000 feet. Local monitoring and control of the amplifiers are possible via the NLB 60E's front panel or via PC. DeviceControl software facilitates setup, monitoring and control of C Series amps, automatically generating a list of networked amps and channels.

Peak Audio CobraNet: Peak Audio's (www.peakaudio.com) CobraNet is open to any manufacturer that wishes to license the technology for use in its gear. CobraNet has the capacity to carry 64 channels of 48kHz/20-bit audio, plus control data over a single Cat-5 cable. CobraNet is currently supported by Crest, Crown, Peavey, QSC and Yamaha.

Peavey MediaMatrix: MediaMatrix™ now encompasses more than 16 products. The audio system is contained in the MediaMatrix frame, processed by a DSP farm of multiple digital processing unit cards, replacing mixers, routers, compressors, equalizers and crossovers in conventional audio systems. Larger MediaMatrix systems may incorporate CobraNet for routing digital audio or the XControl® Series of programmable, flush-mount control panels.

Powersoft PowerControl: The PowerControl System is designed for monitoring and amplifier control in real time. Main system components include PowerControl Manager software (running on any PC), a PowerControl hub unit and a PowerControl board installed inside the amplifier. A single PC can manage up to 99 units with the provided software.

QSCControl.net: This is QSC's latest network for control, processing and amplifier monitoring of the company's BASIS and next-generation RAVE and DSP products from a single graphic software interface. Multiple networked computers can control and monitor all devices simultaneously. QSCControl.net supports amplifier and loudspeaker control, monitoring and protection, as well as CobraNet for up to 32 channels of audio I/O.

Yamaha NetworkAmp Manager: NetworkAmp software for Windows combines with Yamaha's ACU16-C amp control unit to instantaneously relay and handle a variety of crucial data concerning the connected amplifiers and speakers through the network using the DATA ports on each connected unit. A single ACU16-C can control up to 32 separate PC-1N Series amplifiers. Adding the optional NHB32-C network hub/bridge facilitates monitoring and control of the entire system via CobraNet.

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digital audio I/O on a single Cat-5 Ethernet cable. A four-character LED allows easy setup, control and monitoring of up to eight CobraNet audio channels from the rear panel. DSP options for the Nx CobraNet-8 include delay, EQ, compression/limiting and crossover. Amplifier monitoring includes ACL™ (Active Clip Limiting), IGM™ (Instantaneous Gain Modulation), I/O gain, DC, thermal protect, fault, mute, Ethernet data and link statuses. The CMi 2208 is rated at 150W/side into 4 ohms, 300W bridged into 8 ohms and 200W/channel at 70V.

Crown's (www.crownaudio.com) I-Tech 8000 (\$7,685) is a 2-channel amplifier employing patented Class-I (BCA®) circuitry that combines high output power, low AC current drain and a lighter weight package. A regulated power supply delivers full power regardless of mains voltage from 120V to 277V, 50 to 60 Hz. The I-Tech 8000 features AES/EBU digital audio input and employs onboard DSP with 24-bit/96kHz AD/DA converters for a wide array of signal processing. DSP is performed by the latest 32-bit SHARC digital processors from Analog Devices and includes 64 assignable filters with nine different filter types. User-created and factory-designed DSP presets can be accessed via the front



Yamaha PC9501N's rear panel features balanced XLR and Euroblock connectors.

panel. A CobraNet digital audio option integrates TCP/IQ and CobraNet digital audio on a single network connection. Capable of delivering 2,100W/channel into 8 ohms/stereo, the I-Tech 8000 is fully compatible with the Harman Pro HiQNet and the Crown TCP/IQ network.

Distributed by TC Electronic, Lab.gruppen's (www.labgruppen.com) C 68:4 (\$4,895) provides four channels of amplification, each with a maximum output of 1,700W at 4 ohms. The amp may be configured for use in low-impedance or 70V and 100V applications via rear panel DIP switches, and permits individual channel adjustment of maximum voltage peak output and gain. The C 68:4's four channels may be bridged in pairs of two for increased output (2,400W at 4 ohms, two channels driven). Balanced input is on 3-pin Phoenix connectors, while output is

on terminal strip connectors. Lab.gruppen's patented Class-TD and regulated switch mode power supply enable the C 68:4 to combine efficient high-power output with reliable operation.

As with all Lab.gruppen C Series amps, the C 68:4 incorporates an integrated interface for use with the company's NomadLink® network. Using NomadLink and DeviceControl software, C Series amplifiers may be controlled and monitored via PC.

The MC1250 from MC² Audio (www.mc2-audio.co.uk) is a stereo unit offering 1,250W/side into 4 ohms or 3,600W mono bridged. The three-rackspace unit features complementary Class-A/B bipolar outputs, with a unique floating drive stage. Its load, temperature and operating parameters are continually monitored; in case of overheating, the power supply reduces to a safe



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level, protecting the unit without shutdown. Balanced XLR inputs with parallel output connectors are standard, as are binding post outputs; a 24dB/octave crossover card option is available. Other features include quiet variable-speed fans, a user-selectable clip limiter, dual peak meters, independent/stereo-linkable level controls and a 9-pin D-sub connector for full bidirectional control via RS-485.

At the head of the Digam K Series from Powersoft (www.powersoftaudio.com) is the K 10, a 2-channel amplifier with a max power output level of 4,000W into 4 ohms/stereo and 12,000W at 4 ohms/bridged mono. Intended for touring and installations, the K 10 employs an advanced switch-mode power supply for high performance in a single-space rack chassis. A front panel interactive LCD shows amplifier status, including load impedance, output power, mains voltage and current, and temperature. In addition to digital gain control, the K 10 features built-in (defeatable) clip limiters, user-defined maximum output power per channel and input sensitivity. An optional PowerControl-Module interface card mounted inside the unit provides an RJ-45 on the rear panel for connection to an RS-485 network.

Designed for permanent installs where space is at a premium, QSC's (www.qscaudio.com) CX168 (\$2,450) is an 8-channel amplifier delivering 90W/channel at 8 ohms. Each pair of channels may be bridged to configure the amplifier as a 4, 5, 6 or 7-channel unit. Like the entire CX Series, the CX168 includes DataPorts for remote amplifier management or signal processing, as well as QSC's PowerWave technology for reduced size and weight. Selectable highpass filters protect speakers and prevent speaker transformer saturation with minimal effect on program material, while front panel LEDs indicate signal, clip, bridged mono and parallel input status. The CX168 accepts audio input via rear panel Euroblock or DataPort connectors. An RS port connects the CX168 to a CM16a amplifier network monitor for remote control. The DataPort enables using the CX168 with a variety of QSC expansion modules such as the DSP-3, which adds two channels of independent signal processing.

The PC9501N (\$1,699) is the top of Yamaha's (www.yamaha.com) PC-1N Series of networked amplifiers. The PC9501N provides stereo, parallel and bridged-mono output modes, delivering 925W/channel into 8 ohms/stereo and 4,600W bridged mono at 4 ohms. Weighing less than 29 pounds, the PC9501N employs a switching regulator that yields a more stable and balanced supply of voltage and current, and eliminates fluctua-



QSC CX168 includes DataPorts for remote amplifier management or signal processing.

tions in output level. Each channel features a 31-position input attenuator, highpass filter and 10-segment LED meter. Rear panel input is via balanced XLR and Euroblock connectors with binding post and Speakon output connectors. Dual RJ-45 terminals are included for networking the PC9501N via

CobraNet with Yamaha's ACU16-C amplifier control unit and NetworkAmp software. ■

In addition to contributing to Mix magazine, Steve La Cerra is an independent engineer currently mixing front of house and tour-managing for Blue Oyster Cult.

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Angelo Badalamenti

A Passion for Improvisation

Angelo Badalamenti is one of the most original musical voices in film. The Italian-American composer and longtime David Lynch collaborator bends the rules of composition to create his signature scores, moving from the dark, moody tones of *Mulholland Drive* to the percussive playfulness of *Secretary*, playing chords against each other in an unorthodox fashion or sitting down with directors to compose music for films before they are shot. Simply put, he is a rare visionary for whom music flows purely and naturally.

For many, Badalamenti's sound is best identified with haunting, eerie synthscapes that get under your skin, reminiscent of ambient Brian Eno, Harold Budd or early Tangerine Dream. His work has graced television programs, classical venues and even the Summer Olympics in Barcelona. The director himself traces his music's dreaminess to the song "Mysteries of Love," which Julee Cruise sang for *Blue Velvet* in 1986. "That song actually started a thing and a feel," recalls Badalamenti. "I used that as a springboard and went from there."

Another core element: Badalamenti's older brother is into bebop and plays the trumpet in much the same vein as Miles Davis, so these influences seeped into Badalamenti's mind at a young age, later manifesting themselves in scores for films such as *Twin Peaks: Fire Walk With Me*. "Jazz was a part of my life, but composers for film really have to do everything," stresses Badalamenti. "I did *Christmas Vacation*. There's no jazz in that. People who associate me with just dark, bittersweet, tragically beautiful [should] listen to *A Very Long Engagement*. It's a very beautiful, romantic score, yet it still has the 'Angelo

Badalamenti' thing, whatever that is. I can't help myself. It has to be that."

The Brooklyn-bred Badalamenti studied at the Eastman School of Music in Rochester, N.Y., and then the Manhattan School of Music, where he received master's degrees in composition, French horn and piano. He taught junior



high school for five years and worked as an arranger/songwriter for performers such as Shirley Bassey, Mel Tillis, Nancy Wilson, Patti Austin, Melba Moore, Roberta Flack and Nina Simone. He began scoring films under the name Andy Badale in 1973 with *Gordon's War*.

Badalamenti's big break came in 1986 when he was hired by Lynch as Isabella Rossellini's vocal coach on *Blue Velvet*. He ultimately scored the film and made a cameo as piano player Andy Badale in the jazz bar The Slow Club. *Blue Velvet* opened doors for Badalamenti, and he has since scored all of Lynch's film and television works. *Twin Peaks* proved to be a breakthrough: The soundtrack won him a BPI Album Award, BFI Award and a Grammy Award, while the soundtrack album went Gold in 15 countries.

His later movies have also been heaped with accolades, with *Mulholland Drive* receiving Golden Globe, BAFTA and AFI nominations, and *The Straight Story* also nabbing a Golden Globe nomination. He won a BAFTA Award and a Film Critics Online Society Award for work on Paul Schrader's *The Comfort of Strangers*, while his soundtracks for two Jean-Pierre Jeunet movies, *A Very Long Engagement* and *The City of Lost Children*, were each nominated for a Cesar Award (French Oscar) for Best Original Score. He has also won eight ASCAP Awards.

GETTING IN EARLY

While Badalamenti's career has moved in many directions, at the heart of his work lies one driving motivation: a passion for improvisation. He does not like to just sit



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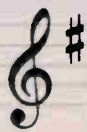
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World Radio History

and watch a film and score to picture; instead, he likes to speak with directors about what their stories and characters mean to them. He often sits down with directors before they shoot their movies.

"It started with David Lynch, composing before movies are shot," reveals Badalamenti. "He would simply talk to me about his next project verbally and describe what he was thinking about and the characters. We would be next to the keyboard, and I would just start creating and we would record it. And—boom—he would start seeing pictures. We would do hours of it. He would wind up using [a lot] just from that original meeting."

The concept started when the two were working on *Twin Peaks*. "He was describing Laura Palmer, this lonely girl coming out of a dark wood, and an owl in the background," illustrates Badalamenti. "We started playing with that ominous thing that everyone associates with *Twin Peaks*, and David was like, 'That's it, that's it! Just keep it going.'

"You just translate words into music," the composer continues. "That was the first example of it, and then it took awhile working with other directors to do that. But in

the past four or five years, I've almost been doing that exclusively. Of course, you do a lot of work afterward on your own, as well, and there's always changes, but it's a terrific way to work. It just makes it very exciting

You get those good vibes from a person that's lived with a project so long, and then you know if you're on the same page or not. Just sitting next to a person and talking like that, it seems to come.

and fun for both director and composer."

When director Walter Salles asked Badalamenti to score the psychological thriller *Dark Water*, the duo met beforehand to discuss music. "He said what he

really wanted on *Dark Water* was [for] the music to help him transmit the idea of thought and solitude and loneliness and not be overly menacing," the composer says. "Water is actually a character of the film, and it's like that space between natural and supernatural. These were the kinds of things he was telling me. Then I would add eerie sounds mixed in and develop them as the piece progresses into a sense of angst.

"He talked very consistently and quietly to me for 25 minutes," he continues, "and in those 25 minutes, he went through the different characters. As he was talking, I kept playing and he was getting into it. I recorded just 25 minutes, and we were able to pull the three main themes that wound up in the movie [and] found that those three themes could interconnect and weave from one into another. It was kind of like magic."

Even when a director is in post-production, Badalamenti's scoring process involves verbal interplay. When Jane Campion asked him to score *Holy Smoke*, he went to her editing facility in Sydney, Australia, and made sure they had a synth there. "They thought I was nuts," Badalamenti remarks.

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"She would just put up scenes, look at the whole thing and then describe to me about what she was looking for. I sat down, and in literally two-and-a-half days, I wrote just about the whole score right there. You get those good vibes from a person that's lived with a project so long, and then you know right away if you're on the same page or not. I've found that just sitting next to a person and just talking like that, it just seems to come."

AT HOME WITH TECHNOLOGY

While he has traveled to different parts of the world to work with various directors, Badalamenti now has his own studio in New Jersey. Last year, he bought the house next door to be used exclusively as a studio and guest house for directors, writers and collaborators. He also maintains a small basement setup that includes Digital Performer, a keyboard and video gear.

In the studio house, Badalamenti has a Mac G5 and a G4, and a Windows XP rack-mount Pentium 4. He has two 23-inch monitors (a Cinema Display and a Sony LCD) and OWC Mercury Elite FireWire hard drives.

He works on two Panasonic Ramsa digital consoles with a Digidesign 001 Pro Tools system, and a MOTU 2408mk3 digital interface and two MIDI interfaces, as well as such software as GigaStudio Version 1, the latest Digital Performer, Pro Tools LE 5.2 Mac, Finale Final Cut 2 and Toast with Jam CD-authoring suite. He also uses a Lexicon PCM-80 and has FX and Hafler power amps. His speakers include Mackie HR-824s, and Yamaha NS-10s and NS-101s. Synths and samplers are a mixture of Roland (5080, V-Synth, S760) and Spectrasonics (Stylus, Atmosphere Soft Sync, Trilogy Soft Sync), along with a Korg Triton 88-key, Kurzweil K2600R, Access Virus C, Studio Logic SL-880 and SL-161 controllers, RMX Soft Sync and a MOTU MachFive soft sampler.

Despite the wealth of gear at his disposal, Badalamenti does not come off as a gearhead. Indeed, he is very old-school in his approach to making music—just do it. He likes velocity-sensitive keyboards that allow him to make crescendos and decrescendos. He disdains click tracks, preferring to compose from scratch. He likes both organic and synth strings and tends to combine them in mixing.

"I love sounds that are very, very smooth in strings," he remarks. "It's been the style of my writing from way back [that] I love things to be so beautifully connected, and the synth strings do that even better sometimes than just organic strings. But, of

course, nothing replaces the nuances and sound of the acoustic strings, so I like the combination."

BEYOND THE SCORE

With *Dark Water* and some Lynch soundtracks, Badalamenti's music can be used for its melodic qualities or within sound design itself. The composer often gives Lynch something they call "firewood," where he might record with an orchestra, and once the official score has been recorded, Lynch will ask Badalamenti to give him additional musical fodder, like when the duo recorded

a full string section in Prague.

"He would say, 'You've done all the music that I've asked you to record,'" recalls Badalamenti. "Now let's take out an hour with the string section, especially the viola, the cello and the basses, and give me firewood. Or write me some slow, dissonant 10-minute pieces.' And I'd write a 10-minute piece for low strings done very, very slowly—like a metronome marking of a quarter-note equals 48. David would stay in the studio and take what I did and do it half-speed. He would experiment with the engineer and play it backward and

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sideways. Then he would take one track with one mix and another with one another mix and superimpose these things. All of a sudden, you've got some very unusual sound design going right from there. Then comes the final mixing and you're in the dubbing stage and you can still fool with a lot of processing. David's the best at that. He really is."

While his success lies in movies, Badalamenti's musical works extend outside of film and *Twin Peaks*. He has scored themes for TV shows such as *Profiler*, *The Last Don* mini-series and *Inside the Actors Studio*. He composed and conducted the opening Torch Theme ("The Flaming Arrow") and the 25th anniversary theme for the 1992 Summer Olympics in Barcelona. Badalamenti co-produced and co-wrote with Lynch the Brooklyn Academy of Music's theatrical production of *Industrial Symphony No. 1*, which received the American Music Video Entertainment Award. He has recently written string quartets that have been performed and would like to write a clarinet concerto for his son, "who's a top-notch clarinetist," he says. "I'd like to do an album with my jazz trumpet player

brother."

Beyond movies, television and concert halls, Badalamenti's work extends into the pop world. He has recorded a full album with Cruise called *Into the Night*; done a remix with Orbital from his soundtrack to *The Beach*; co-written the song "Black Lodge," on which he played keyboards, for Anthrax on their *Sound of White Noise* album; contributed some incidental music for Michael Jackson's "Black or White" video; and worked with numerous other artists, including Marianne Faithfull, David Bowie, Pet Shop Boys, James frontman Tim Booth and The Cranberries frontwoman Dolores O'Riordan, with whom he has recently been collaborating via the Internet.

An experience working with Paul McCartney back in the early 1990s at Abbey Road Studios was certainly unforgettable. The former Beatle asked Badalamenti to arrange and conduct a near-full orchestra for one song. "As I'm on the conductor's stand and working with the orchestra," Badalamenti recalls, "Paul says, 'Angelo, that sounds great. Let me tell you this story. The Queen's Office asked me to do 40 minutes of music to celebrate the Queen's birthday

at Buckingham Palace. I was thrilled. On the night of her birthday, I'm about to go onstage to perform, and the Queen walks by and says, 'Oh, Mr. McCartney, it is lovely to see you.' 'Your Highness, I'm so excited and thrilled and happy to be able to perform for you tonight to help celebrate your birthday.' And she says, 'Oh, Mr. McCartney, I'm so sorry, I can't stay. You have to understand, it's five minutes to eight. I must go upstairs and watch *Twin Peaks*.' Paul turned me around and gave me a punch in my arm. 'You son of a... Because of your show, I couldn't perform for the Queen!'"

The composer, who considers himself to be a "dark romantic," certainly has had many opportunities to spread his wings into different musical areas. When asked if there are certain types of endeavors he would like to tackle that he has yet to, Badalamenti's response is simple: "I'd love to be able to do projects that allow me to expand and that just make me write the most beautiful music that I'm capable of doing." ■

Bryan Reesman is a freelance writer based in the New York metro area.



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The nature of recording facilities is shifting almost too rapidly to grasp, but Professional Audio Design is uniquely qualified to give context to the constantly changing audio landscape. PAD's status as not only an equipment sales resource, but also as a design and technical services provider means that industry trends are unfolding within its view.

"The recording industry has changed a lot since I founded PAD in 1993," observes company president Dave Malekpour. "At the pro level, there used to be one type of recording: big studios with huge budgets and anything else was demos. Today, the market is divided into a few key sectors. There's still a strong pro recording market, where professionals need the right environment with the right support. The other side of the market is drawn to more individually based production that can yield high-end results, but from single-room environments run by the person who's going to operate the equipment. And as the market has developed into the computer-based systems we're so accustomed to using, we have a whole other angle. Today, you get GarageBand free with your iMac! For any musician today, having a studio is within reach."

Able to put complex systems together at its expansive, 17,000-square-foot facility in Rockland, Mass., PAD can handle often-daunting tasks—prewiring patchbays, synching word clock between multiple components, refurbishing consoles—that even the most talented engineers might not want to tackle. "As we've seen these facilities go to the single-operator level, they're often run by people who were used to going into a working studio," Malekpour points out. "They're accustomed to working with Pro Tools, but perhaps not setting it up. A lot of our clients are great at mixing Gold records, but I wouldn't want them to assemble my Pro Tools system. Our studio guys, however, are great at helping with that."

With a customer base that ranges from bedroom warriors to personal studio pros to high-profile operators such as Alicia Keys (The Oven), Timbaland Studios, Dave Fortman (Balance Productions) and ex-Stone Temple Pilots drummer Eric Kretz (Bomb Shelter Studios), Malekpour has seen first-hand the focus and philosophy that are needed to achieve studio success.

"One of the challenges today is understanding what you do and who you're serving," he says. "Often, people's studios are covering too many areas because they want to assure themselves that they have all these ways to make money, but sometimes you should focus on what you do well. If you're a post-production facility, for example, designing your studio so you can track hands can distract you from your core business. We come from a service-oriented approach, knowing all the underlying elements of what makes a studio work. We'll ask the client, 'It's six



PHOTO DAVID WEISS

Dave Malekpour with a Neve 8088 restored for Neil Finn

months down the road and the doors are open. What do you need to get your customers?' We look at the business aspects of the decision-making process: Not just whether it's exciting to have a cool mic or mic pre, but how will they enhance their business?"

While the staff gets satisfaction from integrating cutting-edge components, you can see an extra gleam in Malekpour's eye when he talks about PAD's console refurbishments. These are deep projects involving the same level of detail usually afforded to classic car restorations, and the PAD shop—with its current collection of Neve, SSL and Trident boards in various stages of completion—has the intense feel of a hot-rod garage.

Nearly finished at the time of this interview was a breathtaking 40-channel Neve 8088, procured by PAD from the legendary Bearsville Studios and headed for ex-Crowded House/Split Enz leader Neil Finn's facility in New Zealand. "This was originally ordered by Pete Townshend for Rampart Studios in the UK, spec'd by him and Rupert Neve in 1973," Malekpour says. "We gave Neil our recommendations of how to take it from a good, old used console to something you can invest in for years to come." Finn approved a 1,000-plus-hour restoration that yielded improvements to the patchbay, phantom power layout, metering, signal path and more while respecting the rich original sound of this historic mixer.

Classic gear notwithstanding, Malekpour is excited about what the next generation of audio pros will need and how PAD will continue evolving to respond to those needs. "It will be an interesting time when all of today's 9-year-olds playing with GarageBand are in their 20s," he concludes. "Technology is an important part of how they live, and that's why we're focusing on training and service—reaching out to the customer who needs to know what it takes to make a good system." ■

David Weiss is Mix's New York editor.

Jeffrey Lesser

Doing It All—From Kool & The Gang to Kids' TV

To hear Jeffrey Lesser tell it, he's not really working. Despite a successful engineering and producing career that spans nearly four decades, he continues to explore his love of music with almost childlike enthusiasm. Somehow, that seems appropriate for a man who, from his earliest days at Mediasound Studios (New York City), cut his engineering teeth on *Sesame Street* episodes. From that era to the present, in his new incarnation as music supervisor and producer for yet another new children's television show based in New York, Lesser has a reservoir of experience to draw from that is as wide as it is deep. His credits include recordings for the likes of Kool & The Gang, Barbra Streisand, Lou Reed, multiple Grammy-winning Irish group The Chieftains, the Oscar- and Grammy-winning film soundtrack for *The Lord of the Rings: The Return of the King* and the Tony Award-winning original cast album *Parade*. He's also produced discs by The Strawbs, Loudon Wainwright III, The Roches, Pat Travers—even jam band Donna the Buffalo. Yet, somehow for him, work is still play.

When Lesser called to tell me he had taken a position with Little Airplane Productions (www.littleairplane.com), producing music for the first 40 episodes of a new series entitled *The Wonder Pets!*, I was delighted. The show is the latest brainchild of Josh Selig, creator and executive producer of the current hit show *Oobi* and winner of 10 Emmy Awards for his work as a writer on *Sesame Street*. As Lesser and I both began our careers at *Sesame Street* and Selig was a child actor on the series, I couldn't help but feel that the confluence of serendipity demanded further investigation.

Lesser invited me down to Clinton Studios to observe a scoring session first-hand, and to see the changes that have taken place in children's television over three-and-a-half decades. Our conversation then moved to his home, where he shared his passion for his new show and some older memories.

The scoring session I attended for The Wonder Pets! was crackling with energy. Tell me about the creative team you have working on this project.

It's an amazing collection of artists, animators and digital layout people, all under the roof of the creator of the show, Josh Selig, who came up with the concept of *The Wonder Pets!* We have a group of well over 50 people coordinat-



ing their energies toward this show, which will air [in the spring] on Nickelodeon. One thing that is very unusual for just about any show these days, but certainly for children's television, is that we use a live orchestra. It's sort of a mini opera, and one of the mainstays of each episode is that the characters travel to other lands, delving into the music of the locals.

You have a wealth of experience in world music.

Yes. I think I've done seven or eight albums with The Chieftains, and in the course of doing them, besides working in Ireland and in the United States, we've traveled all over. They specialize in using guest artists on their albums. Sinéad O'Connor was the first, which we did in the same studio here at Clinton, where we're recording *The Wonder Pets!*

Was it your experience with The Chieftains that led you back to Ed Rak's studio?

That was definitely part of it. *Parade* was done here, *The Rocky Horror Show*, *tick, tick... Boom!*—a bunch of wonderful projects that I did with Ed. He's got great ears, and the room is fantastic. Even though we're all digital and in Pro Tools these days, I go back to the days before digital was even a *word* in audio. Ed's got a beautiful vintage Neve 8078 board, with an amazing collection of tube microphones. And the sound of the room itself—all of this adds to a kind of warmth that we maintain right to the end product.

You're recording through antique Class-A electronics. Once you enter the digital domain, do you remain there?

Yes. We set up a studio at Little Airplane. We actually do the entire recording there, except for the orchestra—all the mixing, voice-overs, editing and even all the final digital laybacks. I have a wonderful right-hand man, Steven Rebolledo, who has progressed from assistant to audio associate producer and whom I feel very lucky to have. We have



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our own video editors and video-editing suite in-house at Little Airplane Productions, as well.

One of the reasons we stay in the digital domain is that we're always floating between 12 to 15 shows at the same time. From the earliest stages, in dealing with the composers all the way through recording the voices to MIDI, doing scratch music tracks and then, finally, the live orchestra, mixing and editing, I may have to jump between four or five shows in a single day. So when I'm in the Pro Tools environment, I can instantly open up right where I left off.

You don't have to wait for the tape to rewind anymore!

I remember the old days of recalls, where you had Polaroid pictures and you were talking into a tape recorder. But one [good] thing about rewinding was that it gave you a 30-second break!

Though the pace of your session is really brisk, you still rigidly adhere to all the traditional breaks.

All the breaks, limits and overtime requirements I learned from doing cast albums. I worked with an artist named Jason Robert Brown, who wrote a show called *Songs*



Engineer Ed Rak (L) and Jeffrey Lesser at Clinton Studios (New York City), recording The Wonder Pets! orchestra

for a *New World* that played off-Broadway. Very shortly after that, he got a call from Hal Prince to write the music for *Parade*, which was "on Broadway." There's something very different about actors when they're in the studio, as opposed to singers and musicians.

First of all, they're so grateful to be there. And they love to perform. The experience of recording a live Broadway cast album is very intense.

What about time constraints?

There are union time constraints and budget constraints. Because of AFTRA and the AF of M contracts, you really have to get it done in one mammoth day. And that's how most of them are done.

So those sessions were really good preparation for the kind of sessions you've been doing in TV.

Totally. Generally, you're recording a cast album after they've performed the show many, many times, so they come in well-rehearsed. And there's something very stimulating to an actor when he knows that this is the performance that's going to be preserved for posterity.

You mentioned that The Wonder Pets! format is comparable to a mini-opera, in that most of the dialog is sung or spoken to a music track. That's an awful lot of music to do for 40 shows!

Each show is 12-and-a-half minutes. There are two episodes per half-hour show. The first minute is an intro before the new music kicks in, but once it does, it's non-stop for

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approximately 10-and-a-half minutes, seamlessly going from underscore to songs to recitatives. We use kids in all the parts. The only adults we use are in the reunion at the end of each episode where the mama or the papa gets together with the animal that's been rescued by the Wonder Pets. The Wonder Pets and all their animal friends are played by brilliant, brilliant kids.

The character voices are recorded first—to piano only—for each show's segment, which is quite the opposite of what was done back in the '70s on the Sesame Street shows that you and I worked on. There, the voices were done last. Why is the process reversed for this show?

Partly for the animation technique. We template the entire show in real time, with real tempos in the real keys, and then they lip-sync the animated characters to our final takes. The composer delivers to us a first pass of the music, with his voice doing all the voices to piano. Then we strip out the composer's voice and add the kids. They lip-sync picture to our final production vocals.

Before we go in and record the orchestra, we do a MIDI mockup. But we don't use it in the final rendering. It's all replaced with a real orchestra. Occasionally, there's a little bit of MIDI orchestra enhancement mixed in.

I noticed that you record the orchestra in short bursts of four or five bars at a time, punching in on Pro Tools until the entire score is done perfectly. Then you record a complete performance for feel without stopping for mistakes.

It's called making sure you have what you need for the takes! [Laughs] We're not really punching in; we're doing separate takes. We'll take it as far as we can. We start off with one complete read-through...

You playlist it?

Right. We do a first run-through—which is pretty much non-stop—to sort out whether the copyist got all the notes right or whether there are any changes we have to make. Sometimes the music is composed before final animation. Then, seeing the animation at the session, sometimes we have to doctor little moments. The arrangements are fairly complex, and it's tough to grab in one long take, so I do it in pieces, making sure all the pieces are accurately played with a good feel. In the end, when I'm sure I have everything I need, we do one more complete take, because, oftentimes, that has the best feel. If it's a balance between perfection and great feel, I'll always lean toward feel and groove.

Do you use any outboard gear when you mix?

No, I use virtual plug-ins.

Do you use virtual bus compression?

Yes.

How does your overall bus compression differ for television from the kind of compression you use for records?

Every soundtrack that goes to TV is scrutinized by the networks for quality control. Certainly for pops and clicks and distortion, but for level, too. There is a brickwall limit that we cannot go beyond. If we do go beyond it, it gets sent back. So in that regard, it's very different.

What microphones do you depend on?

We use Neumann mics, of course, wonderful old Telefunken 251s, some ribbon

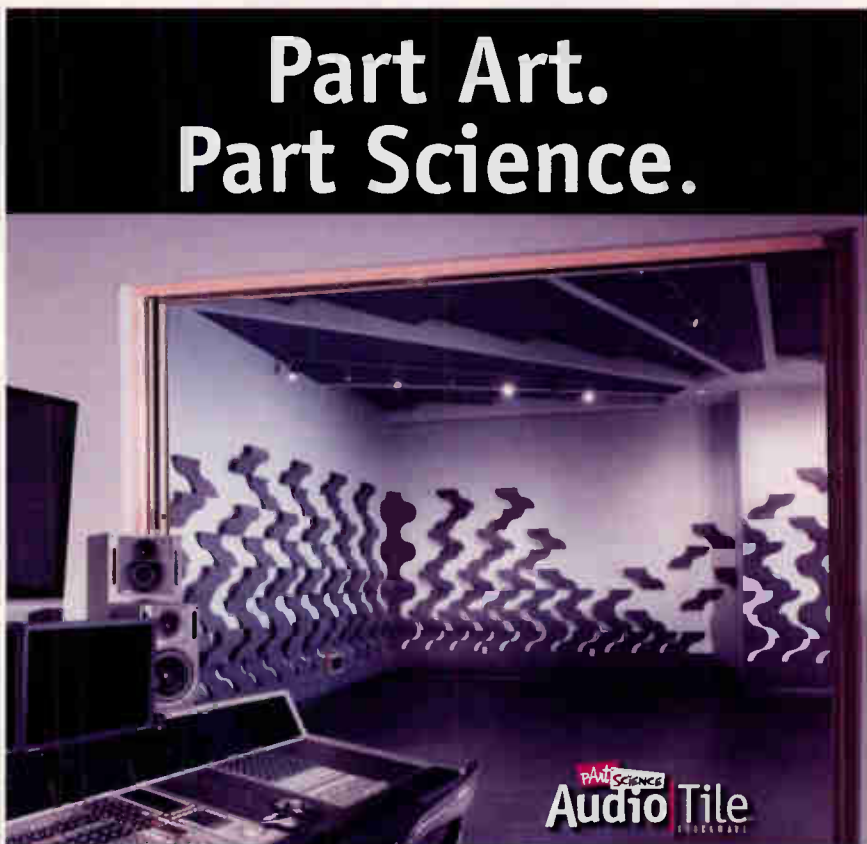
mics—Coles; a wide assortment.

You cut your engineering teeth at Mediasound. What led you there?

Before Media, I was a film editor and a film soundman. I worked with Brian DePalma on a film starring Robert DeNiro [Greetings, 1968]. Mediasound had just opened their doors. They were doing a lot of jingles and movie soundtracks, and some pop stuff, but they needed someone who had experience in film, so Harry Hirsch [co-owner and founder of Mediasound] brought me in as their film specialist.

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or influence from those early days?

The late Joe Jorgensen had a really profound influence on me, as did Fred Christie. Tony Bongiovi was amazing. He said, "Don't look at the meters." As a matter of fact, when I was doing a session with him, he'd put a piece of paper over the meters so that I could learn where the sounds and levels needed to be by listening instead of staring at meters. He said in his unique voice [imitates], "The only thing you have to worry about, Jeffrey, is if the needle is all the way to the left or all the way to the right. As long as it's moving, you're in good shape!" [Laughs] I loved that and kept that advice for years. Of course, I had to be a little more careful once I started working in the digital domain.

It was right about the time you were recording Kool & The Gang at Media that you met your first partner, Rupert Holmes.

Yes. I believe it was Susan Planer [the general manager of Mediasound] who thought we would be a good pair. Rupert was doing one of his songs under a group name—a lot of people did that in those days—and we hit it off instantly. Rupert was brilliant in terms of writing lyrics and arrangements, but also incredibly flexible and open to outside ideas.

We were both pretty green at that time. I was greener than he was, but there was a wonderful give and take in the relationship. We used a live orchestra on his album *Widescreen* (1974). It was great. And Rupert was good with deadlines. If you needed him to finish a chart, you could book the studio time, and if he knew we were recording on



From left: Jeffrey Lesser, Barbra Streisand and Rupert Holmes during the recording of Streisand's *Lazy Afternoon*

Thursday at 10 o'clock, he would have those charts finished in plenty of time—like by 9:30 Thursday morning [Laughs]! I swear, if we had two songs to record, he'd be scribbling out the last few notes for the second one while we were still recording the first!

Paddy Maloney, like Rupert Holmes, is an arranger par excellence.

Absolutely. He's really the brain behind The Chieftains.

Did you concentrate on the recording aspects of The Chieftains' albums as opposed to the arrangements, or was it a combination of both?

I had very little to do with the arrangements. When I work with The Chieftains, Paddy Maloney is the producer. He is the one who handles the choosing of the material, and he pretty much runs the sessions. Many of the artists who we worked with—from Joni Mitchell to Linda Ronstadt, Sting, Sinéad O'Connor, Diana Krall, Lyle Lovett—many

of them met The Chieftains at the session, so that they would walk in, at least on several albums that we did, and we would devote a day to each artist. And the day would comprise them coming in, learning the song and—by 12, 1 or 2 o'clock—start recording and by 3 or 4 o'clock have an amazing take in the can.

Most album productions are partnerships. There's a trust the band places in a producer/engineer to get them to something that really represents them. How do you view the role of producer?

There are many, many different types of producers. I have always been fully collaborative with the artists I work with. The artists get their name in the big letters. Their input is always important. Sometimes they may need to be pushed a bit, but it's a liquid process. Making an artist comfortable in the studio is absolutely essential, as well as getting takes fairly quickly. If you get a final vocal early in the process, everything will be triggered off that performance. I've always drawn the parallel to a painting hanging in a museum. If the frame pulls your eye away from the painting, it's the wrong frame for that painting. The song and the artist's personality are the painting.

The record and the music create the frame. Anything that stands in the way of seeing the artist or the story the songwriter is telling is a distraction. It's sometimes difficult to capture a great performance. Artists are not always ready to get the final vocal. I try to get into the artist's head to find out what they need. [That's] better

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than being dictatorial. I know some artists may need that, and they can go ahead and work with producers who are like that! But, hey, it's a big family, this music business, and a big world. There's someone for everyone!

What's your favorite mic for vocals?

The Telefunken 251.

What's your favorite mixing console?

I'm mixing in the box in Pro Tools. I'm using a Digidesign Control 24, and you do get the feel of a fader. Even though it is a data controller, it looks and feels like a console.

How have the changes in recording technology made life easier for you as a producer?

Well, the recall thing I can't stress enough. To be able to leave something that is 50 percent done, jump to something else, then go back and have things be exactly where they were when you left off is wonderful.

There are things that I miss about mixing in real time. We marked every fader with grease pencils and tape, and more often than not, if you didn't have enough hands, your assistant engineer or possibly one of the musicians would be on a fader—so at times, there could be up to five people hovering over the board, each with a little move, knowing that at the first chorus, their fader would have to go from minus eight to minus four or whatever. And there was that moment at the end of the mix when you pulled down the master fader and everyone would yell, "We got it! We nailed that one!" You don't have that now. You finish and go, "Well, that was good. Did we lose the

hi-hat in the middle of that bridge? Do you think we need a little more reverb on that one tom hit?"

There's more emphasis on perfection over feel than there was in those days?

I think so. And you have to watch yourself to make sure that you don't lose the feel by tweaking too much. You can make something as perfect as you want. You can retune, retime...

If you had to advise young kids who are starting out, is that one of the things you would steer them toward—relying more on feel than perfection?

Without a doubt! You can abuse a feel, too, by doing too many takes. I would say that preparing in advance before you go in to record [helps]. If you beat a song to death, you get to the law of diminishing returns, where the song is getting perfect and feel is going down the drain. ■

Michael Barbiero is a producer/engineer/mixer with credits on a slew of albums by top artists, including Ziggy Marley, Metallica, Guns N' Roses, Gov't Mule, Maroon 5, Counting Crows, Blues Traveler and many others.

Selected Discography

P, producer; E, engineer; M, mixer

Barbra Streisand: *Lazy Afternoon* (1975, P/E/M)

Rupert Holmes: *Widescreen* (1974, P/E/M)

Lou Reed: *New York* (1989, E/M)

Kool & The Gang: *Jungle Boogie* (1973, E/M), *Funky Stuff* (1973, E/M), *Hollywood Swinging* (1973, E/M)

The Chieftains: *Long Black Veil* (1995, E/M), *Santiago* (1996, E/M)

The Lord of the Rings: *The Return of the King* (2003, E/M)

The Rocky Horror Show (2001, P)



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Slate Run Productions

Jay Shilliday Expands His Post-Production Repertoire

There comes a time in most every engineer's life when balance becomes paramount. Balance in the types of work, balance in a mix, balance in lifestyle and balance in relationships, both personal and professional. Sometimes, the search for balance leads to a career change; sometimes it involves a move to a new town. Other times, it leads right back home.

We've seen it happen in the record industry over the past decade, this move back home. And now it seems that Jay Shilliday, a nationally known commercial mixer with credits including the Budweiser Frogs, "Got Milk?" Yahoo, E-Trade, Saturn, Microsoft and hundreds of others, is on the vanguard of a similar move in post. After 22 years at the top of his game, Shilliday decided to branch out.

"I had been mixing spots for a long time, to the point that I could do it in my sleep," Shilliday says. "And this market had shrunk so far that the only way to stay afloat in some ways was to have diversity. I've had this vision for a while of what my dream facility would be. Because I'm a musician, because I now do video editing, as well as audio post, I wanted to create an environment where I had the ability to do several different kinds of work. Right now, I'm looking at companies like Pixar and PDI. I'm looking at the games market, and I've had some success with picture and sound in the corporate market."

Tucked into the hills of Oakland, Calif., Slate Run Productions (www.slaterunpro.com) is a truly versatile facility, and while it *is* in a home, it's not at all what you think of when you think of a home studio. It's every bit pro as any room Shilliday has worked in. At this point in his career, having been employed by eight different facilities (all of which have been featured on *Mix* covers, which must be a record)—from Bison in his birthplace of Columbus, Ohio, to GHL Mobile, Streeterville, Summit Sound, Editel S.F., Focused Audio, Waves and Crescendo!—Shilliday knows what it takes to create a pro facility.

"The whole thing started out as a place for me to play," Shilliday recalls. "Then as I looked at doing more types of projects, I decided to just put in a machine room, hire the wiring guys, Mack Clark and Nicho Ybarra, and do it right. I put in a Fairlight, Pyxis, the Yamaha 02R96, Final Cut Pro, Pro Tools, Genelecs in 5.1—all the tools for all types of work." Shilliday designed the suite, and he brought in noted San Francisco Bay Area contractor Dennis Stearns to build it, a process that went hand in hand with a rebuild of the house. All power is separate from the house, and all audio is on isolated ground, same as video. There's a separate entrance, and a window looks out over the Bay Area. "I wanted people to have the comforts of home without thinking they're in a home. It's totally pro, just not in the usual place," Shilliday says.



PHOTO: BILL MCILHEEN/KOZFE

In the control room, one wall is lined with Marshall stacks, a testament to Shilliday's guitar-slinging days. The other side wall is a window onto a relatively large vocal booth, where Shilliday has installed perhaps his most unique feature.

"We have a four-way split plasma screen, with cameras on the mic stands," he explains. "So you have the ability to look at each actor's face when you record—for the animators. When I did the voice recordings for *The Nightmare Before Christmas*, we had only one camera and sometimes we had an ensemble cast. Now I can put three or four people on-mic, on camera, at the same time, then hand the animators a video tape and/or Final Cut video with all the talent in one picture, along with all the audio. I think it gives the studio some distinction.

"The other thing that's interesting is that with the Internet, FTP sites ISDN lines and EDNet, I no longer touch tape at all," he continues, noting that the ad world still passes around DigiBeta. "When I do work for corporate clients, I have a 3-D guy in Walnut Creek, the video editor is in Marin, and I have voice talent down in L.A. I can do real-time recording anywhere in the world, and we never really see each other."

Shilliday remains modest about his trailblazing, but is obviously excited at the prospect of adding longform audio post, music, games and anything that comes his way into his portfolio. "In the Bay Area, many of the larger facilities will be competing with the boutique shops because that's just the way the world is going. I've set this up to be very price-competitive with anybody so that you're getting a great product at an almost unheard of price.

"I have one grown daughter and two children at home, so this is certainly helping me balance my life. I no longer have to work so many jobs to make the same money. And the commute? What a commute!" ■

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World Radio History

Fiona Apple



Text and Photos by Steve Jennings

Fiona Apple is touring to support her new CD, *Extraordinary Machine*. It's been more than five years since her last tour, and the sold-out crowd at San Francisco's Warfield Theater in late November gave the singer/songwriter a loving response to her long overdue return. She goes back on the road at the beginning of 2006, opening for Coldplay. All gear is provided by PRG, with racks and stacks supplied by local companies or house installs. *Mix* caught up with Apple's front-of-house engineer/production manager Gordon "Gungi" Paterson, who's using a Yamaha PM5D.

"The console is new to me but I'm very familiar with the concept and operation of digital consoles, so it's been a smooth transition," says Paterson. A peek inside his rack reveals Distressors, a Lexicon 480, an Eventide H3000, Midas XL-42 and TC Electronic 2290.

"We just changed Fiona's vocal mic to a Shure SM86," Paterson continues. "We were using Beta 58s. I feel that the SM86 is warmer and has a smoother, less-smear high end. I'm now using the Midas XL-42 as the mic preamp for Fiona's vocal, which helps to warm her vocal. She's not on in-ears; we just use wedges and sidefills.

"We have the XTA DP 428 speaker-management control system. It's always challenging using the sound system du jour, but the DP 428 has helped with the system EQ process. I love the flexibility of the wireless tablet. The band is doing an amazing job of re-creating the sounds and tone of Fiona's CD releases."

On monitors is Kevin Glendinning and the PRG crew guy is Chuck Smith.



Front-of-house engineer Gordon "Gungi" Paterson

FixIt

Thomas McNabb, FOH for Mae, is a one-man engineering show for this tour, as there is no monitor engineer. (The band handles monitoring duties.) Mae is playing small clubs and theaters through March.

When using two kick drum mics, the two signals are less than 180 degrees out-of-phase. Lining up the two signals can have a drastic effect on the kick drum's tone and sound. Finding devices to accomplish this can be hard, but there are a number of solutions. A delay unit adjusted down to a few microseconds will suffice, as will phase-alignment units. Lastly, software plug-ins are available, whether it uses a sample delay or a phase-alignment tool.



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News



Trinidad Sanchez III, recently out on tour with *The Rippingtons*

Out on tour with The Rippingtons, FOH engineer Trinidad Sanchez is miking the band with Sennheiser e902 (kick), e904s (rack toms, floor toms), e905 (snare) and e914s (hi-hat/overheads). Says Sanchez, "It's great when you're at FOH and hear something and like the way it sounds. But when you have a drum veteran playing who's heard every mic and is also very happy with the drum sound from the board mix and the monitors, that's really something." ...Rental company **Velvet Thunder** (Eugene, OR) provided **Audient AZTEC** live consoles for String Cheese Incident Festival, Off-Fest and the Eugene Celebration, all of which took place in the company's home state this summer. Says co-owner and engineer Bill Walker, "We're using the AZTEC with Audient ASP231 graphic EQs, and I love the sound of them. We've also got the Audient ONE loudspeaker processor for evaluation." ...The **Judith Wright Centre for the Contemporary Arts** (Brisbane, Australia) recently installed a **Meyer Sound** self-powered line array system, which comprises five M10 ultra-compact curvilinear array loudspeakers and two UPJ-1P compact VariO loudspeakers... **America West Arena** (Phoenix) installed a **Martin Audio** loudspeaker system: W8LC compacts, WLX subs and W8LM minis.



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On the Road

John Roden

When Paul McCartney goes on the road, it's never just a tour—it's an event. His recent U.S. dates wrapped up in late November after 36 shows in the States and Canada. *Mix* caught up with McCartney's longtime monitor engineer, John Roden, when he was handling the two final dates at the Staples Center in L.A.

What are some favorite artists with whom you've worked in the past?

The Stranglers (the fun), Annie Lennox (the music), Michael Jackson (the mix), AC/DC (the volume) and Paul McCartney (the challenge).

After 16 years of working with Sir Paul, is there a "routine" day?

No. The basic format of the band and the instruments Paul plays hasn't changed in years. Every McCartney tour presents its own set of audio challenges, but the fun is rising above them. The stage—comprising a horizontal video wall—caused us a few problems, mainly due to the amount of RF that is generated. Also, the design of the stage is a half-pipe that rises at the rear of the stage. This tends to fling the high end out toward the vocal mics and the FOH position, causing a few problems for [house mixer Pab Boothroyd].

Do you prefer to mix wedges or in-ears?

I have no preference—both have their upsides and downsides—but given a choice, I prefer the traditional way.

Any advice for monitor engineers, particularly those just starting out?

Find another career, unless you feel very passionate about onstage sound. Mixing monitors usually ends in tears and more often than not is a thankless task.

What are some of your favorite venues?

I haven't got any. They all have their downsides, even the good ones.

What do you enjoy doing when you're not on the road?

Being with my children and partner and hiding out from them in my shed.

Now Playing

Rob Thomas

FOH Engineer/Console: Dave Wilkerson/Midas Heritage 3000

Monitor Engineer/Console: Chris Sharp/Midas Heritage 3000

P.A./Amps: L-Acoustics 18 V-DOSC, six dV-DOSC, 12 ARCS/Lab.Gruppen LA-48, Crown VZ5000

Monitors: Sennheiser AC-2; Shure PA770, P7T PSM700, P6HW

Outboard Gear: Klark-Teknik DN3600; XTA DP-226; Midas XL-42 preamp; Aphex 120, 622; TC Electronic 1280; Lexicon PCM91, 480L; Eventide DSP-4000 Harmonizer, H3500; Yamaha SPX990, SPX2000; Denon DN680; Alesis Masterlink; BSS TCS-804, DPR-404; Focusrite Red-7; Empirical Labs Distressor; Manley ELOP; dbx 160A; Avalon 737; Drawmer DS201

Microphones: Shure Beta 91, Beta 52, SM57, Beta 57, Beta 58, KSM32, SM98; Sennheiser MD504, e609; Audio-Technica AT4050, AT4047, AT4041, AT4051; Beyerdynamic Opus 87, M88

Additional Crew: Andy Omilianowski, production manager; Greg Looper, FOH system engineer; Wayne Teaster, system and monitor tech; Donnie Floyd, system pusher

Jason Mraz

Sound Company: Sound Image (Escondido, Calif.)

FOH Engineer/Console: Daniel Kenneth Wise/Midas XL4

Monitor Engineer/Console: Micah Goldfarb/Yamaha PM5D

P.A./Amps: Sound Image WideLine with new Wideline subs/QSC Powerlight, Crown I-Tech

Monitors: Sennheiser IEM G2 with Future Sonics



molds, Sound Image G2 and Ego wedges
Outboard Gear: Klark-Teknik DN-3600, ADL CL-1500, dbx 160A, BSS gates, Yamaha SPX990, TC Electronic M-One and D-Two, Lexicon PCM81

Microphones: Shure UR45 receiver with KSM9 capsule, SM58, Beta 58, SM57, SM98; Sennheiser MD421, e602, e609; Ramsa SA-10 headset; Audix SCX-1; Countryman Type-85; Whirlwind Director; Radial JDI

Additional Crew: systems tech Marcus Douglas

What Is a Green Room?

It's not just a problem for etymologists: Searching for the origination of a term has been plaguing our live sound engineers. What is a green room? A bit of Internet research found that there are numerous explanations of what a green room is; here are a few of our favorites.

Scholarly journal DeProverbio.com posits that, "The green room took its name from the fact that its walls were often painted green to rest the eyes of actors after exposure to bright stage lights." World Wide Words suggests that the stage itself was called "the green," making the green room a room adjacent to the stage. FAQs.org lists numerous reasons, including "because the plays originally took place outside on the village green," and, "It was where the shrubbery used onstage was stored and the plants made it a cool, comfortable place."

Whatever the origin, the green room has become a relaxing place for engineers to chill out after soundcheck and rest before the gig. Got a theory on the term's origin? E-mail it to mixeditorial@primediabusiness.com and we'll post all explanations online—humorous or otherwise.



"I Switched"

Who: Ray Benson

Occupation: Leader of the nine-time Grammy-winning band Asleep at the Wheel; producer with Bismieux Studio; songwriter; 2004 Texas State Musician

Clients: Producer for Willie Nelson, Pam Tillis, Suzy Bogguss, Toots and the Maytals; Voice talent/jingles for Clear Channel Radio, Applebee's, McDonald's, Suzuki, and many more

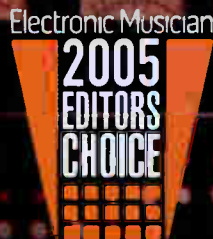
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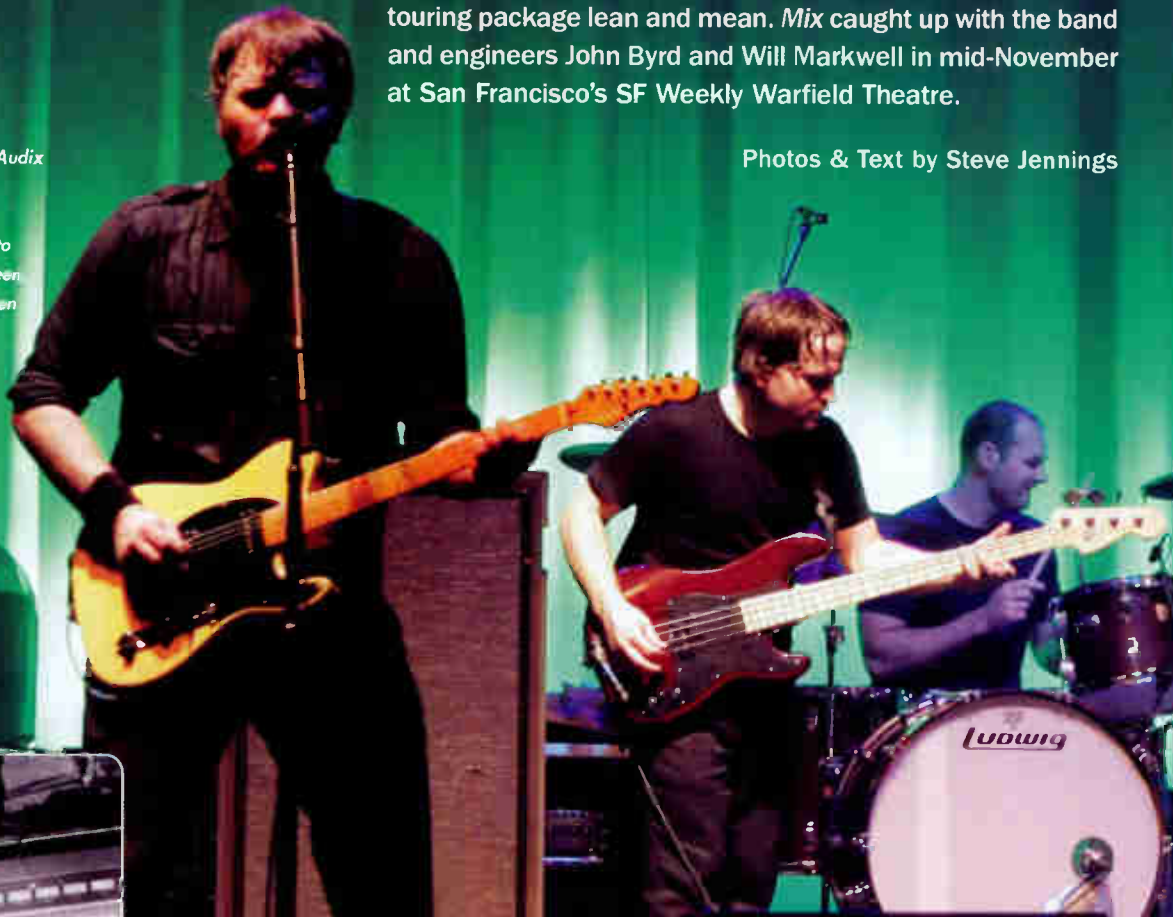


DEATH CAB FOR CUTIE

Out in support of *Plans* (see page 130 for information on the recording of the album), Seattle-based indie quartet (who recently signed to Atlantic) Death Cab for Cutie (singer/guitarist/keyboardist Ben Gibbard, guitarist/keyboardist Christopher Walla, bassist Nick Harmer, drummer Jason McGerr) is playing to sold-out clubs and theaters, while keeping its touring package lean and mean. *Mix* caught up with the band and engineers John Byrd and Will Markwell in mid-November at San Francisco's SF Weekly Warfield Theatre.

Photos & Text by Steve Jennings

"We're using modified Audix OM7s for vocals," says monitor engineer Will Markwell. "In addition to the stock foam windscreens, we placed the windscreens from an Audix D3 over the OM7 capsule. So far, the results have been favorable."



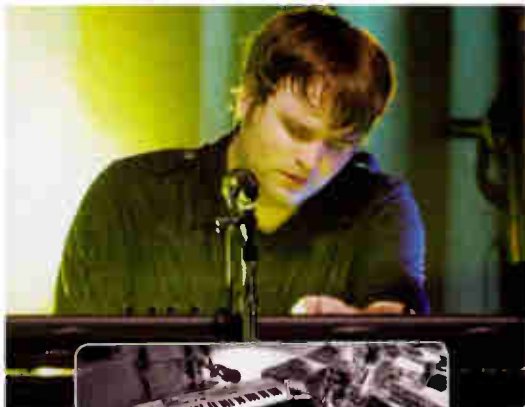
FRONT-OF-HOUSE ENGINEER JOHN BYRD

John Byrd (for whom the band titled *The John Byrd E.P.*, released this past March) says that the tour is just carrying mics, mic stands, cables, sub snakes, a drum riser, in-ear transmitters and FOH processing (sans effects). "My rack is always changing from tour to tour, and I try to experiment with different processors all the time," Byrd says. "The pieces that I really enjoy using are the Meyer CP-10 parametric EQ and the FMR RNCs. I see my job as a simple technical problem of accurately reproducing and amplifying what's happening onstage—no embellishment,

no crazy effect unless it's on the record. I'll use whatever gear I have at hand."

Byrd has become adept at using a different P.A. every night, but stays focused on the job. "Coverage in the front is one of my big concerns and I try to put up front-fills whenever I can," he says. "I'm running 27 inputs and the mixing consoles we use are across the spectrum, depending on budget, availability and what's appropriate to the show. Midas is my usual preference: Clean mic pre's, an adequate number of channels and balanced 1/4-inch inserts are all I really need."





"At the beginning of the tour, we were having a problem with our sampler setup," explains monitor engineer Will Markwell. "The vibration caused by the bass cabinet and subs were messing with our laptop. After Jason tried everything he could with that setup, Chris offered one of his iZ RADAR units [pictured next to keyboards] as a solution. RADAR has been solid. Jason now has a more reliable sampler setup."
Top: Ben Gibbard

MONITOR ENGINEER WILL MARKWELL

Switching to earphone monitors improved conditions for everyone. "Jason and Nick have been on in-ears for almost two years," monitor engineer Will Markwell says. "Recently, Ben decided to try them out and loved them. Christopher wears a pair of headphones when he plays keyboards—at least sometimes he does. The rest of the time, he wears Sensaphonics ear plugs and works off of stage volume.

"Having the majority of the band on in-ears has brought down the volume onstage pretty dramatically," Markwell continues. "That decrease in volume is an obvious benefit to John [Byrd] out at front of house. Nick and Ben are using Shure PSM700 wireless IEMs. Ben uses Sensaphonics Prosonic Soft 2x in-ears. Nick switches between the Sensaphonics and Westone ES3. The Westones don't make as tight of a seal, and most of the time Nick prefers the bleed. Jason switches between the Sensaphonics, Westone ES3 and Westone ES2."

The drum mic complement is mostly Audix, including SCX-25s on overheads; M1245s on snare top, toms and hat; and D3 on snare bottom. Kick is a combo of D6 and a Shure Beta 91. McGerr augments his acoustic kit with a DrumKat trigger pad and Akai Z4 sampler. "[Drummer Jason McGerr] also has a mixer for his in-ear monitors," says monitor engineer Will Markwell. "That way, he can control his own sampler, song starter and ambient mic volumes."

Both guitarists use Dr. Z amps. Gibbard uses a MAZ Jr. combo and a MAZ Senior combo. Walla has a Route 66 head feeding a 2x10 cab and MAZ 38 head going into a 2x12 cab. Audix ADX-112s mike all guitar amps.



Singer/guitarist Ben Gibbard



Bassist Nick Harmer



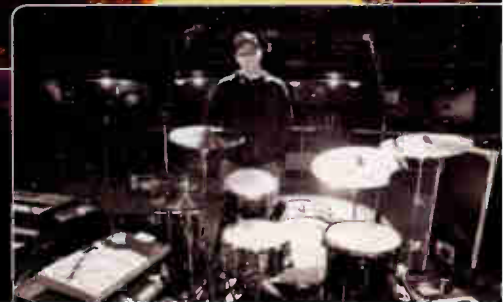
Guitarist/keyboardist Chris Walla



Drummer Jason McGerr



Backline/guitar techs "Chopper" (left) and "Reno"





The Rolling Stones

Bigger Tour for "A Bigger Bang"

By Sarah Jones

There are rock bands, and then there is the Rolling Stones. Who else could sell out arenas and stadiums night after night (with \$450 tickets, no less), headline over the likes of Mötley Crüe and Metallica, and support a production that piggybacks 130 trucks across North America? After all the hype leading up to November's A Bigger Bang tour stop at San Francisco's SBC Park (and with our pricey tickets in hand), we expected something really over-the-top, and we were not disappointed. Under a full moon, before a sold-out crowd, the 62-year-old Mick Jagger and crew proved—from the opening crunch of "Start Me Up" that brought 40,000 screaming fans to their feet to the showstopping "Satisfaction" encore—that after all these years, the Stones still rock the house.

THE TEAM BEHIND THE TOUR

The tour is a major haul: The North American leg kicked off in August at Boston's Fenway Park, and there will be more than 35 more stops before the production heads to Mexico, South America, the Far East, New Zealand, Australia and finally Europe this

summer. Opening acts rotate throughout the tour and are as diverse as Merle Haggard, Alanis Morissette and the Black Eyed Peas. The energy of the band's performance is matched in scope by the larger-than-life stage production, featuring a 60-foot video wall, two multistory towers housing dozens of lucky fans and, of course, the world's biggest inflatable lips and tongue. Sound for the tour is provided by Clair Bros.; the audio crew includes Mike Adams and J. Summers on monitors, and 27-year veteran front-of-house engineer Dave Natale, who's enjoying his first gig with the Stones.

After exhaustive planning and practice, the show comes across as effortless and spontaneous. The band and crew spent six weeks in heavy tour prep, rehearsing eight hours a day, six nights a week, at a junior college in Toronto. "All our catering was set up in the cafeteria, and the band set up in the gym with lighting, drape and heavy black carpeting. It sounded great," says Natale. "We sat there for six weeks and just rehearsed. I was in a classroom down the hall with my console and four Clair Bros. S-4

cabinets." Meanwhile, at the Toronto airport, the production staff rented a hangar in which they could practice building the indoor and outdoor stages at the same time. "It was a big hangar, needless to say," he says with a laugh.

On a show of this scale, working out the logistics in advance is crucial, says Natale. "You have to figure out the procedure for load-in beforehand because there's so much going on," he says. "If you're slow, you're going to slow down about fifty other guys who are waiting for you to do your thing so they can do their thing, so it has to be right the first time, every time. There's no time to figure it out at the gig. But there was plenty of rehearsal time for everyone involved, so it was no big deal and it has all worked out perfectly. We went to Boston, we put it all up and turned the P.A. on and went, 'Wow!'"

The three-show-a-week schedule allows for plenty of production time. On stadium days, the crew goes in the day before, starting around 10 a.m., finishing up the P.A. by 6. (The two 60-foot stage towers are built with steel girders and take two days to assemble

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with multiple 20-ton cranes.) "It's a pretty good schedule. You want to make sure that if you have problems, you'll have enough time to fix them," says Natale, stressing that load-in has been smooth on every date—a result of careful planning by production manager Dale "Opie" Skjerseth, stage managers Anthony Giordano, Seth "Burger" Goldstein and the modular setup. He confesses that A Bigger Bang is a bigger production than any tour he's worked on, but, "This *is* the biggest band," he says.

THE MIX: LESS IS MORE

A Yamaha PM4000 handles 44 inputs from the main stage and a Mackie Onyx 3280 manages the 22 inputs from the B stage, along with main keyboard inputs. (Natale carried a 1604 VLZ up until recently, when a visitor from Mackie convinced him to audition the new board.) Countering the elaborate stage production, the audio mix is a "less is more" approach. "I've got one reverb in my rack, but it's off," jokes Natale, who also has two dbx 900 racks with Model 903 limiter modules, a Manley Electro Optical Limiter and two Aphex 612 gates, in addition to that Lexicon PCM91 reverb on standby.

But the sparseness of the effects doesn't mean the production is low-tech: Two Gateway Motion 100 tablet computers run SIA Smart and control 16 Lake digital P.A. processors, respectively. A couple of Alesis MasterLinks and a Midas XL-88 rackmount mixer round out front of house. Although there are 11 people on the audio crew (see sidebar below), Natale sets up the FOH rig himself. "I have to know it's all plugged in right and I know it's right," he says.

Gear selection was worked out during rehearsals, and Natale was ready to roll with the demands of the band. "We weren't really sure how big it would get," he explains. "The

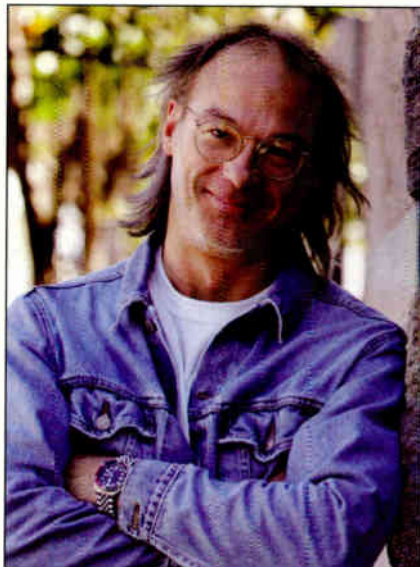


PHOTO: SEVE JENNINGS

Front-of-house mixer Dave Natale

thing you want to say to these guys is, 'Yeah, got it right here,' rather than, 'Uh, I can have it for you tomorrow?' That's why I had 150-plus microphones—because I had a rough idea of what they wanted to see." In the end, the band was completely open, and Natale opted for straightforward mics. "[The band] was very cool; [they let me do] whatever," he says. "Mics are [Shure SM] 57s on almost everything; [SM] 58s on the vocals—regular 58s, that's about it. They're a straightforward band." Other mics include more 57s and 58s on guitars; a Shure Beta 48 headset mic; Electro-Voice RE-20 on bass; Sennheiser 421s on horns; and 57s, Beyer M88, Neumann KM84s and Sennheiser 409s on drums. Other inputs include Radial J48, JPC, JDI and Duplex; and Countryman DIs.

SOUND ONSTAGE

Two monitor positions flank the giant stage. Mike Adams, on stage left, handles the four Stones and bass player Daryl Jones. J. Summers takes care of the three background singers, keyboardist and the four players in the horn section from his stage-right position.

Adams mans a Midas Heritage 4000 and a 3000, with 20 Clair Bros. Lake iOs. Outboard gear used on these monitor mixes includes Avalon 737, Manley ELOP and dbx compressors; Yamaha SPX-990 reverbs; and Eventide H3000s. The band's in-ear system is a combination of Sennheiser G Series and Shure PSM700s.

Summers' monitor rig is based around a Midas H3000 and Mackie Onyx 1620, with 20 TC 1128 graphic EQs, a Yamaha SPX-1000 multi-effects, Drawmer DL241 and DS201 noise gates, Empirical Labs Distressor EL-8xs

and dbx 160 compressor/limiters.

An army of wedges covers the giant stage, including 110 compact Showco SRM monitors, with six Showco Prism Blue cabinets, all powered by Crown 3600 series amp racks. There are also nine Prism SRM monitor amp racks and CBA I-4B and ML-18 subs.

The P.A. is either huge or gargantuan, depending on whether it's configured for an indoor or outdoor stage. Like everything on the tour, the technical package is scalable, designed for streamlined execution. "The P.A. is packed up as an arena P.A. system, then there is another truck of stadium gear that they add on to the arena gear, and those trucks only go to stadium gigs," explains Natale. "So the whole indoor arena package travels together. Anything extra for the stadium is called 'the stadium package.'" This "kit" includes additional stage cabinets, delays and supplemental wedges for the extended outdoor stage.

"This makes it easy because most of the time we only have to deal with two trucks," he says. For arena shows, the Clair rig includes 44 i4s, arrayed in front, side and rear arrays, plus 44 i4Bs, 16 S4 Sub Ls and eight P2 frontfills. Outdoor stadium rigs are beefed up with an additional 20 i4s, 20 i4Bs and 24 R4s. QSC PowerLight 9.0 and Crown 3600s power the i4s/i4Bs, while Carver 2.0s power the subs, frontfills and R4 delays.

Natale insists that he hasn't faced any real complications on this tour. However, he admits that he was a bit wary at first about mixing for the B stage, which rolls 200 feet into the audience—that's 200 feet down-range of the P.A.—as the band plays a four-song mini-set. "I thought to myself, 'You want to play *where?* In front of the P.A.?' Okay, I'll try anything!" he says. "And we rolled out, and holy shit, it sounded fine! It's so weird—there's no feedback, it didn't get hollow, nothing like you would expect. It's not natural! But you know, there's a big delay at 200 feet away. The sound's still coming out of the P.A. system, but with 180 ms of delay, it's long enough to screw you up!"

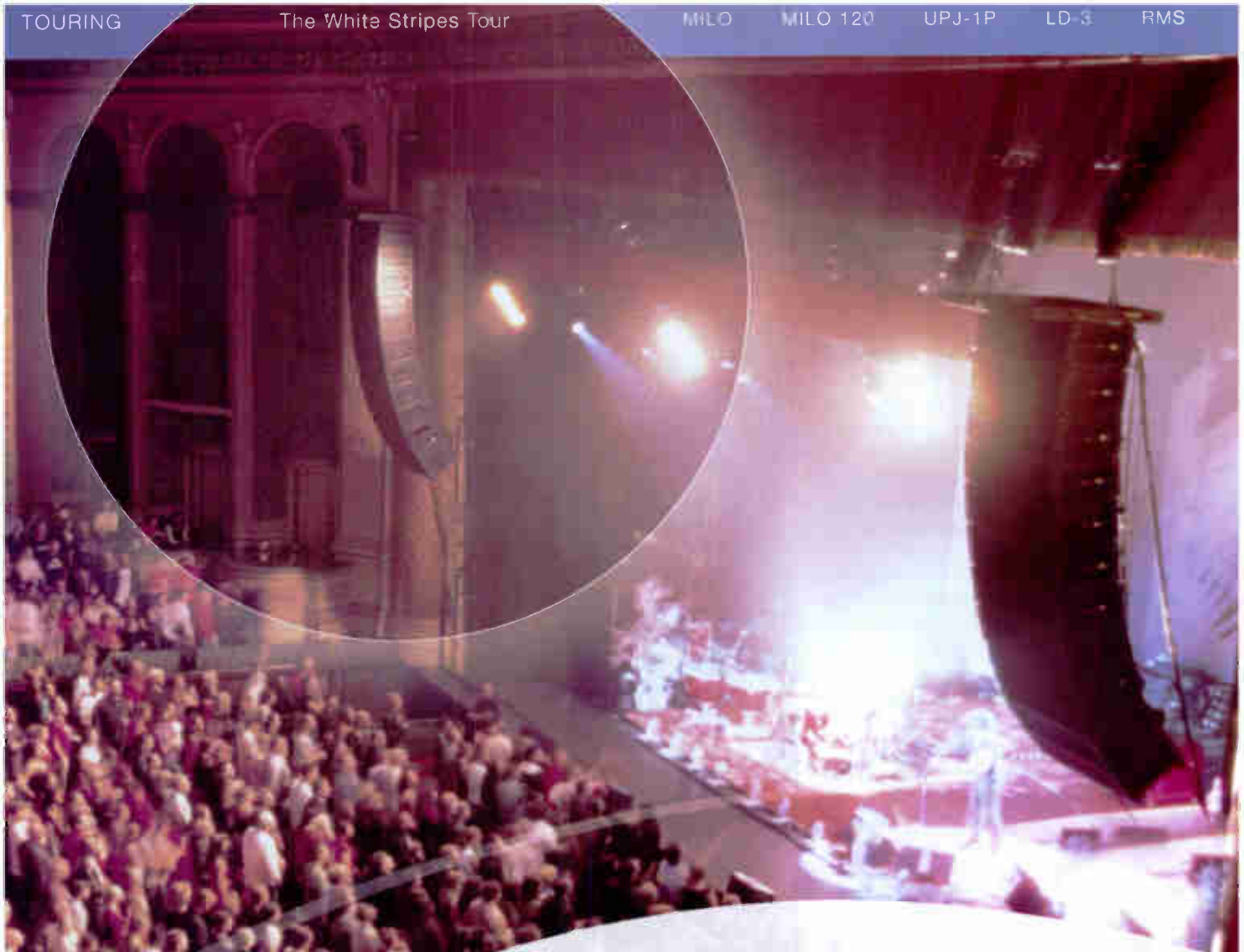
Natale says wedges on the B stage keep the band in line. "The backline wedges and amps on the little stage are fairly loud. They just turn it up, blast away and don't even notice the delay." Amazingly, there have been no audio problems. "We have done it too many times—indoors, outdoors—it's really weird," he says, smiling. In the end, the show really is simple, Natale insists, with characteristic understatement. "It's just really big." Big, indeed. ■

Sarah Jones is Mix's features editor.

An Audio Army

Rolling Stones Sound Crew

Dave Natale	Band FOH Mixer
Mike Adams	Band Monitor Mixer
J. Summers	SR Monitor Mixer
Bob Weibel	Audio Crew Chief
Rich Schoenadel	Monitor Tech
Greg Reynolds	Stage Tech
Josh Weibel	Audio Tech
Dave Nickel	Audio Tech
Jason Panks	Audio Tech
Mike Robertson	Audio Tech (stadium)
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Tony Villarreal & Paul Owen – Thunder Audio



Jamiroquai

By Heather Johnson

The ever-stylish Jay Kay didn't even stop to change his bizarre hat as he wore out a path in front of his band, Jamiroquai, while belting out two hours' worth of high-energy, disco-dance-funk at San Francisco's historic Fillmore Auditorium in early November. Looking like a sci-fi pirate in street clothes, Kay and band played a mix of vintage funk-influenced tunes from earlier albums and upbeat grooves from the new release, *Dynamite*, for the sold-out, keyed-up crowd, who, like their star performer, didn't stop dancing the whole night.

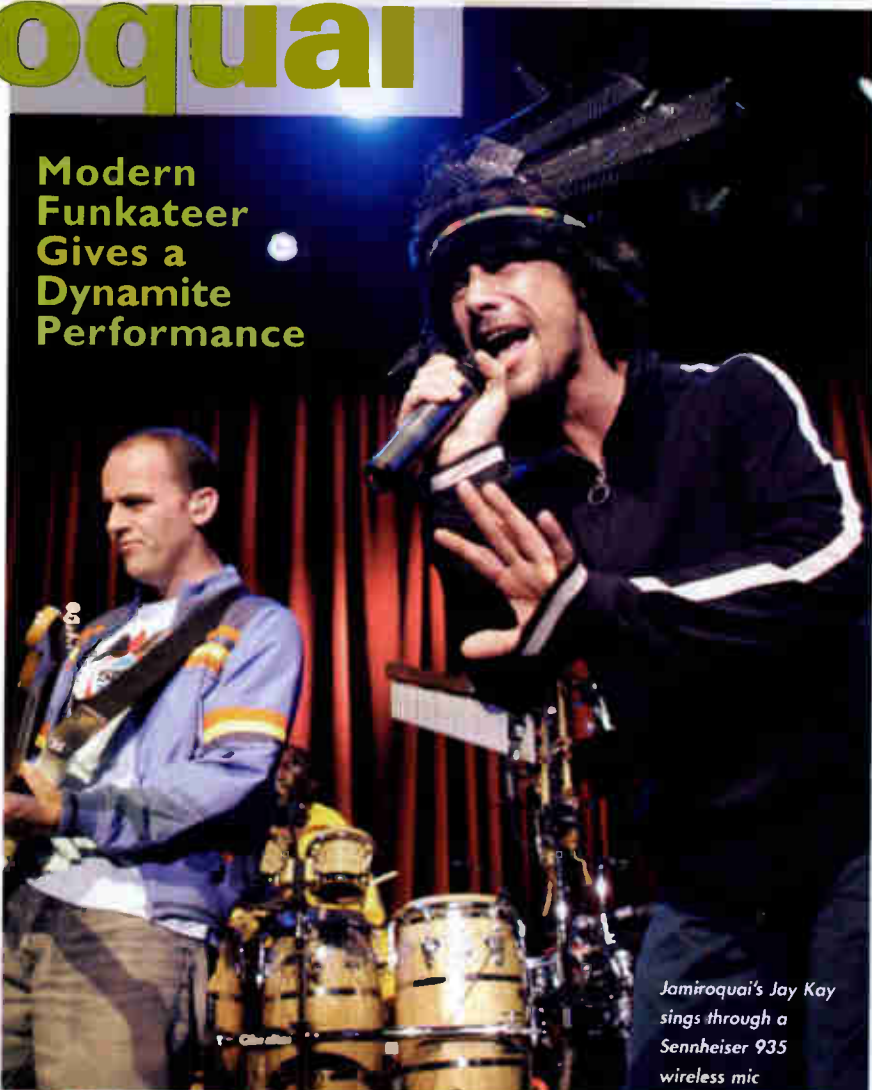
Keeping everything sonically in check are front-of-house engineer Rick Pope (also Jamiroquai's studio engineer), monitor engineer Andrew Thornton and audio tech Chris Peters, all a bit weary but in high spirits as they neared the end of the U.S. leg of a lengthy world tour.

Working with UK-based sound company Britannia Row, Jamiroquai travels with seven trucks' worth of L-Acoustics arrays and other equipment in Europe, where they played mostly arenas. They scaled down for the U.S. dates, relying on house P.A. but bringing their own consoles, mics, outboard and amps. Traveling light makes for easier workdays in the States, but on the first of two nights at The Fillmore, Pope expresses concern over the placement of the venue's house system, which includes three Meyer M3D powered line arrays (flown) per side, three Meyer M3D powered line array subs per side, a Meyer DF-4 powered in-fill per side (underhung) and one flown Meyer CQ-2 for center-fill. "Jay doesn't have one of the strongest voices,

so I need all the P.A. I can get, really," he says. "And we always have it as far forward as possible. But with the P.A. where it is [hung low, close to the stage], it can only go so far before it feeds back. And this is a dance band, so you've got to have it loud; not real loud, but pumping."

Despite reservations, Pope mixes the show sans feedback on a Yamaha PM1D

Modern Funkateer Gives a Dynamite Performance



Jamiroquai's Jay Kay sings through a Sennheiser 935 wireless mic



Front-of-house engineer Rick Pope



From left: bassist Paul Turner and three background vocalists

Version 2 digital system, and records both shows to Kay's Pro Tools rig, which he bought when the band began work on *Dynamite*. "We've been recording every show since 1999, so we have about 250 shows on either DA-88 or Pro Tools," says Pope. "Most of them we may never even listen to, but Jay likes to have them on file."

Pope mixes Kay's vocals, which are

sung through a Sennheiser 935 wireless mic, through a Manley VoxBox and an Eventide H3000. Save for an occasional nod to a Lexicon PCM81 or 91, all other processing comes through the Yamaha desk. Miking is equally straightforward: The three background vocalists are miked with Sennheiser 935s, AKG 414s on drummer Derrick McKenzie's overheads, Beta

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Live mix

98s on the kick and toms (and percussionist Sola Akingbola's congas) and Audio-Technica 4050s on Rob Harris' guitars. Matt Johnson's keyboards go direct and Paul Turner's bass goes through a Ridge Farm Gas Cooker DI box before hitting the PM1D.

Over at monitor world, Thornton works on a maxed-out Yamaha PM5D, with all compression and EQ coming from the desk. The band wears Sennheiser in-ears, while Kay listens to them through 10 EAW SM15 wedges and two EAW SM12s driven by Lab.gruppen LA48 amps with Klark Teknik crossovers "for a really high-powered wedge," Thornton says. "Jay really likes high end, so it's super bright onstage,



Monitor engineer Andrew Thornton takes a break at the maxed-out Yamaha PM5D.

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and those wedges have a really great high-end sound." For sidefills, the group relies on the venue's Meyer MSL3s.

Monitor mixes are kept at a reasonable level. "Jay has a very simple mix onstage," says Thornton. "He listens to most of the band acoustically, and his wedges pretty much have just keyboards and piano, so it's actually not that loud onstage. The drummer uses a Buttshaker 'thumper' to feel the bass drum in his headphones. The band all take a stereo mix from me. They're pretty easy to look after."

After the show, most of Jamiroquai and crew scatters to various after-parties and nightclubs, but Pope sticks around to assess the night's performance. The P.A. handled Kay's voice reasonably well, although he knows how much better it could have sounded had he had their regular system. He doesn't analyze for too long, though. It is only 11 p.m. in San Francisco—time to get another party started! ■

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World Radio History

Stuck on Staind

Rock Powerhouse Takes the Stage With Fall Brawl

By David John Farinella

There's something to be said for longevity, and front-of-house mixer Jeff Gilmer knows this from his experience with Staind. In addition to producing the band's demo, he has mixed Staind for the past 10 years. "It's almost second nature for me."

Staind hit the road in July of 2005 shortly after their latest release, *Chapter V*, hit the streets. During the second leg of the tour, the four-piece headlined the Fall Brawl, which included P.O.D., Taproot and Flyleaf. *Mix* caught up with the tour at San Jose's Civic Theater in mid-November.

Knowing this would be a multiple-band tour, Gilmer selected the Yamaha PM5D for its small footprint and flexibility. The only outboard gear he carries is a Summit 200, BSS 901 and a Shure DFR22—all used on Lewis' vocals.

With racks and stacks picked up at each stop, the tour carries eight Showco Prism subs to augment whatever the venue has hired. "The band tunes so low and the extra subs down in the center really hit home," Gilmer says. "We go through it every day to time-align and tune them to work on the different systems."

Throughout the tour, Gilmer has worked with nearly every line array that's available. "I've seen 'em all," he says. "In the long run, this is better for me because it keeps me on my toes, keeps my chops fresh." Gilmer uses a Clair iO so that he can EQ, compress and limit the different sections of the P.A. as necessary.

Over in monitor world, Scott Boculac is balancing the fact that Lewis and Wysocki are using personal monitors (Shure PSM700s with Ultimate Ear UE7 earpieces), while Mushok and April are on wedges. "I like mixing for [personal monitors], but it's a matter of personal preference," Boculac says. "If [the artists] don't like it, it's not for me to say what's right or wrong. It's whatever the artist is most comfortable with and whatever is going to help them give the best performance."

The tour is carrying the entire monitor system, which includes a Yamaha PM5D-RH console, Clair 12AM II wedges with Crown power and a Clair iO crossover. Sidefills are a pair of Showco Prism Blue cabinets and a Prism sub. In addition to the personal monitors, Wysocki gets a pair of Clair 12AM IIs and a pair of Clair ML18 subs for monitoring.

"The trickiest thing with these guys is that the drummer has a signature style," Boculac reports. "He'll play nothing but cymbals for measures at a time. To keep in time, the guitar player has to hear that, so I'm constantly riding my overhead mics, my rides and hi-hats into that stage-right floor wedge because he's not [using personal monitors]. The way I set up the board is that I have everything I need for my stage-right guys by my left hand, and with my right hand, I mix the in-ears for the singer and drummer."

Shure has long been a microphone supplier for Staind. Lewis



Clockwise, from upper-left: vocalist Aaron Lewis, monitor mixer Scott Boculac (L) and FOH engineer Jeff Gilmer, bassist Jahanny April, drummer Jon Wysocki and guitarist Mike Mushok



is singing through a wireless U2/U4 Shure 58, although an 87 may be tapped to eliminate some electric guitar leakage that's finding its way into his mic. Wysocki's kit gets a Beta 52 and SM91 on the kick, two SM57s on snare, SM81s on hi-hat and ride, SM98s across the toms and KSM32s for overheads.

Mushok's guitar setup includes two amps: a Marshall JMP pre-amp and a 9200 Power Amp for a classic rock sound and a Diezel VH4 for a more metal sound miked with SM57s and Beta 52/KSM32, respectively. "I get him to punch through as much mid as he can because he's tuned so low that without any mids, it's really difficult to fit into the mix," Gilmer says. Bass is captured pre and post. April uses two Ampeg SVT-810E cabs with the horns disabled, two SVT-18s and a 2-inch JBL horn. Gilmer uses a Beta 52 on the SVT-810E cabinets and a KSM32 on the horn.

The key from Gilmer's point of view is creating continuity between the sound from each of Staind's five releases and what's happening onstage. "I don't mix the band live the way the record sounds," he says. "I try to interpret it my own way, but I try to keep it consistent with what the band sounds like so that when you hear them, you say, 'Oh, yeah, this is Staind.'"

David John Farinella is a San Francisco-based writer.

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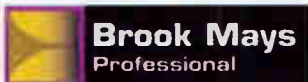


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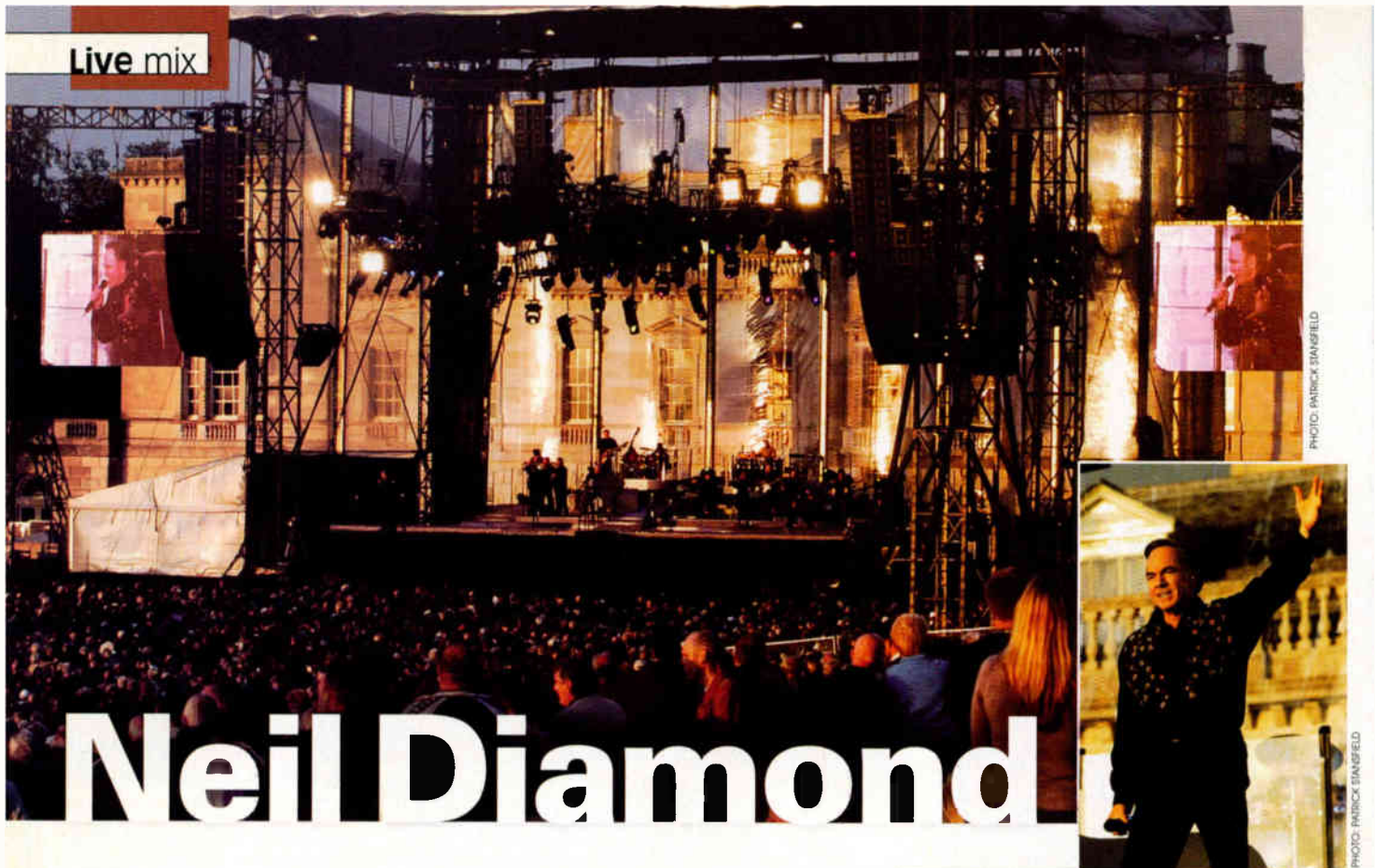


PHOTO: PATRICK STANFIELD

PHOTO: PATRICK STANFIELD

Neil Diamond

Digital Technologies Take the Stage

By Mark Frink

Neil Diamond's 2005 world tour started "down under" last March, played the UK in May, began its North American run last summer and will continue with more dates (TBA) in 2006. Diamond, who gave the Rolling Stones, Paul McCartney and U2 a run for their money, has never been

known to take the predictable route. Though he had a new release to promote (*12 Songs*), his set list bucks the trend of "plug the new album" touring, and the list of audio "firsts" cited by Stan Miller, Diamond's longtime concert sound designer/front-of-house engineer, could fill a page.

Miller was an early proponent of the benefits of digital consoles and mix automation in touring applications. He took the Yamaha PM1D console on its first major tour, and before that used a modular system of 01V mixers. On this outing, both FOH and monitors are based around Yamaha's PM5D, using outboard AD8HR mic preamps instead of onboard RH head amps, with DM64N mix engines as splitters.

Digital submixes from both keyboardists, two guitarists and the bassist come from individual Yamaha 01V mixers. Another 01V mixes the talkback system, with inputs coming largely from Audio-Technica ATM35 clip-on mics at each musician's position.

Monitor engineer Bernie Becker uses an Aardvark word clock generator and a Lucid word clock distribution amp to ensure stability among all digital systems. With nearly as many lines carrying AES or word clock as handling analog signals, the copper snakes, sub-snakes and XLRs were built with digital-rated wire, which, according to Becker, im-

proves the quality of analog transmissions.

All musicians have Aviom A-16CS personal mixers to control their in-ear mix. "It certainly makes it nice for the band," Becker says. "I spend 110 percent of my time looking at just one guy." The tour uses Shure PSM700 and PSM600 transmitters, including one used for a wireless feed to the press mult. Diamond uses Sensaphonic two-ways, while the rest of the band uses mostly Etymotics with a mix of custom molds and foam tips; a couple performers use Future Sonics and Precision Labs. Diamond's in-ear mix employs an Avalon VT-747 and an SPL DynaMaxx compressor/limiter.

Becker is also the live recording engineer, using 64 tracks of Pro Tools|HD running from a Magma PCI expansion chassis with Digidesign 192 I/O interfaces. Ambience mics are three Crown SASS-Ps across the front of the stage, a couple of AT-897 shotguns at each side and a pair of AKG C 747 mics from the downstage truss. Diamond tour veteran Greg "Chico" Lopez assists on monitors.

Other than the SM57 used on snare, wired mics are nearly all Audio-Technica, with ATM35s for toms and percussion, an ATM25 for kick, a 4051 pencil condenser for hi-hats and two 4033s for overheads. The four-piece horn section (trumpet, trombone, tenor and baritone sax) uses ATM4055 vocal



PHOTO: YAMAHA COMMERCIAL AUDIO SYSTEMS DIVISION

At the Yamaha PM5D, sitting (L-R): Bernie Becker and Stan Miller. Standing (L-R): Art Isaacs, Lonnie Wayne, Greg Lopez, Fumi Okazaki and John Drane



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mics. Wireless mics for Diamond and his background singers are Shure UHF with Beta 87 capsules. Lonnie Wayne checks frequency coordination with a WiNRadio analyzer and assists at FOH.

Miller's FOH mix position has been simplified, with nearly all processing done within the PM5D, but there are still three computer screens on his right: an Apple laptop for the Pro Tools 002 interface providing walk-in music, a Dell for Smaart Live and a Sahara iTablet for wireless Lake Controller and Crown IQ software, operated by senior system engineer John Drane. Besides the drive rack, the only outboard FOH processing is the dbx 120 Subharmonic Synth. Five Lake Mesas are fed digitally from the PM5D. The sixth is a spare, with an analog input from an FOH Aviom mixer feeding the other five, with analog as backup.

While the "universal package" was leased from Maryland Sound, it's now owned by Diamond's Arch Angel corporation. Racks and stacks are provided by Maryland Sound. Art Isaacs assists with flying the system and rides herd on amp world. The MSI stacks are powered by a dozen racks of Crown iTech 6000s on each side of the stage. Each rack has an ATI reclocking digital distro amp, with speaker management performed by the iTech's onboard 32-bit floating DSP. Miller notes that their frequency response differed from an analog drive system, necessitating the re-creation of VerTec presets. Sam Helms of Sigmat Corp. provided hours of testing time to "get the system presets right."

Diamond's arena show employs 16-box left/right main arrays of JBL VerTec VT-4889 cabinets with adjacent eight-box VT4890A sub arrays and 14-box 4889s covering the outsides. (This sold-out show is seated all the way behind the stage.) Twelve-box arrays of the smaller 4888 cabinets cover each side and two eight-box arrays cover the rear. Two more pairs are flown as sidefills to cover the stage. Individual 4887 compact enclosures are used across the front, with an additional one off the stage corner to hit the gap under the mains. A center cluster of six 4888s is used just for Diamond's vocal.

Lighting designer Marilyn Lowey teamed with Miller to create the downstage arena truss design: a "v" shape, angled to clear the main speaker arrays, while leaving a gap for the center cluster. The Diamond crew is the epitome of professionalism clear down to "third man" Fumi Okazaki, an industry legend for efficiently doing the work of several normal stage techs. ■

Mark Frink is Mix's sound reinforcement editor.

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World Radio History

Production Logic

Festivals and “Family” Through 28 Years

Editor's Note: Most sound reinforcement press focuses on big rock 'n' roll tours, massive stadium installations and the handful of companies that tackle the Super Bowl, the Grammys or Live 8-type events. But hundreds of audio production companies load in and load out day to day in mid-markets across the country, providing the backbone for our live sound industry. We call them “Local Crew.”

In 1978, Kaj Kline was the embodiment of the “typical” audio professional: He had a small recording studio and a piecemeal sound system. By day, he worked at Leo's Pro Audio in Oakland, Calif.; on weekends, he'd handle small gigs in and around the San Francisco Bay Area. Then one day in 1978, he got a call from the Concord Pavilion, a local 8,000-seater, to rent a piece of equipment, and Linear Sound, which became Production Logic, was born.

From the beginning, Kline, who formed the company with his brother Kent, had established it as a full-service operation, meaning that when he picked up venues like The Stone in San Francisco or Berkeley's Keystone, an engineer and maintenance came with the package. In those days, it was pretty much exclusively rock 'n' roll.

Then in 1985, Kline purchased a Turbosound rig and jumped overnight into the big-time, to the point that a young band by the name of Metallica hired the company for its '85 and '86 tours. In 1986, Production Logic picked up a small festival, Reggae on the River, in Northern California, and the following year added the Strawberry Music Festival up in the Sierra Nevada Mountains.

“Reggae on the River is still probably the best event that we do—a real feather in the cap,” says Janine Kline, president of Production Logic. “I still get a charge out of it. Even my kids do!” (This writer can testify to the family atmosphere in Reggae on the River's two-story sound and lights compound; also, he can testify to the tight, active, well-balanced and never-too-bottom-heavy mix by lead engineer Emmet Foley. It's as good as sound gets outdoors.)

“It's been such a pleasure to mix Reggae on the River,” Foley says. “This is some of my favorite early music, and the whole vibe with peace, love and happiness fits in with my thoughts on family and friends. Musically, the festival can be a challenge because we have short set changes and the dynamics and instrumentation can vary radically between bands. But the music itself maintains its gaps, where each individual instrument gets its own identity, unlike a layered rock show. That allows room for the mix to breathe. Plus, we got the Adamson Y10 line array last year, and these new technologies are so much cleaner and so much better that once you set up, you're free to mix.”

After attending various shootouts with line array systems, Kline, Foley and crew chose the Adamson package



Above: the late Kaj Kline at Strawberry Music Festival. At left: Emmet Foley, the heir apparent

largely because, as Foley says, “It had a beautiful vocal presence, the best we heard. And it gives you your best starting point for tuning no matter what venue you're in.” The company also purchased a Midas Heritage 3000 last year—what Janine Kline laughingly calls a “big-boy board.” Set for purchase this spring is a small-footprint digital board to work on smaller events, such as those they do in the Rotunda of Oakland City Hall (Mayor Jerry Brown's wedding, for example), and a few more Adamson subs.

By the early 1990s, the company started to expand into events, installs (including an ongoing summer season package at Villa Montalvo winery), press conferences, corporate, radio promotions and a wide variety of one-offs. They added lighting, pipe and drape, staging, etc., to become a true one-stop shop for event and sound needs.

Sadly, Kaj Kline, the father figure, mentor, teacher and friend to a generation of Bay Area production pros, passed away in 2004. Janine Kline, his wife, has carried on in the family tradition, with an emphasis on treating her people right. “We pay a little better on the scale, which helps,” she says. “But Kaj always treated people fairly, treated them with respect. He wasn't a screamer or a yeller. He was a teacher.”

Foley knows that as well as anyone. Though he's had a recording studio, Dogged Out Productions, for 15 years, he came to Kaj Kline in the late '90s because he wanted to learn. “He took me under his wing and taught me the industry standard,” Foley says. “He loved to teach. If you spent a day in the shop with him, you'd learn more than you would in any other situation. He taught the foundation and the system—from the truck pack to the show itself. He loved the industry and we all dearly miss him. I'm just honored to be grasping the torch.” ■

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A Night at the Opera

Replicating
Theater Sound
Outdoors

Bag End mains and delay towers handled the 12,000-plus audience.

By Nick Russell

"There's probably no indoor theater this big in the world hosting live opera," says Allan Naplan, referring to the 12,000-plus crowd gathered for the fourth annual Opera in the Park held in Madison, Wis.-based Garner Park. The event (held July 16, 2005) was a smashing success for the Madison Opera, a company Naplan presides over as general director.

Featuring top-name talent from around the globe, Opera in the Park offers everything from the triumphant tones of "Nessun Dorma" from Giacomo Puccini's *Turandot* to the ensemble of Alexander Borodin's exquisite *Polovtsian Dances*. A major challenge was determining how to best bring even, intelligible coverage to the huge open-air crowd without losing the natural sound vital to the music's character. Equally daunting was the task of building an acoustical environment that would ease the transition to performing outdoors for an orchestra, choir and featured vocalists unaccustomed to working in large, open spaces, not to mention with sound reinforcement.

The Madison Opera tapped the volunteer resources of Bag End Loudspeakers and nearby Full Compass Systems in Middleton, Wis. Collaborating on a minimalist approach to a job mindful of both onstage and audience needs, the companies worked together to develop a sonic blueprint using only a smattering of premium mics and an all Bag End house P.A. system.

"Sound reinforcement can be brought to a large outdoor concert that approximates the aural aesthetics of an indoor hall," says Full Compass founder/front-of-house engineer Jonathan Lipp. "Contrary to what you may think, less is actually more in this application when it comes to the number of microphones used. Using a lot of mics in a situation like this, it's nearly impossible to obtain a proper balance. For example, if you have 15 violins in the orchestra and you use 15 mics—or even 10—it would be impossible to re-create the blend you'd get by using only one over the whole section. Some of the violins would be too loud and others would be too soft."

Practicing what he preaches, Lipp came to this year's Opera in the Park with only 10 mics to cover the 55-piece Madison Symphony Orchestra, 63-piece Madison Opera Chorus section and five vocalists out front. For the orchestra and choir, a pair of Shure KSM44s were mounted in a center/forward position over the violins and violas.

Jonathan Lipp
at the FOH position



Using the mics in figure-8 mode, he experimented with a number of placements until he obtained the right sound. Three more backline KSM44s contributed to the mix, as did a Neumann KM120 on harp. Out front, the vocalists stood in front of four KSM44s stand-mounted low and tilted slightly to the rear.

Mixing from a 16-channel Yamaha 01V96 digital console, Bag End's Henry Heine confided that once he and Lipp had set up and tuned the system, there was little to do out front when the lights came up and the musicians took the stage. "Basically, you just have to keep an eye out for when the vocalists come onstage and turn the appropriate mic on," Heine notes. "Other than a little reverb coming from the Yamaha mixer, we didn't use any processing or effects. With three Crystal loudspeaker enclosures per side, we delivered a solid stereo mix for the first 140 feet. Beyond that, self-powered P-Crystal enclosures delayed in mono atop towers took over for the rest of the area of coverage."

With the house arrays buttressed at the low end by a pair of Quartz subwoofers, monitoring for the vocalists was handled by Sapphire wedges. Filling in with added reverb and support, a pair of TA6000 cabinets was hung along a middle truss above the orchestra and choir. "These provided a nicer feeling for the performers," Heine remarks. "That's the true purpose of those upstage monitors: to furnish a connection with the front. Regardless of what we do, we'll never be able to give them the full effect of being indoors in a concert hall. But with a little thought and planning, we've at least fooled them into thinking they are in some kind of indoor acoustic environment."

"Distilled to its bare essence, the real function of the sound system is to simply extend the reach of the performance," Lipp adds. "There's no exotic mixing, no complicated cues to follow. We just use quality components from the mics to the speakers and try to make it as transparent as possible. The rest happens onstage." ■

Nick Russell is a Chicago-based writer.

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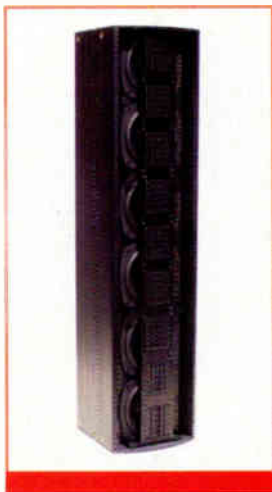
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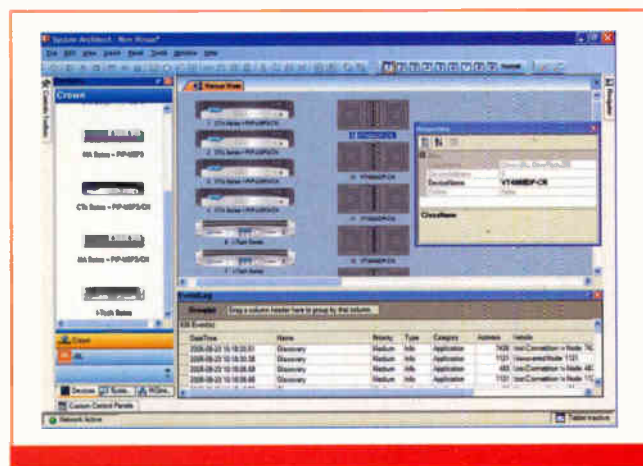


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Good Night, and Good Luck

TV News History Comes Alive

By Blair Jackson

Good *Night, and Good Luck* is completely unlike any other film currently playing at your local multiplex. Shot in a sort of faux vérité black and white to evoke the world of CBS television in the 1950s, director/actor George Clooney's thought-provoking and artful film is about ideas more than actual events. It depicts the controversial and courageous decision by reporter Edward R. Murrow

clever bit of legerdemain that posed some technical challenges to the sound team that worked on *Good Night, and Good Luck*.

Speaking generally about the approach to sound in the film, co-supervising sound editor and re-recording mixer Aaron Glascock notes, "It's meant to play almost like a documentary. There are things that are missing from the sound that we would normally put in a feature, but we went for a

He had a lot of moving targets in this film, and Ed did a marvelous job."

Schulkey and Glascock have worked together on a number of films in different genres, including *Blade: Trinity*, *Criminal*, *Under the Tuscan Sun*, *Insomnia* and Clooney's previous directorial effort, *Confessions of a Dangerous Mind*. Generally speaking, Glascock has been involved mostly with effects and Foley, while Schulkey's resume is heavy on dialog and ADR work. For this film, Glascock also mixed the music, which periodically appears in the film as live performances by jazz singer Dianne Reeves and a small combo. Lance Brown was the third mixer on the re-recording team, mixing Foley and managing the stage.

"The music was all recorded on the set live," Glascock says. Adds Schulkey, "You're seeing the sync take of it. They didn't shoot anything to playback. Even that opening shot, where you travel up in the elevator and then move all the way down the hall into the studio [with the music audible the whole time]—that was a live take. Clooney really likes the challenge of doing something live."

The job of cleaning up the audio from the vintage footage mostly fell to Schulkey. "Our post supervisor, Peter Phillips, spent a lot of time trying to find the best possible sources for the particular clips used in the film," he says. "For some of the material, they found film negative in archives and re-transferred the audio off of that. Some of it was as bad as finding a 3/4-inch video tape of a telecine of something several generations down. So it was all over the map. Our goal was to make the vintage footage sound as it would have at that time, under the circumstances in which it was being viewed. News footage had audio recorded directly to the optical track in the camera using field mics. Our movie sometimes shows it being viewed in a utility-grade screening room or from a 16mm projector, so it would not have been beautiful-sounding in those scenes. But the footage would have been brand-new—it would have just come out of the lab, it would have been first-generation, it wouldn't have had dirt or splices or flaws. We wanted it to sound new for its time, but

—CONTINUED ON PAGE 99

PHOTO: ANDREW SCHWARTZ/UNIVERSAL STUDIOS



and his colleagues at CBS to challenge the crusading anticommunist Wisconsin Senator Joseph McCarthy, whose heavy-handed tactics during the 1950s "red scare" ruined many careers and held countless people in and out of government in a grip of fear. The movie purports to show what went on behind the scenes at CBS and re-creates parts of a number of Murrow's historic telecasts dealing with McCarthy.

An interesting choice that Clooney made was to have McCarthy appear only in original news footage rather than having an actor portray him. The audience mostly sees his speeches and Senate committee appearances on TV monitors in the CBS studio or integrated into Murrow's broadcasts, with the actor playing Murrow (David Strathairn) commenting on or interacting with the "real" McCarthy. It's a

very focused presentation because George [Clooney] didn't want anything to distract from what was being said onscreen."

"Clooney's intention, and it shows in the camera work, is that he wants you to feel like you are in the room with those people and it's just happening at this moment," adds co-supervising sound editor and re-recording mixer Curt Schulkey. "The camera isn't always dead-on in focus on people. There are people who are talking off-mic a little bit, and you have things like the odd door opening at an inopportune time. It gives the feel of the haphazardness of reality, and we were trying to keep that in the sound."

Schulkey notes that production sound mixer Edward Tise "had lots of challenges with a room full of actors talking over each other, not always rehearsing everything. He had to scramble a lot. Nothing was looped.

Entering the World of Narnia

Mixing in the Sounds of Quiet, the Sounds of Rebirth

By Tom Kenny

Movie audiences certainly hear the big scenes—the battles, the sword hits, the crowd roars with grunts and groans. The sound effects demand attention and, coupled with score, provide the energy and propulsion that take an epic film to the next level. But what most filmgoers don't realize is that it's the quiet scenes that set up the big scenes; it's the contrast and the balance of sound that ultimately provide the impact.

The Chronicles of Narnia: The Lion, the Witch and the Wardrobe brought the challenge of big and small to the re-recording team at Buena Vista Sound. There is a large lion and small beavers; centaurs and mice; a White Witch and armies facing off with the fate of the world in the balance. And yet, when the four Pevensie children step through the wardrobe and enter the winter world, all is quiet.

Before they enter the magical world, however, the children spend much of their time exploring Professor Kirke's mansion, far away from war-torn London. "When they're running around the house being chased, we have this very elegant Foley track of the footsteps guiding and chasing them coming from various speakers," explains lead re-recording mixer Terry Porter, a 25-year veteran of more than 140 films, including many of Disney's animated offerings of the past two decades. "It's an

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extremely tricky sequence to sell, when pictorially the kids are running down this hall and you have these offstage footsteps that you never see driving them to the room where the wardrobe is. It has this wonderful percussive music and then these footsteps that come out of the left-surround and right-surround and front. It accelerates and decelerates. Our director [Andrew Adamson] orchestrated it, every single footstep, to the pace and the angle. My effects mixer, Dean Zupancic, did such a great job with the various reverb room sizes to give this illusion of getting closer, getting farther. I think we sold the fact that whatever this footstep is—whoever it is—is getting them toward the wardrobe.

"Then they finally make it through the wardrobe and they fall into this quiet, stark magical enchanted land of Narnia, the first time with Lucy by herself and the second time with the four of them," he continues. "The approach we took was to have virtually no backgrounds. There's just this low air. The lamppost with the flame—every footstep, every sound is articulated. We have thinned it out so that every sound that is in there, you hear it. There's not 20 layers. It's very specific, very beautiful. The Foley tracks on this

show are incredible. Dan O'Connell and his crew at One Step Up did a fantastic job. The footsteps in snow are so good; the delicate sound of snow coming down is there. Every movement. Then, as the children get into it, we expand. We go to Mr. Tumnus' house and there is a fireplace. Then we get to areas where we re-introduce sounds of wind, but never quite as much as you'd expect in the real world. We keep it a little askew."

To be sure, the track isn't all about silence, as Harry Gregson-Williams' score (he worked with Adamson on *Shrek* and *Shrek 2*) drives much of the visual, clocking in at a little more than two hours. The score was delivered on seven 5.1 stems—orchestra, choral, percussion, synth, etc.—"well-balanced and beautifully mixed, the best I've had music laid out for me," Porter says. First-call music editor Adam Smalley was on the stage with his Pro Tools rig, making fixes throughout the 10-week pre-mix and final.

The film's sound was supervised by two-time Oscar-winner George Watters, with sound design by Oscar-winner Richard Beggs, an ace team that Porter says combined the best of Beggs' design chops with Watters' creative and



Lead re-recording mixer Terry Porter

organizational genius. When it came to creature voices—and there were a lot of them, some physical and some created in the shops at New Zealand's WETA Productions—both Watters and Beggs covered them, as did the ADR and group ADR teams led by veteran Kimberly Harris. (Much of the group ADR was recorded outdoors, in stereo, sometimes with run-bys so that Porter could take advantage of the Doppler effect.) In big scenes such as the sacrifice when creatures abound, Porter avoided the potential wash by carefully picking and choosing.

"Some of your animal characters just speak," Porter explains. "Mr. and Mrs. Beaver, the horse centaurs—they speak and they're non-processed; just regular voices that we supplement with organic sounds in and around them. Then you have special characters who speak and have been slightly treated. Then the White Witch's first-in-command is a big guy with a certain character, but it's integrated beautifully with these large burrowing, bellowing animal sounds so that he goes from sound effects to talking back to sound effects all at once."

While the triple coverage allowed Porter

and Zupancic to duck and weave—filling out lows, mids and highs with voices, grunts and roars—the sound of Aslan, the mammoth lion, was largely accomplished by the actor. "I wish I could say that I took Donny Osmond and made him threatening, but I didn't have to," says Porter with a laugh, in reference to his work with Robby Benson as the Beast in the Disney classic *Beauty and the Beast*. "They cast Liam Neeson as Aslan, and he has this wonderful, low resonating voice. I worked with EQ, but no real processing—just to keep it down with these deep chest tones. Along with Richard [Beggs'] lion roars, the integration of the two is just beautiful."

While he didn't have to fiddle much with Aslan's vocal, Porter did take a rather aggressive approach to the dialog in general, mainly to clean up production (a very busy set) and, as he says, "make it sound like the ADR so that if the director wants to create silence, I don't have rumble in the track."

The film was finally mixed in six weeks at the DFC on Buena Vista Sound's main stage, with up to seven Pro Tools rigs adding sweeteners and making fixes to accommodate last-minute CGI and picture

changes. Because the film was being simultaneously released day and date in 22 languages and 38 countries, the stages at Disney were running day and night. Keith Rogers, a talented young mixer whom Porter has been helping to groom, took over the C stage to handle some fixes and finish up some predubs. As Porter and Zupancic finished a reel, they would send it to the C stage for the M&Es. "I have a lot of breaths, grunts and crowds in the dialog stem. I was able to copy the automation from the theater and transfer it to the 'C' stage console for Keith. By using Pro Tools and muting any English, the automation replicated the audio exactly the way it appears in the domestic release.

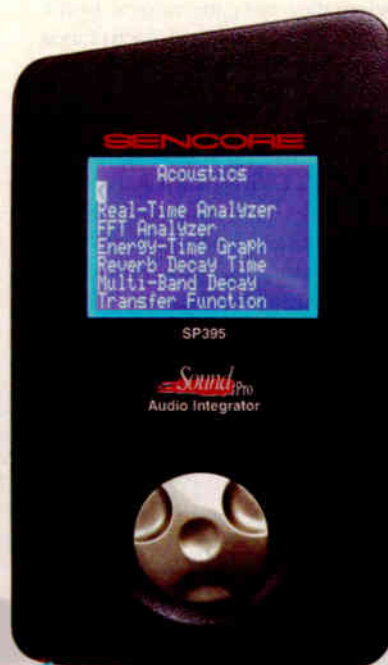
"I love the Pro Tools and what it can do on the stage," he continues. "I really try to make it a collaborative effort. We have a delineation of our expertise and it works really well. Just because the editors can do a ProControl mix doesn't mean it's going to be better or equal to an old-fashioned predub on a traditional stage. We recognize that at Disney, so we're using Pro Tools and the digital pipeline that we have with our servers as a tool to get to the proper stage of mixing." ■

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Good Night

—FROM PAGE 96

not better than it could have sounded.

"We used all manner of tools, from simple splicing and volume-mapping all the way to some fairly fancy plug-ins for restoration," Schulkey adds. "Sony Oxford has a really good package that has a de-clicker, a de-popper, hum removal; these are each separate TDM Pro Tools plug-ins. They also have a broadband noise reducer. The funny thing is, I know plug-in makers see their restoration tools as tools for restoration of vintage audio. But in actual fact, in *all* the movies I've ever worked on, all the dialog work is a restoration process, because out on the set, there are always situations that make [the production sound] less than pristine. In post-production, we're always removing hums, buzzes, traffic, movement, crackles, snaps, static and broadband noise, so it's not unusual to use those 'restoration' tools on brand-new audio, and it wasn't very different to get into the vintage footage and have to do the same kinds of things. We had additional help from the Warner Bros. restoration department. Robert Cort and his team did a pass on the vintage audio and made still another level of improvement."

In places, Schulkey and Glascock had to *add* noise: "In one vintage clip, newsman Joe Wershba interviews Milo Radulovich. Robert Downey Jr. plays Wershba in the film, so we had to remove Wershba's voice from the old interview and replace it with a well-recorded Downey. We had to make Downey's voice sound as distorted as the vintage footage," Schulkey says. "Throughout the film, we utilized more plug-ins, including a lot of [Trillium Lane Labs] TL Space IR processes—impulse-response convolution reverbs—to make it sound like it was coming out of the speakers.

"Then there were times when you had an actor—David Stathairn—sitting in a studio with a lot of old televisions running and cameras that were kind of functional, and we ended up with some buzzes and hums through his dialog, too, which some of those [Sony] tools could remove really well. So we removed those hums and buzzes [and] put in different hums and buzzes which were more interesting or which had some rhythm, and we could control their level."

Glascock and Schulkey did their mixing on Stage 6 on Warner Bros.' Burbank, Calif., lot, "which they had just renovated with a [Digidesign] ICON console," Glascock says. Working under what Glascock describes as an "austere" budget, the post sound team had to work quickly and efficiently—there wasn't

even a temp dub. "One thing that certainly helped us is that the picture editor, Stephen Mirrione, is one of the most disciplined editors we've worked with," Glascock says. "When the movie was turned over to us, it was in very good shape; there weren't a lot of changes. It was cut and mixed in the short period of about eight weeks, which is fast for a feature film."

"Everyone had to be pretty concise about what they were doing," Schulkey adds. "And George is a very confident director. He knows what he wants and he's very good to deal with because he doesn't waver." ■



Preserved in photos (from left): Lance Brown, Aaron Glascock and Curt Schulkey



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Not a Mic Preamp Shootout

Putting Overload Characteristics to the Test

I just completed seven exhausting weeks of testing mic preamps for an educational video. It started last fall when I was asked to do a preamp shootout. I'll admit to shunning the shootout. Lynn Fuston of 3D Audio in Nashville has a well-deserved niche in that area, so there's no reason to reinvent his wheel. I always wanted to explore the fringes of preamp performance—overload characteristics and noise floor—deviating from just about every convention in the process, starting with one mic driving six preamps.

Typically, mics have a 150-ohm to 200-ohm output impedance. Ribbon mics are typically 50 ohms, while the "load" (a preamp's input impedance) is about 10 times higher and therefore considered a "bridging" input. With that range as reference, the six preamps represented a potential load of between 250 and 333 ohms. Two mics were tested to observe their reaction to an eight-preamp load—a Shure SM57 dropped about 10 dB as compared to a nearly 4dB level drop for an AKG C 414 EB. (See Figs. 1a and 1b.)

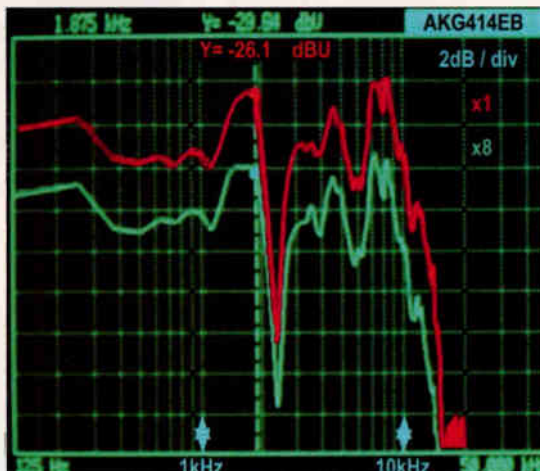
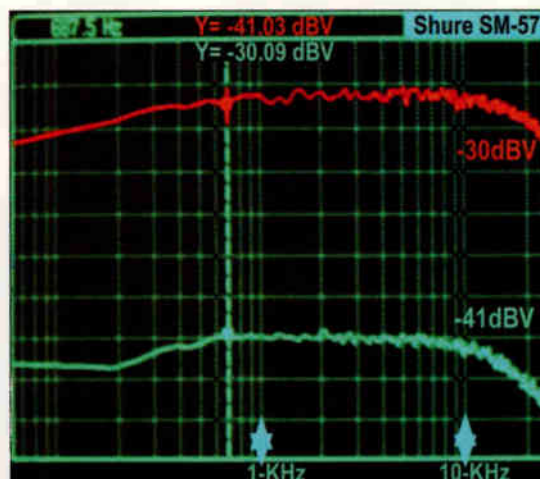
The goal was *not* to compare preamps for their sound under normal conditions as much as it was to observe their overload characteristics, each responding to the same stimuli—a snare drum from soft to loud, for example. One mic driving six preamps was not going to sound the same as it would solo. With their inputs tied together, six mics would likely cross-pollinate whatever character that part of the circuit may have contributed. That said, I investigated some of the interface alternatives.

Starting with a hard-wired mult box, the next step was to add a resistive network to isolate the preamps from each other. This had a dual effect as both a signal attenuator (pad) and presenting a similar load to the mic as if it were driving the preamps directly, further lowering the signal. And so the third driving option was to recover the loss by inserting a neutral preamp—a Crane Song Flamingo—between the mic and the resistive mult box. If that weren't enough, I also dangled six Shure SM57s about two feet over a snare drum, each directly driving a preamp. Other mics included the Josephson C617SET (omni), DPA 4006 (omni), and Nady TCM-1050 and TCM-1150. (The Nadys are multipattern tube condensers.)

Level matching was confirmed by inverting the polarity of one track so that only the difference between it and the other tracks remained. This also revealed phase shift between pre's of different topology, whether a device was terminated or not, and distortion artifacts that would have been masked by the intensity of the snare hits.

THE USUAL SUSPECTS

I evaluated several preamps before selecting the six that represented three overload categories: linear (hard clip-



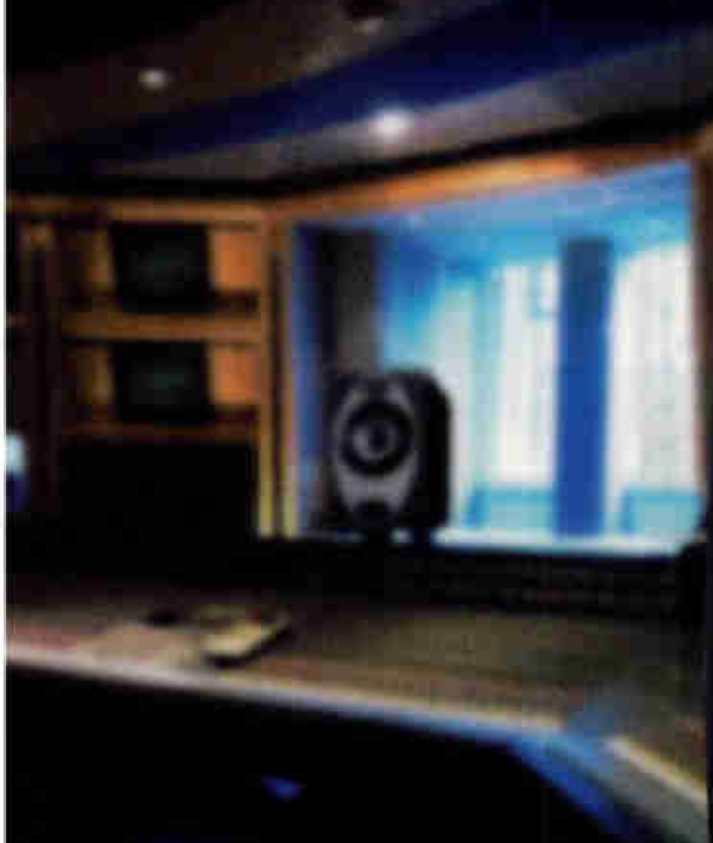
Figures 1a/1b: two mics driving one Great River MP-2NV preamp (top, in red) and eight preamps (bottom, in green). Note pink noise was electronically injected into the Shure SM57, while the AKG C414 EB responded to an acoustic stimulus (hence, the funky curve).

ping, typical of op amps), medium (vintage solid-state) and soft (think tubes). No topology has exclusivity on these features, but the inherent linearity of op amps and digital audio requires us to pay much more attention to headroom—perhaps most obvious with drums.

The available solid-state preamps with a known "medium" overload characteristic included the Neve 1066, 1073 and a modified 1272, along with a Great River MP-2NV and a Telefunken V672.

The first step was to determine the point at which the unit's front end went into overload. Not only did I confirm the MP-2NV and the 1073 distorted in the same way, but with minor power supply tweaks, they were able to do

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so at the exact same place. See the table for the full list.

The linear preamps tested—Mackie and API—are IC- and discrete op amp-based, respectively, and were not allowed to clip. The Crane Song Flamingo plays both sides of the fence with its optional Iron (transformer) and Fat settings. An original UREI LA-3 was also used as a preamp because it has 50 dB of gain when the input attenuator is “out.” That left the rather obscure Pultec MB-1 (similar to the Altec 1566A) to represent the vacuum tube’s sonic contribution, which was modified to run with and without negative feed-

back to be both clean (stock) and colorful (no feedback).

HEADROOM, AND THEN SOME

The next step was to set levels so that the preamps would overload within 3 to 6 dB of the maximum allowed by the A/D converter: an Alesis AI-3 (feeding a Digi 002 into Pro Tools LE running on a Sony Vaio laptop). Most vintage gear has the ability to output signals much higher than any converter can tolerate, revealing an AI-3 design flaw that required modification to resolve. Test points were added to the AI-3 so levels could be

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Figure 2: Successively louder snare hits, as captured by six preamps. Note how a purposely overloaded preamp levels the transients like a peak limiter.

monitored from within the converter. Preamp levels were matched by inverting polarity, then subtracting (nulling) via oscilloscope.

I JUST WANT TO BANG ON THE DRUM ALL DAY

The early snare tests were single hits, from soft to loud. You can see the results in Fig. 2. Notice how the transients increase on all but the Great River and Crane Song (with Iron and Fat on). These two solid-state preamps allow this to happen fairly transparently.

Once the setup was optimized, I moved on to a full kit recording using an omni mic just above the beater side of the kick, pointed at the drummer's seat. I like that a single mic can capture a remarkably balanced mix of the kit.

SO WHAT?

After all of this, you may be wondering what it all sounded like. The result of optimizing gain structure is to take advantage of the desirable overload characteristics so that the drums can be pushed louder in a mix without

Manufacturer	Model	Topology	Overload Characteristic	Notes
Mackie	1202	IC op amp	hard	stock
UREI	LA-3	discrete transistor	medium	stock (use 50dB gain setting)
Pultec	MB-1	tube	soft	mod allowed full or no negative feedback
Crane Song	Flamingo	discrete transistor symmetrical Class-A	medium or hard	stock, with Iron and Fat options
Great River	MP2-NV	discrete transistor single-ended Class-A	medium	very accurate reproduction of Neve preamp circuits
API	512C	discrete op amp	hard	aka Max Headroom

Table: The above preamps represent a manageable, if abbreviated, topology cross section.

compromising dynamics. (Yes, peak limiting has the same effect.) The combination surprised those involved with the project, and in that sense, my goal was accomplished.

If you're curious about whether any one preamp was better than the other or whether there was a significant difference between af-

fordable and boutique, there are several ways to answer. I'll let you be the judge of the sonic differences. The easy answer to the cost vs. performance question is that, at minimum, a more expensive preamp should provide more years of trouble-free service. Better preamps should have less electronic noise

(hiss and hum), be less susceptible to radiated noises, have more headroom and be capable of driving any load—including massive lengths of cable—without loss of quality.

EARS WIDE OPEN

Moving from drums to vocals reinforced the importance of matching a microphone with a vocalist. The journey through two transducers—mic and loudspeaker—can be, in my opinion, the most sonically challenging obstacle course for what is the most familiar, natural sound: the human voice.

I expect to be much more critical of these issues—to the point of taking more time to audition mic and preamp combinations before simply accepting what comes down the wire. Sound and video samples will eventually make it to www.tangible-technology.com. A fully detailed DVD will hopefully be ready sometime this spring. ■

Eddie would like to thank Tom Tucker for the inspiration; Dan Whitney for the blood, sweat and ears; Logan Erickson for the mods; Dan Kennedy for the geek analysis; and the performers: Will Charlton and Joe Hagle (drums), Brianna Rbubee (vocals) and acoustic guitarist Eric Johnston.

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Tools of the Trade



A DESIGNS

MP-1A/MP-2A MIC PREAMP

This audio chameleon from A Designs (dist. by TransAudio Group, www.transaudiogroup.com) gives the user the ability to alter the preamp's tone and comes in either single- or dual-channel versions. The all-tube unit offers 60 dB of gain, -20dB pad, balanced XLR I/O, polarity switch, old-school VU meter, phantom power and ¼-inch instrument input. The tone switching comes via dual two-position switches (per channel) that can be set in any of four positions, offering an expanded and versatile sonic palette. Prices: MP-1A, \$1,500 (single-channel); and MP-2A, \$1,975 (dual-channel).

in early E consoles, with two parametric mid-bands and two shelving outer bands. High- and lowpass filter sections feature 12dB/octave slopes.

SM PRO AUDIO A08 ANALOG-TO-ADAT CONVERTER

The A08 (\$149) from SM Pro Audio (www.smproaudio.com) uses your DAW's underutilized Lightpipe connection to expand your input options. This compact unit has eight ¼-inch unbalanced inputs on the front and a single ADAT Lightpipe output on the back. The A08 also offers word clock I/O, switchable internal or external sync, and 44.1- or 48kHz sample rates.

VSL VIENNA INSTRUMENTS

Three years ago, the Vienna Symphonic Library (dist. by Ilio, www.ilio.com) redefined the art of sample libraries. Now, Vienna Instruments, VSL's new virtual instrument (in stand-alone and VST and AudioUnits plug-in formats for Windows XP and Mac OS X) blends easy-to-use software with a vast array of samples. In a single preset, the software automatically summons from hundreds of articulations as the notes are played. The Symphonic Cube has 10 sample-based instruments—all of the Pro Edition and Horizon Series—offering some 800,000 samples (550 GB) with trills, arpeggios, performance nuances, harmonics and more. Each



SSL E SIGNATURE CHANNEL

SSL's (www.solid-state-logic.com) XLogic E Signature Channel (\$3,885) features the classic preamps/dynamics/EQ sound of its early '80s E Series console. One of its two preamps has the same Jensen transformer as the first E Series channel strips; the second uses an electronically balanced design with SSL's unique Variable Harmonic Drive circuitry that lets users blend second- or third-harmonic distortion into the signal path. The dynamics section faithfully reproduces the E Series sound while adding a defeatable over-easy curve in favor of a linear release. Additionally, the original Listen Mic compressor is presented as an option in the signal path. The EQ defaults to the original Brown Knob circuit found

PEARL OM 16 MIC

Pearl, the company from Sweden that specializes in rectangular capsule microphones, has released the Pearl OM 16 (\$550), a traditional circular capsule mic distributed by Independent Audio (www.independentaudio.com). The medium-sized, front-address omni condenser mic has a transformerless design, and is mostly flat but with a 3dB boost from 5 to 12 kHz, targeting it largely for instrument and ensemble recording.



collection (solo and ensemble strings, harps, woodwinds, brass and percussion) is priced from \$200 to \$550, with special upgrade pricing to existing VSL customers.

M-AUDIO MICROTRACK 24/96

This tiny, 2-channel mobile digital recorder from M-Audio (www.m-audio.com) records at up to 96k/24-bit to either Compact Flash or microdrives. About the size and weight of a deck of cards, this recorder offers phantom-powered mic preamps, balanced TRS line inputs, S/PDIF input and a stereo headphone out. MicroTrack (\$499.95) records up to 100 minutes of uncompressed audio at 44.1/16-bit or 1,500 minutes of stereo speech-quality MP3 audio at 96 kbps on a 1GB Compact Flash card. The unit's lithium-ion batteries provide approximately

eight hours on a single charge or about three hours with phantom power engaged. The battery recharges via a computer's USB port or an included AC power supply. When coupled to a computer via USB, it shows up on the desktop as a drive where files can be easily ported in/out of the unit.

PHOENIX NICERIZER 16

Proving the theory that the world has run out of new product names, the Nicerizer 16 (\$2,995) from Phoenix Audio (dist. by Independent Audio, www.independentaudio.com) is a 16x2 summing



with more than 100 editing parameters. Basic algorithms include hall, room, ambience and inverse. Features include a customizable 8x8 modulation matrix per unit, parameter morphing, four assignable macros per unit, adjustable input and output reverb width, two internal LFOs, two internal envelope generators and full automation of all parameters. Supported platforms include

disconnect for stable positioning and quick field changes. A 6-foot cable terminates to a fan out with a 1/4-inch stereo headphone plug and an XLR for the mic.

AXI RESO PRE 273

Old and new are exquisitely married in the Reso Pre 273 (\$1,995) from AXI (www.axidistribution.com). The slick-looking, 2-channel remote-controlled microphone



box using discrete Class-A circuitry. The dual-rackspace unit has XLR balanced I/Os and features panning and a +8dB boost for each channel. Users can monitor the stereo out or eight stereo pairs via a nine-position rotary control. Other features include a headphone out with dedicated volume control and L/R balance control, 11-segment stereo LED meter, main output level control and a variable stereo width control that can be A/B'd via a hard bypass switch.

IK MULTIMEDIA CLASSIK STUDIO REVERB

IK Multimedia's (www.ikmultimedia.com) suite of four reverbs features both Easy and Advanced modes coupled

Windows XP and Mac OS X including VST, RTAS, AudioUnits and DX; TDM is under development. Price: \$399.

ULTRASONIC HFI-700 HSD

Billed as "the ultimate broadcaster's headset," the HFI-700 HSD (\$750) combines Ultrasonic's (www.ultrasonic.com) S-Logic technology with DPA's 4088 (cardioid) or 4066 (omni) headmount condenser mics. S-Logic's low distortion and enhanced stereo image let users listen at reduced SPLs, eliminating fatigue and protecting our valuable factory-installed transducers (aka ears). Known for its ability to handle high SPLs, the DPA 4088 is ubiquitous in broadcast. It attaches to the headphones using an articulating mount and can

preamp is built using a vintage 1073 analog circuit design, and because it can be controlled via MIDI, it can act as a front end for a DAW or live use (also directly from the Pro Tools channel strip). The front panel has large rotary gain knobs and buttons with LEDs for switching in/out a -10dB pad, phantom power, mute and polarity. A gain range from 20 to 80 dB is offered in 13 gain steps.

NADY RSM RIBBON MICS

Nady's (www.nady.com) RSM-2 ribbon mic now has four new cousins: the RSM-1/3/4/5. All models have internally shock-mounted, low-tension aluminum ribbon engines, but ribbons of different lengths and thickness give each mic its own personality. All





share the characteristic ribbon figure-8 pattern, high-SPL handling and fast transient response. The RSM-4 (\$399.95) is intended for miking instruments and guitar cabinets; the RSM-3 (\$359.95) for ambient sound and choral miking; and—when compact mics are required—the RSM-1 (\$199.95) for all-around applications and the RSM-5 (\$379.95) for instrument miking.

MIDDLE ATLANTIC POP FILTER

Middle Atlantic (www.middleatlantic.com) now offers a new brand of music and studio accessories, including the Split Screen Pop Filter (\$45). The device uses two independent screens separated by an airspace. Vocalist sounds are initially diffused by the first screen, dispersed by the open space between the two screens and diffused once again by the second screen, effectively removing plosives. To avoid creating resonant frequencies between the two screens, the unit is engineered without parallel surfaces within the pop filter hoop.

AUDIO-TECHNICA AT2941SP

This new studio bundle from Audio-Technica (www.audio-technica.com) features the AT2020 and the newly released AT2021 mic. The AT2020 is a side-address cardioid featuring a 20-20k Hz response, a 124dB dynamic range and the ability to handle 144dB SPL. The AT2021 is a front-address, small-capsule mic targeted at instrument recording with a frequency response of 30-20k Hz, 126dB dynamic range and the ability to handle 145dB SPL. Price: \$249.

WAVES VOCAL BUNDLE

Bad breath used to call for a mint, but now as part of its new Vocal Bundle, Waves (www.waves.com) has a more creative solution. The bundle offers DeBreath, a unique breath-removing software; Tune, a new tuning tool; and the existing Renaissance Channel, Renaissance DeEsser and Doubler processors (all native). DeBreath automatically removes, reduces or enhances breath sounds in a vocal track by detecting breath segments and separating them using a template-matching algorithm. The separated breaths can then be processed independently if desired. Tune evaluates pitch correction possibilities according to user-defined criteria. Available parameters include reference pitch, root note, key, scale type and singer's range. In addition, natural vibrato is identified and can be increased/reduced, or synthetic vibrato can be added if desired. Prices: Tune, \$600; DeBreath, \$350; and Vocal Bundle, \$1,000.

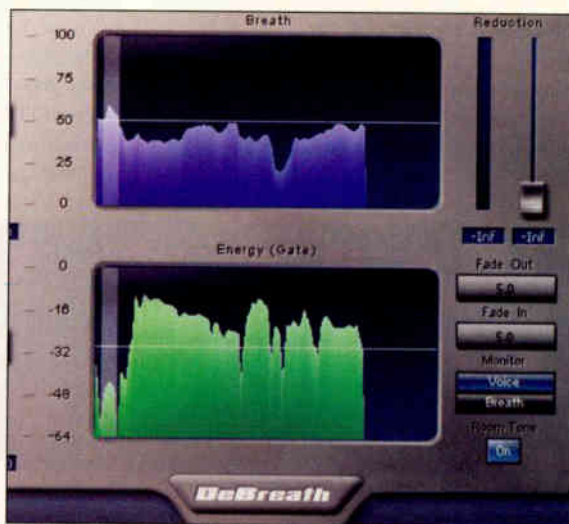
BETA MONKEY ROCK HARD FUNK

Those intelligent designers at Beta Monkey Music (www.betamonkeymusic.com) have their scopes trained on some funky new products. Now available are eight new REX2 versions of existing discs and an all-new two-CD set of BMM's slickest grooves to date. Rock Hard Funk (\$39.99) has grooves and beats said to be "way beyond the standard two and four." This 1,000-plus loop set features the work of accomplished funk and rock drummers churning out various tempos and feels. Also included are matching multi-velocity drum samples from the same maple DW kit used in loop recording and a matching set of cymbal samples.

SONIC STUDIO PREMASTER CD

Sonic Studio's (www.sonicstudio.com) products are now more affordable with the release of PreMaster CD (\$795), a simplified

version of its SonicStudio•DDP professional mastering application. Sonic's editing and sequencing routines—including the Smart Fade Tool—ease the mastering process. For final replication, PreMaster CD uses DDP (Disc Description Protocol), the same format as Sonic's pro products. These CD-DA-formatted recordable CDs are created in the background to avoid tying up the CPU. In addition, output to Roxio's Jam image file format provides another common method for project interchange. The application can open .WAV, .AIFF, Broadcast .WAV and SD2 files.



GEPSCO X-BAND MIC CABLES

Available in multiple colors, Gepco's (www.gepco.com) X-Band cables offer extra-flexible, wide frequency response interconnection for studio or stage use. Cabling the pairs with a tight and precise twist, a video-grade foam dielectric and a dense 95% copper-braid shield offer exceptional RF/EMI noise rejection. Finely stranded, OFC conductors maximize conductivity and protect against corrosion, and Gepco's G-Flex outer compound is both flexible and durable.



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SUMMIT AUDIO FEQ-50

Summit (www.summitaudio.com) has come out with a single-channel, 4-band parametric EQ with iron-based circuitry. Housed in Summit's familiar half-rack chassis, the FeQ-50 (\$995) has six switch-selectable frequencies on each band and ± 14 dB of sweepable gain. Low and high bands offer peak or shelf selection; the two middle bands have wide/narrow switches. The fully passive highpass filter has a knee at 80 Hz with a 6dB/octave roll-off. I/O for both the solid-state and tube signal paths is provided on +4dB balanced XLRs and

¼-inch unbalanced inputs (-10 dB) on a Neutrik combo jack, and all outputs can be used simultaneously. The FeQ-50 has an internal high-voltage power supply and a three-year warranty.

WIZOO W5 REVERB

In what Wizoo (www.wizoo.com) promises is a refinement of IR room modeling, the W5 Reverb (\$449) includes full 5.1 surround sound source models from 25 world-class recording and performance venues worldwide. Combining its HDIR (High-Definition Impulse Response) room modeling and

A.I.R. algorithmic reverb technology into one package lets users separately choose between the two, applying one to early reflections and the other to reverb tail. Reverb types include ambience, basement, booth, cathedral, cathedral dome, chamber large, chamber, church concrete, church wood, concert hall, dance club, drum booth, drum room, forest site, opera, orchestral hall, philharmonic hall, swimming pool and more. A built-in graphic envelope control simplifies further sculpting these spaces. Users have control of such parameters as tail delay, room size, ambience, density and color.

Upgrades and Updates

Celemony Software (www.celemony.com) releases **Melodyne Version 3 for Mac and PC**. Melodyne3 is no longer limited to the editing of melodies, but can handle homophonic and polyphonic textures. Other upgrades include fully automatic analysis of the audio material, powerful macros for the correction of intonation and timing errors and numerous improvements in the user interface...In related news, **Digidesign** (www.digidesign.com) will be **bundling Melodyne Essential free-of-charge** with Pro Tools software...**Eventide** (www.eventide.com) has released a version of its **H8000FW**, a FireWire-enabled version of the H8000 processor. Current users can upgrade to add FireWire functionality. Customers who purchased an H8000 or H8000A after October 7, 2005, are eligible for a free FireWire upgrade...**Princeton Digital** (www.princetondigital.com) has released a **VST version of its Plate 2016** reverb plug-in. The plug supports 44.1/48/96kHz rates and uses challenge/response copy protection. The

plug-in will run in demo mode for 10 days or 500 launches...

HHB's

(dist. by Sennheiser, www.sennheiserusa.com) **PortaDrive** system now includes a **71W/hour NPL7 lithium-ion rechargeable battery**, replacing the original 52W/hour NPL50, boosting PortaDrive's continuous operation from two to three hours. An 80GB hard drive is also now part of the system...**Cedar Cambridge** (www.cedar-audio.com) **V. 2.5 is now available as a free upgrade** and includes two new restoration modules and numerous upgrades to the core system. New features include improvements to the pre/post operations, multiple levels of undo/redo, and advancements of Event Manager and Automation systems...



Metric Halo's (www.mhlab.com) **V. 2.2 update of its Mobile I/O Console and driver software** for Mac OS X provides increased performance across all Mobile I/O



hardware models. Users of the Mobile I/O 2882, 2882+DSP, ULN-2 and ULN-2+DSP can now take advantage of the free update with Mac OS 10.3.9 through 10.4.2...**Edirol** (www.edirol.com) now offers **fully supported V. 1 drivers for Windows x64**, allowing users to fully utilize their 64-bit hardware...The **LT-ADAT upgrade** from Lynx Studio Technology (www.lynxstudio.com) lets Lynx Aurora converters add up to 16 channels of ADAT Lightpipe I/O. This a full-function ADAT interface that provides two ADAT Lightpipe inputs and outputs when installed in an Aurora 8 or Aurora 16. ■





INTRODUCING THE ADL 600.

600 VOLTS OF TUBE NIRVANA.



Several years ago, Anthony DeMaria, President of Anthony DeMaria Labs and Jim Odam, President of PreSonus met at an AES show in New York. Jim noticed a prototype microphone preamplifier lurking in the back of the ADL booth and was intrigued. After chatting with Anthony about the design — three tubes per channel, dual input/output transformers, 600 volt power rails — he had to hear it. Totally floored by the mammoth sound and complete absence of noise, Jim was convinced this was a match made in sonic nirvana. Designed by Anthony DeMaria, engineered and manufactured by PreSonus in the USA, the ADL 600 is a microphone preamplifier that has a sonic character like no other.

The Sales Engineers at Sweetwater have heard every microphone preamplifier under the sun, so it's unusual that a new preamp really gets them excited. That's why when we let them hear the ADL 600, we knew we were on to something. Like Jim and Anthony, Sweetwater instantly recognized the ADL 600 as something truly special. Ask your Sales Engineer about the ADL 600's sonic character, and hear it for yourself in action at www.sweetwater.com/adl600.

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World Radio History

Mackie Traktion 2 DAW Software

Simple GUI and Unique Plug-In Rack System

The big-name sequencer/recorders have dominated the market for close to 20 years. With Traktion, Mackie aims to shake up the scene. Traktion is quite powerful and full-featured, especially considering its modest price (\$189.99 retail). Its colorful graphics shout, "This program is different! It's modern! It's friendly!"

Traktion is a recorder, not a virtual workstation like Propellerhead's Reason or a performance instrument like Ableton's Live. Its only built-in sound generator is an extremely basic sampler. As it's both VST- and ReWire-compatible, you can integrate soft synths and third-party effects into your Traktion projects. And unlike some virtual workstations, Traktion is equally happy sequencing external MIDI hardware.

THE COLOR PURPLE

Traktion's brightly colored, everything-in-one-window user interface has no traditional mixer panel and eschews traditional top-of-screen menus. Instead, buttons in the lower-left corner (Save, Undo, Redo, Clipboard, Snapping, Automation, etc.) provide access to a dozen menus and often-used commands. Pop-up windows are used for a few isolated chores such as editing groove quantization templates, and third-party plug-ins have their own windows.

When you select an object—which might be a track, audio or MIDI clip within the track, plug-in, input device or even the tempo field in the transport area—the object's parameters and more buttons with editing commands appear in the Properties box, which is always at the bottom center of the main window.

Along the screen's upper-right edge is a line of context-sensitive help. There's also an option for viewing pop-up help boxes, but these cover so much of the screen that most users will undoubtedly switch the option off soon after they start learning the program.

All MIDI editing is handled within the main track window. Double-click on a MIDI clip, and the track snaps open vertically to reveal a piano roll editor complete with a controller strip. While the MIDI features are limited in some ways, the editor is easy to use. You can draw controller data or edit velocities with a pencil tool, for instance, but the process of copying and pasting

chunks of controller data is awkward.

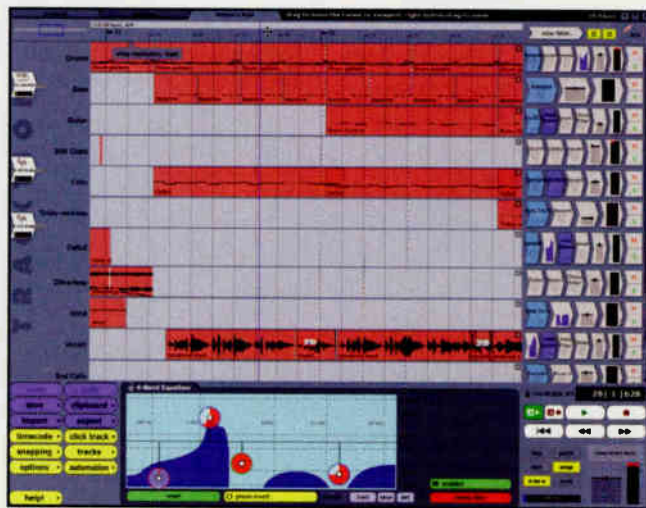
I'm not sold on the "everything-in-one-window" design. The idea is to make the program more accessible, especially to newcomers, but in practice, I find that hiding and/or resizing objects while I work is almost as much trouble as opening and closing separate windows. That said, Mackie has done a remarkably good job of coming up with a clear and effective screen layout.

TRACKING

Traktion will record at up to 32-bit, 192 kHz. Simultaneous multitrack recording of audio is supported, as are auto-punch and looped recording of multiple takes. Audio clips have their own level, pan and fade-in/out settings. Crossfades can be performed within a single track by overlapping two audio clips.

At the right end of each track is a row of lozenge-shaped widgets, which includes output level meter, Mute and Solo buttons, volume/pan control, aux sends (up to eight) and inserted plug-ins. Objects in this row can be reordered by dragging; objects are added by dragging the "new filter" widget down from the top of the screen. Traktion even considers plug-in synths a type of filter, which is odd but not confusing. Most of the plug-ins I tried worked fine. The Cycling '74 Pluggo plugs loaded and processed audio, but no edit windows were displayed for them.

Parameters, including those in plug-ins, can be automated from envelopes, which are displayed on top of any clips in the track. Envelope editing can be handled by clicking and dragging one point at a time, and region-based offset and scaling commands are provided for envelope regions. Real-time recording of automation from knobs and sliders is also supported. However, only one automation envelope at a time can be displayed for any given track.



Buttons on Traktion's screen (lower left) replace traditional pull-down menus.

Clips can be manipulated in various ways, including time-stretching by dragging the end of the clip. Traktion's audio time-stretching blurs attack transients, so it's not very useful for drums. Another time-stretch mode preserves transients but alters the pitch. You can drag the clip's boundaries without moving the contents or move the contents without changing the boundaries—very handy for sliding audio around. Traktion even lets you insert a plug-in effect on an individual audio clip, a forward-looking feature not found on all DAWs.

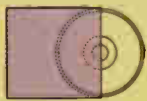
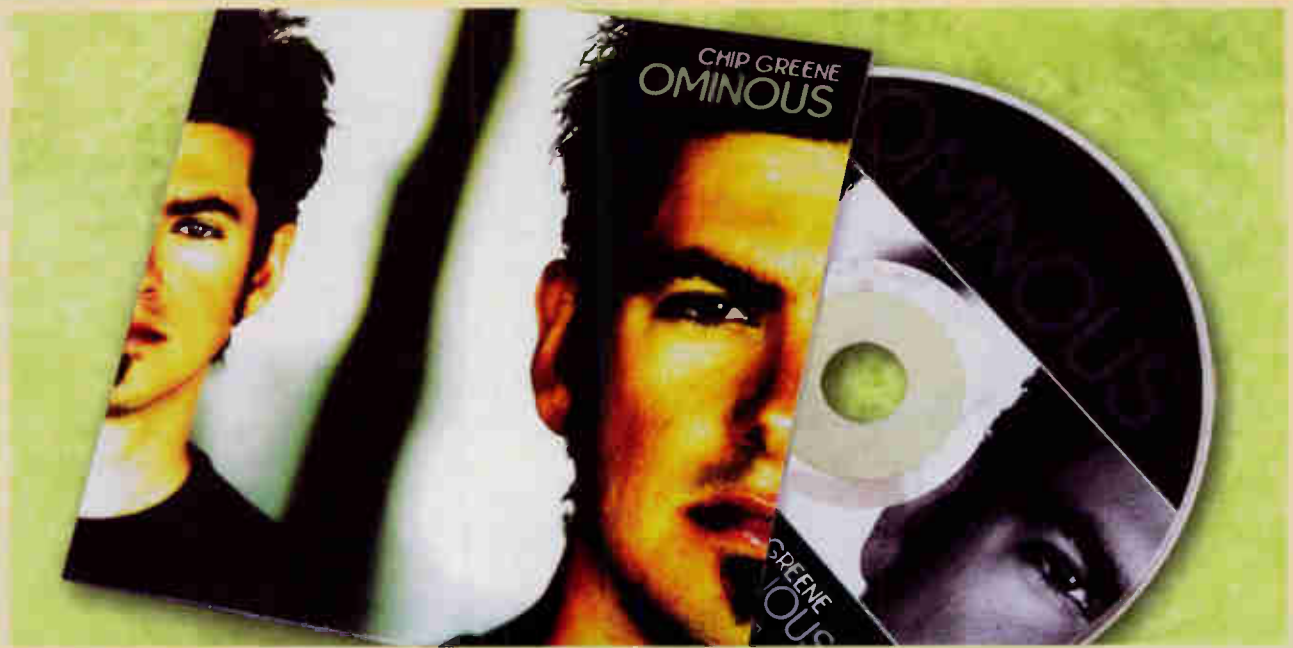
The program needs a numerical readout for the loop/punch start and end markers. If they aren't in view, then you have to zoom out to find them and then drag them to where you want them.

Pro-oriented features include tempo and time signature changes, big input level meters, numbered markers on the timeline, user-editable key commands, track freezing and archive file export. The included effects are basic, but functional.

RACK IT UP

Traktion's visionary implementation of plug-in "racks" is unlike anything I've ever seen in a recorder. A rack is a modular workspace in which you can insert and patch together any of the plug-ins in your system. Racks allow you to patch effects in parallel instead of the usual series signal flow of an insert chain.

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A rack is where you insert a vocoder or a dynamics processor with a sidechain input, as it can accept separate audio ins from several tracks at once. Racks are also useful for hosting plug-in synths that have more than one stereo audio output. The mechanics of setting this up are a little convoluted, but I tried it with three different plug-in synths and it worked consistently well.

MAKING MUSIC

When I started recording and editing MIDI tracks, the fact that Traktion is a new program and still needs some refinements became apparent. When I applied playback-only quantization (a great feature) to a MIDI clip, it affected the mod wheel data in addition to the notes, which is highly undesirable. I found a workaround: Controller data can be recorded into a separate track. But that complicates track-level editing a bit, so old-fashioned data-altering quantization will sometimes be a better choice. The scaling commands provided for automation data aren't available for MIDI controllers, and I was astonished to find that Traktion won't record or play back aftertouch.

When I imported a QuickTime movie to try a little scoring, Traktion's limitations proved insurmountable. The audio in the movie can be muted or unmuted, but its output level can't be controlled. What's worse, I couldn't insert hit point markers on the timeline at particular frames and then adjust the tempo to align the hit points with bar lines because changing the tempo (even when seconds frames are selected for the time ruler) moves Traktion's timeline markers. The markers are anchored to the bar/beat location, not to the SMPTE time. Also, 29.97 drop-frame is not supported. In sum, the QuickTime window is a selling point that will attract novices, but it's not a tool professionals should plan on using.

FINAL TRACK

Traktion is still young and lacks some of the refinements found in more mature DAWs, and Mackie will undoubtedly be adding features. The platform is solid, and it's going to be very interesting to watch this program grow. Whether it's superior in any decisive way to Cubase SE (which costs \$50 less) is debatable, but the downloadable demo version may seduce you.

Mackie, 800/258-6883, 425/487-4333, www.mackie.com. ■

Jim Aikin writes and edits books and articles about music technology.

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Universal Audio LA-3A Audio Leveler

The LA-2A's Solid-State Sibling Is Reborn

Universal Audio has a wonderful habit of reissuing some of the most beloved vintage processors known to gear mavens worldwide. Now, the company has re-created the classic UREI LA-3A Audio Leveler, which is essentially a smaller, solid-state version of the all-tube LA-2A. Both models use the T4 opto cell, which is responsible for the unique and highly transparent compression curve for which these vintage compressors are cherished.

Universal Audio maintains that, aside from three small exceptions, the new LA-3A is an exact replica of the original model from the late 1960s. XLR I/Os were added, while the vintage unit's barrier strip connections were also retained in the reissue to maintain compatibility with existing installations. An IEC power connector was added for UL compliance. Universal Audio also implemented a popular gain mod—which many engineers retrofitted on vintage units' PCBs—so that it can be conveniently activated via a rear panel switch. The gain mod improves the LA-3A's signal-to-noise ratio and lowers the threshold.

In addition to the all-important T4 opto cell, the new LA-3A uses virtually the same input and output transformers, electronic components (including NOS transistors), PCB layout, cable, chassis parts and front panel as the original LA-3A.

OH, BABY!

The LA-3A's front panel control layout is simply laid out. Turning a continuously variable rotary control labeled Peak Reduction clockwise increases gain in the sidechain circuit, effectively lowering the threshold and increasing compression. Another continuously variable rotary control adjusts makeup gain. The fairly large VU meter can be switched to show either gain reduction or output level (the latter mode referencing 0 VU to +4 dBm). A power switch is also on the front. However, a Bypass switch is not provided. There are also no attack and release controls, as the LA-3A's time constants are inherently program-dependent.

All I/Os are on the unit's rear panel and are served by both XLR and barrier strip connections. Also on the rear panel are three switches: One toggles the unit



between compression and limiting modes (which sound virtually indistinguishable unless very heavy compression is used); another pads the input 20 dB to prevent high-output devices from clipping the unit's input transformer; and the third switch kicks in the previously mentioned gain mod.

A rear panel pot increases the sidechain's sensitivity to very high frequencies and is intended for use in broadcasting applications. Another pot balances the unit's gain-reduction amount when it is stereo-linked to a second unit via the above-mentioned barrier strip. The 2U, half-rack-sized LA-3A ships with a rackmount kit.

LIGHT ME UP

My first test of the LA-3A was an A/B comparison to my Universal Audio LA-2A, recording male vocals with an AKG TLII mic and Millennia Twin Direct Recording Channel. Compared to my LA-2A, the LA-3A produced more extended highs and lows and exhibited greater depth. Despite the LA-3A's higher fidelity, however, I didn't automatically favor it over the LA-2A. Both units sound awesome in different ways. The LA-3A has a very rich sound that belies its solid-state circuitry, but I also love the creamy, slightly band-limited sound of my LA-2A.

The compression curves of the LA-3A and -2A sound virtually the same and incredibly natural. You can squeeze vocals really hard so they don't pop out of or dip below the music bed; still, the nuances and perceived dynamics of the performance come shining through.

This transparency was also evident when recording electric guitar on a country ballad

using a Royer R-121 ribbon mic patched through a Neve 5012 Duo Mic Pre and the LA-3A. Dialing in 5 dB of gain reduction, the track exhibited awesome depth and a golden, analog tone to die for. The guitar solo sat perfectly in the mix, yet I could hear no obvious compression artifacts.

Next up was a Taylor XXX-MS acoustic guitar playing arpeggios and miked with a pair of B&K 4011 condensers patched through my Millennia HV-3D preamp. With the LA-3A's meter showing 5 to 6 dB of gain reduction, loud bottom-string peaks were leveled without pumping. There was a noticeable decrease in depth and high-frequency sparkle with this much compression, but no more than what I've heard using other high-end, wide-band analog compressors on acoustic guitar with as much processing.

The LA-3A enhanced the attack of both electric bass and kick drum tracks. It also tightened up the kick drum's decay to the point where it sounded like an extra blanket had been stuffed in the shell.

BACK TO THE BEAUTIFUL

The LA-3A is \$1,499 for a single unit or \$2,899 for two (including a rackmount kit). Though that's not inexpensive, it's a small price to pay for the incomparable sound of a vintage, T4-based opto compressor. That's the sound heard on countless hit records. Long live the LA-3A!

Universal Audio, 866/UAD-1176, www.uaudio.com.

Michael Cooper is the owner of Michael Cooper Recording, located in Sisters, Ore.

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Submersible Music DrumCore Loop Library

Nine Famous Drummers on Your Hard Drive

That "next big thing" rock vocalist is due in your studio in an hour to record a demo, but the drummer didn't show up to lay down the backing tracks. Do you cancel the session? No, just launch Submersible Music's DrumCore and drag-and-drop a few bone-crushing loops into Pro Tools.

DrumCore puts a large selection of mainstream pop and rock beats on your hard drive, all of which are played by real drummers—and not just ordinary drummers. Providing more than 8 Gigabytes of loops are Alan White, Ben Smith, Jeff Anthony, John Bishop, Matt Sorum, Michael Shrieve, Sly Dunbar, Tony Braunagel, Zoro and the hip hop duo Ned Douglas/DJ Syze-Up.

The recordings are done in stereo at 48 kHz/24-bit. While great mics and consoles were used for the sessions, the emphasis is on taste and variety, not variations in mic position and other such tweaks. Some selections have more room ambience than others, but it's never overbearing.

A GUI DELIGHT

Managing such a massive amount of data is easy thanks to DrumCore's database orientation, which lets you view the library by drummer or by style. The results can be filtered by tempo (or tempo range) and other parameters. The best-represented styles are alternative, funk and rock, to which several drummers contribute. The long list of beats in the reggae and hip-hop categories is due mostly to the presence of a single drummer who specializes in that style. Country, ballad and dance hall are included in the database, but the offerings are meager. Blues, jazz, Latin, New Orleans, R&B, ska and world music average half-a-dozen selections each.

The beats are played at a variety of tempos, usually separated by 5 bpm, enabling you to find something that works with a minimum of time stretching. The pattern and sticking often changes a little from one tempo to another, as you'd expect of real drumming. Characteristic fills are also included for most of the styles. A more-or-less typical offering, Sorum Skippy, provides five or six basic beat variations and three to five fills, all of

which are separately recorded at every tempo from 90 to 175 bpm, plus about 20 MIDI files. (Not all of DrumCore's drummers provide such a wide tempo range.)

BEAT SOUP

Creating a track for your session couldn't be easier. Both MIDI patterns and audio loops can be dragged and dropped into your favorite DAW from DrumCore's cheerful orange interface. Another option is to "Gabrielize" (Submersible's term, not mine) either the audio or the MIDI, a process that shuffles the rhythm around and may even play short snippets of audio backward, all under the control of secret algorithms. The results of Gabrielizing are often silly, but if you click the button 10 or 20 times, you may get something genuinely useful.

I grabbed a funky jazz shuffle and matching fill and parked them in Cubase SX tracks. Next, I laid down an acoustic bass line in Spectrasonics' Trilogy, added some piano chords in Native Instruments' Kontakt using SampleTekk's White Grand and slapped a little M-Audio WizooVerb on the piano. You can hear the results at www.mixonline.com (drumcore shuffle.mp3). Any deficiencies in the realism of the ensemble are strictly due to my musical ineptitude, not to DrumCore.

If the loops and fills don't do the job, you can try the MIDI-based patterns. Select any of the 38 factory drum kits to play them or use your own General MIDI-compatible kit. Choosing a kit that matches the drummer will give you a sound that's close to the audio recording, but obviously not the same.

WHAT'S THERE, WHAT'S NOT

DrumCore gives you loops played by real drummers in a computer-friendly format that doesn't force you to shuffle through a bunch of CD-ROMs. On that count, it is a winner; however, there are some things you should be aware of that may or may not be an issue with your setup.

For instance, technically, DrumCore is ReWire-compatible, but as it has no internal



Submersible Music DrumCore lets you drag-and-drop MIDI patterns and audio loops into your DAW.

pattern sequencer, the main advantage of the ReWire connection is being able to monitor DrumCore through your DAW's mixer. A secondary advantage is that you can send MIDI to DrumCore via ReWire to play the kits. I was only able to get DrumCore's transport to start in sync with Cubase under ReWire when playback started at bar 1, beat 1. Starting at a later point in the song caused DrumCore to run half-a-beat late. DrumCore does not time-stretch beats itself; that chore has to be handled by the host program.

DrumCore has a kit editor to create your own kits for MIDI playback, but the program lacks most of the features found in drum kit plug-ins such as Native Instruments' Battery—amenities like filters, envelopes and multiple outputs. Velocity crossfading is supported, but that's about it. The kit editing is really just a bonus.

All in all, the sound and versatility are first-call. If quickly creating great-sounding bed tracks is your goal, then DrumCore may be just the ticket for your production room.

Price: \$249; add-on DrummerPacks, \$79.99 each.

DrumCore, 206/342-2331, www.drumcore.com.

Jim Aikin writes regularly for Mix, Electronic Musician and other music magazines.



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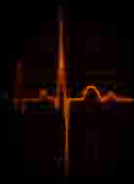
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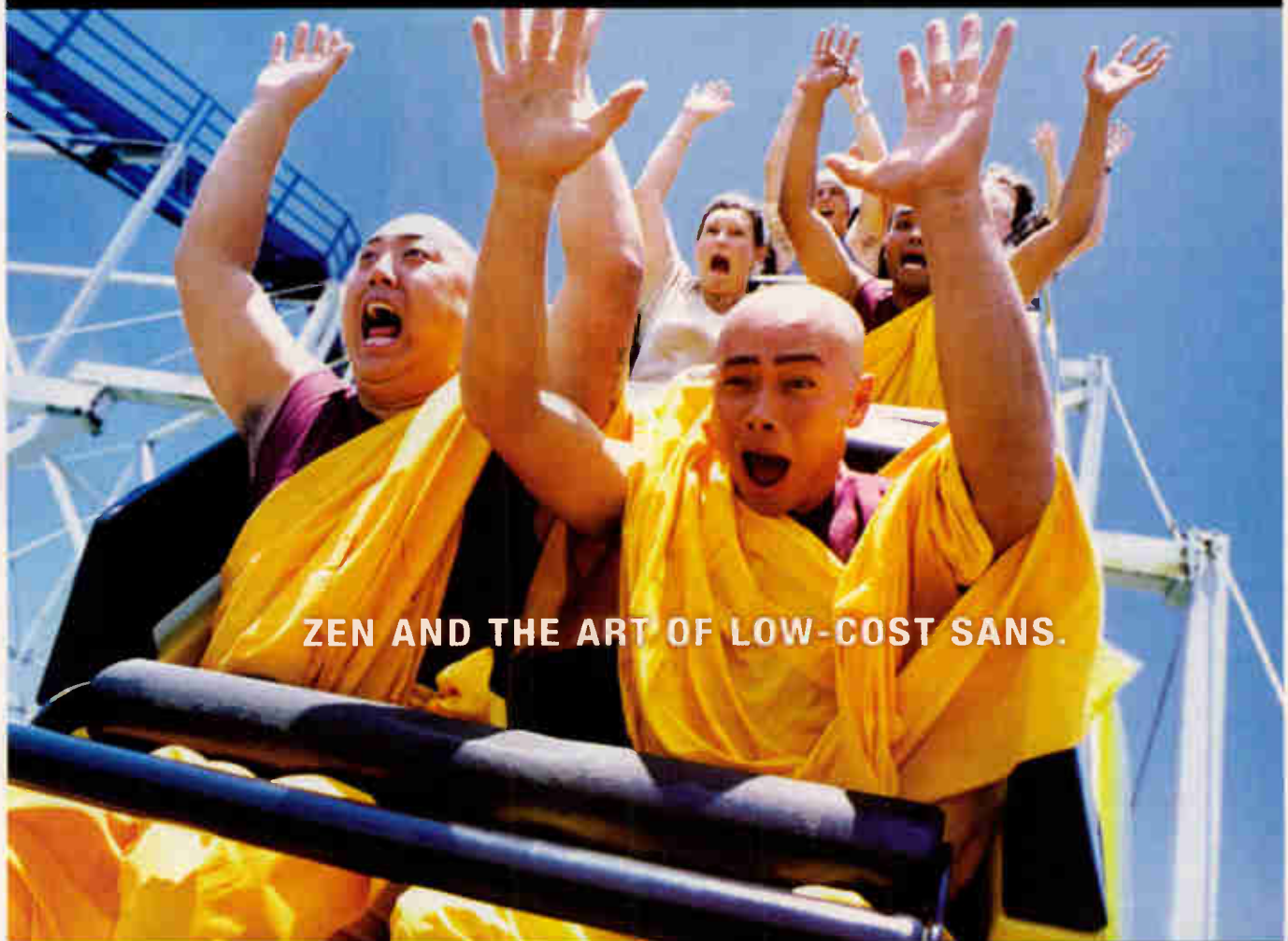
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Focal SM8 Powered Monitors

Versatile Near-Fields With Analog or Digital I/O

Having seen them at several industry shows, I've admired the Focal SM Series' look and sound for a while now and looked forward to giving them a serious test-drive. The SM8 is a self-powered bi-amped speaker (sold in pairs) weighing a solid 33 pounds. A 100-watt, Class-A/B amplifier drives the tweeter—a Beryllium inverted dome—while a separate 200W Class-D amplifier drives the 8-inch W-cone woofer.

Overall stated frequency response is 45 to 40k Hz, ± 2 dB, and maximum SPL is rated at 115dB SPL (peak @ 1m). A passive 8-inch radiator on the top of the cabinet helps deliver more low end and helps smoothly dissipate some of the energy below 40 to 50 Hz. A subwoofer is recommended; no matter how well the SM8 handles LF content, there's still a decided lack of punch in the low end, just as expected with any 8-inch system such as this.

BEST OF BOTH WORLDS

Input is on analog (XLR) or AES digital inputs (also XLR), both plainly marked. An optional wired remote controls level, dim and mute functions, operating via a serial RS-232 port. Tandem control of the second box is carried out via MIDI. Either speaker can function as the master/slave in digital mode by selecting the appropriate setting on the AES channel selection switch. (A very handy AES L/R splitter box is also supplied with the system; one cable in and two L/R outs make digital connections a snap.)

The real fun begins when you load the Focal Manager software into your PC, Mac or Palm/PDA. (The PDA option uses the infrared option switch.) Software installation is simple and straightforward: Load the executable file on the CD-ROM with either your PC or Mac and connect the RS-232 serial cable. Once the software is installed, each speaker is identified by its own serial number so that Focal Manager then knows which speaker it is controlling.

CONTROL YOURSELF

Focal Manager allows control of output level, shelving EQ, general EQ, assorted presets and delays for either speaker independent of each other (allowing for 2.1 or 5.1 setups,

along with subwoofer management settings). A user-customizable section gets you quickly up and running, with easily viewed color scheme when changing parameters. A Bypass button allows A/B comparisons of settings and storable settings once you've found what you want. There is also a very useful utilities section and a password function.

Some of the important features of the software include the use of FIR equalization. (Finally, digital EQ right where you want it—at the amp driving the speaker!) Sometimes, even a little was a lot when I changed settings to experience a few wildly different response curves. The possibilities seem limitless for tuning these speakers to most work areas, be it a small project studio or a larger production suite.

The second notable feature is the ability to control and fine-tune the "sweet spot" for 2.1 and 5.1 speaker settings via the Delay sub-menu of the software controls. Dial in the distances of your speakers (L, C, R, Ls, Rs), and the software does the rest based on your choice of sitting position relative to the speakers and listener height.

POWERED UP AND RUNNING

When I used them as part of my video editing and MIDI keyboard production suite, I found a lot to like about the sound and imaging of these speakers. For rock, jazz and pop work, they really delivered the kind of smooth mid to low end I prefer, without exaggeration or boominess, and lot of clean power. The smooth, silky top end really opened up the sound of most keyboard and guitar parts. I found new depth and dimension to many piano parts I created, and the stereo imaging was thrilling: rock-solid. It was often difficult to tell they were on; they're very quiet with little system noise, and they never got warm or hot to the touch, even on the back surfaces where the controls and amps are located.



For mixing soundtracks, dialog, video-games and other projects where imaging and localization are highly critical, the SM8s really shine. I did some A/B tests of a few recent live projects and found new depth and colors in some mixes we'd otherwise missed.

I got a chance to give them a serious workout while mixing a recent NPR program for WRTI-FM here in Philadelphia. The program—Mellon Jazz's "One Nation Under Jazz" live broadcast series—featured Chicago saxophonist Von Freeman and his band. Before getting started, I needed a good reference point, and the DSP software let me make various tweaks to the system's response curve as needed, getting both test signals and my favorite recordings sounding as they should.

The software is straightforward and intuitive, but in case you don't trust your ears or fatigue sets in, you can always return to the factory default mode and start over, or set up various curves and toggle among all the choices. Finding a few minor dead spots and resonances in my mix area (nothing serious), a quick tweak of the Focal Manager software let me address the bumps and dips and quickly move on. (You can, of course, get creative and save settings of your own, depending on the task and genre at hand: tracking, mastering, pop, rock, metal, ska, classical, etc.)

Now sure of what I was hearing, I dug in

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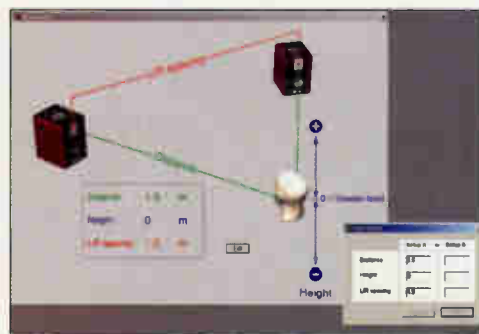
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and had some fun, taking my time with the broadcast mix and editing. With the SM8s, it was easy to re-create the soundstage just as I'd originally heard it in the hall. I tend to prefer the sound of an all-acoustic jazz trio anyway, and getting to hear my mixes on the SM8s put it all in perspective.

As stated earlier, without a sub, the SM8s are a little light on the low end (below 80 to 100 Hz and down), but nothing that took me too far from what I wanted. Acoustic bass, kick drum and other low components played nicely together, and the mix translated well to my sub-equipped Lipinski L-505 system. The 8-inch passive radiator on the top seems to act as a gentle shock absorber, as well as a radiator for low-end material. This is helpful, as with many other monitor systems in this size group, no sub can mean overcompensation and too much low end.



The Sweet Spot software controller works with the Delay function for tweaking the soundstage.

THE ENVELOPE, PLEASE

I found one downside regarding the SM8s' Beryllium tweeter. The speakers come with a sticker warning you not to touch or even get near the tweeter if it's damaged or broken open. The manufacturer advises covering it up with the supplied caps and sending it back to them.

However, these speakers are just loaded with features and options. Whether you're running straight out of a digital console (at various sample rates; i.e., 44, 48, 88 or 96k) or balanced analog, you have a wide range of options for control and accurate tailoring of your sound. The software-driven EQ and time-align capabilities let you customize your sonic environment entirely inside the box.

At an MSRP of \$5,598, the SM8s are worth the investment and could be the last system you'll buy for a long time.

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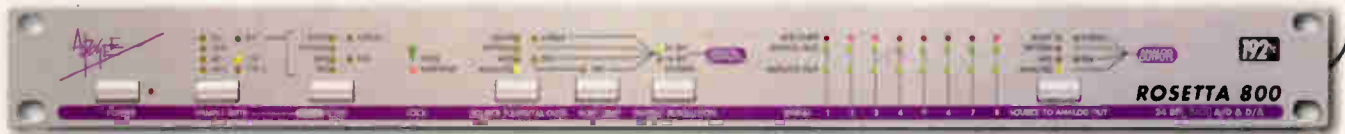
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RTZ 9762 Dual-Combo Mic Preamp

No-Frills Neve Remake With Variable Impedance

The 2-channel RTZ 9762 is a single-rackspace remake of the Class-A Neve 1272 microphone preamp. The 9762 adds to the original's operation and sonics with modern features and circuit refinements. The unit's 17-pound heft and "no-frills" front panel clearly indicate a greater emphasis on manufacture quality.

ON THE INSIDE

Inside the reinforced all-steel cabinet is a separate steel compartment shielding the power supply's toroidal transformer from the two preamp PC boards. In addition, mu-metal foil surrounds the power transformer and both 9160 Sowter output transformers for additional control of stray 60Hz magnetic fields.

Both preamp channel boards have +24-volt rail voltage regulators and filtering, and independent auto-resettable thermal-overload fuses with front panel indicators.

ON THE FRONT

The front panel has a gold-contacted Grayhill 12-position mic gain rotary switch for 20 to 75 dB in 5dB steps. Like most Neve module conversions, there is a line amp output level control. Here, a heavily damped Clarostat 308 Series pot sets final output level with the 9762 capable of a 40V peak-to-peak before clipping. An internal jumper sets the line amplifier gain to either 15 or 10 dB, the factory default.

Other features include a signal-present LED that lights green when a 200mV or -20dB ref 0.775V signal is on the input and responsive LED output VU meters for each channel with +6, +3, 0, -5 and -10dB indicators. There is also an overload LED when any clipping occurs within the input stages. In my use, I was unable to clip the 9762's front end because it will take up to 0 dBu without attenuation.

The unit also features polarity flip and +48V phantom powering that ramps up and down when switched on/off. A lo-Z switch parallels the Lundahl LL 1538 transformer's input primary windings for 50-ohm input impedance when pushed; releasing the switch returns impedance to 200 ohms. Term switches a termination resistor (an

internal jumper allows a choice of a 600- or 1.5k-ohm resistor) across the Sowter's output winding (more later) and a ¼-inch hi-Z input jack for direct recording.

When the DI button is pushed, a FET buffer stage bypasses the input transformer and acts as an impedance converter. With the input impedance now at 10 megohms, there is no chance of loading a guitar/

the level to come up. I liked the "fade up/down" phantom-powering feature—it worked perfectly. I also used the DI switch as a silent mic mute switch—if nothing is plugged into the DI input.

Next up were drum overdubs. I recorded into Pro Tools|HD and used a vintage '70s API console for all of the close mics and the 9762 for overheads. With the



bass pickup or a sensitive piezo unit and changing its sound. Another pair of FETs with the relays provide a wonderful output muting feature. Not in the audio path, these are shunt switches that short the output signal to ground during any DI/mic or impedance-switching operations.

IN THE STUDIO

I started my evaluation with vocal overdubs using a Neumann U87A (no pad, no roll-off, cardioid pattern) and a Pro Tools MIXPlus system. I compared the 9762 to a Brent Averill Neve 1272 conversion. With the termination resistor switched on the RTZ's output, I got the flattest frequency response and the closest Neve match. The 9762 was quieter with no hum and had a very slightly more open high end. I also noticed better subsonics—even on vocals. This particular Neve was warmer in the low midrange with my singer's "p" pops more noticeable.

Switching the termination off opened up the sound of the 9762's high end for more "air"—you could hear more ambience around the singer's voice. The Neve conversion sounded nasal by comparison. Trying the RTZ's 50-ohm input impedance momentarily muted the output and caused

termination off, I found the overhead mics (wide-spaced B&K/DPA 4011 cardioids about 1 meter above the toms) to sound more open than the stock API channels. I could hear more of the whole kit and the room, and there was loads of gain. I used 20 dB of gain.

The DI input worked well for a Fender P-Bass with passive pickups. This path is just like a very expensive FET DI box you would need to add to any Neve unit. Again resulting in better subsonics, I attribute that to the better-quality transformers in the 9762 than a Neve.

PROMISES KEPT

The RTZ 9762 fulfills the promise of the ultimate vintage Neve sound. It's an excellent rethinking of the original Rupert Neve design, realized in a modern, bulletproof professional product. The operational shortcomings that occur when converting a vintage '60s console module to stand-alone operation were addressed, while the sound we all love stays essentially the same. Price: \$1,495.

RTZ Professional Audio (www.rtzaudio.com), dist. by Atlanta Pro Audio, 404/329-9494, www.atlantaproaudio.net. ■

Barry Rudolph is an L.A.-based recording engineer.

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The Professional's Source



Phonic PAA3 Portable Audio Analyzer

SPL, Line Voltage Measurement in the Palm of Your Hand

At some point, every engineer needs to measure audio. Audio test instruments have traditionally been cumbersome and expensive, but progressing technology has made these instruments more readily available. One example is Phonic's PAA3 (\$469.99), a portable audio analysis instrument that operates via battery or AC.

A built-in microphone facilitates measurement of SPL (30 to 130 dB), RT60 (up to 30 seconds) and 31-band RTA, while a line input measures voltage (5 millivolts to 80 volts), dBu (-50 to +40) and dBV (-52 to +38). A USB data port enables simultaneous use with any PC supporting Windows 98 and above, providing real-time control and viewing of PAA3 data.

In addition to a USB port, the PAA3's external features include a side-mounted data wheel, XLR line-level I/O and a jack for the wall wart power supply (included). The front panel is home to a backlit 160x160 LCD. Below the LCD are four push-buttons used to turn the PAA3 on/off and navigate the various menus. The rear of the unit has a pivoted microphone, a master on/off switch, a contrast wheel for the LCD and a socket for stand mounting. A slide-out door provides access to the battery compartment (four AAs). To turn the unit off, hold the Power button until the backlight blinks.

AUDIO EXPERT

The PAA3 is great for SPL and frequency analysis. Upon boot up, the unit defaults to a screen showing 31-band RTA and numeric and bar graph indication of SPL. The top of the display shows range, weighting (A, C or none) and peak SPL. The numeric display's left-half defaults to ALL, meaning that the PAA3's numeric readout is showing average SPL across the audio range.

Rotating the data wheel or using the up/down push-buttons alters the numeric display to show specific SPL at any of the standard 1/3-octave bands from 20 to 20k Hz. (The selected bar blinks.) This is a necessary feature because the spectrum display's frequency axis is marked every three octaves, making it difficult to pinpoint the "in-between" values, and the RTA always shows

vertical divisions of 10 dB regardless of the SPL range. It would be nice to have the ability to change that scale to 5 dB for higher resolution.

A push of the left-most Enter button provides access to a menu with pages for input (SPL or line), RT60, memory, settings, phase check, internal generator and power. To access a menu, scroll using either the up/down buttons or the data wheel and press Enter. An escape option returns the menu to the previous page. The SPL/Line menu switches between acoustic and electrical measurements; the range and numeric indicators reflect the appropriate measurement unit.

OUTSTANDING IN THE FIELD

Using the PAA3 to measure reverb time in a medium-sized live room and a church was a breeze. Once you've accessed the RT60 menu, simply select Run and press Enter. The PAA3 evaluates average background noise and waits for a transient signal with a decay range greater than 30 dB. (I used a hand clap.) Once it hears that signal, it measures the decay time and displays the result in seconds. Ten measurements can be stored and recalled, and the PAA3 can average the readings, making it possible to measure various sections of the church and come up with an average reverb time.

I also used the PAA3's spectrum analyzer to generate a complementary "flat response" curve for a 31-band, 1/3-octave EQ. This required playing pink noise from the PAA3's line out through the P.A. system. While accessing the Memory menu, RTA and pink noise continue to run in the background, so I was able to walk to different areas of the room, take RTA measurements and store the results into several of the unit's 10 numbered memory slots. (The PC software allows you to name these locations, but names cannot be uploaded to the PAA3.) I could then choose any or all of these readings for averaging and store the average into additional registers.

Choosing EQ Setting from the PAA3's menu displayed a graph of the suggested



settings for the 31-band EQ that would flatten out the room, based upon the average response curve. Very cool!

I used Phonic's supplied PC software during live shows when my hands were full (of faders) and needed a larger display. Information stored in the PAA3 is instantly uploaded to the PC, and the computer screen displays RTA with bright graphics that are easy to see alongside a console while mixing. Any function accessed on the PAA3 is mirrored on the PC and vice versa—with one exception: In the PC software, clicking on the SPL Meter indicator turns the display into a large SPL-only meter. This cannot be accessed via the handheld.

THE VERDICT?

My gripes with the PAA3 are minor. A gas tank meter would be more helpful than a flashing low-battery indicator, and it would be great if the PAA3 could source power via USB when connected to a PC. Regardless of minor quibbles, the PAA3 is invaluable for any engineer. Along with headphones, earplugs and a test CD, it quickly became part of my standard pack for sessions and live shows. The PC software is a home run, so much so that I'm looking for virtual PC software to run it on my Mac.

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MOTU Traveler FireWire I/O With Preamps

Computer-Based, On-the-Go Recording

These days, laptop computers provide as much—if not more—horsepower as your desktop behemoth. As a result, the availability of audio interfaces for mobile recording is on the rise. The newest offering in this genre from MOTU is the Traveler, a complete computer-based recording system providing 20 audio inputs and 22 audio outputs.

Retailing at \$895, Traveler operates under Windows and Mac OS at resolutions up to 192kHz/24-bit and connects to a CPU via FireWire. The unit derives its power from the FireWire bus, external DC adapter or a battery port on the side panel. Weighing in at only 3.8 pounds, it's only one-rack-space high (rack ears are included), with a profile barely larger than my Titanium PowerBook.

INTREPID TRAVELER

The Traveler packs an incredible amount of audio muscle. In addition to four rear panel balanced combo mic/line/instrument inputs, the Traveler has four balanced line-level TRS ins (+4/-10 dB) and eight balanced +4dB TRS outs—all employing 24-bit/192kHz converters. The rear panel has S/PDIF, AES, word clock and ADAT optical I/O, ADAT sync input and two FireWire ports for daisy-chaining up to four Travelers. The ADAT optical, AES and S/PDIF ports can be used simultaneously as discrete I/O, and support 96kHz/24-bit resolutions. The side panel has MIDI I/O, the power jacks and a bus power switch that determines whether the unit sources power via FireWire. For most of my tests, I powered it from the FireWire bus.

Traveler's front panel has 11 multifunction rotary controls, a headphone jack, a mix window and LEDs indicating level for analog, S/PDIF and AES I/O, sample rate and "lock." The first four rotary knobs control input level for channels 1 through 4. Each click of the detented knob changes gain by 1 dB—essentially providing digital control over the analog circuit. Under these knobs are switches for 48VDC phantom powering to the mic inputs. Inputs 5 through 8 provide +4/-10 switching and a 6dB boost; there is no continuous level adjustment for these channels, so you'll have to tweak level at the source. Additional



knobs control the built-in CueMix DSP mixer and headphone volume. Pushing the volume knob switches control to the main output volume; it would be nice if the knob defaulted to control the main outs instead of the 'phones. I/O levels can be accessed at the front panel for complete stand-alone mixer operation.

SOFTWARE AND SYNC

MOTU ships the Traveler with AudioDesk workstation software, CueMix DSP and several FireWire utilities. The FireWire CueMix Console is a virtual mixer that works with CueMix DSP, allowing you to tap any input signal's audio stream and route it directly to any output for no-latency monitoring. Four independent CueMix masters can be routed to any audio outputs, including the outs being used by your recording software. In this case, they are merged with that software's track playback. During my overdub sessions, the CueMix DSP app proved invaluable, whereas computer-induced latency might otherwise have created problems. FireWire Console provides control over sample rate, clock source, default stereo I/O, optical I/O (ADAT or Toslink) and 'phones mirroring.

The Traveler's sync capabilities are dizzying. The unit can slave to clock via word, AES, S/PDIF or optical input, and—using the supplied FireWire SMPTE Console—can receive timecode via MIDI in/from any analog input. FireWire SMPTE Console also generates (or regenerates) SMPTE to any analog output. I tried just about every sync/timecode combination imaginable, and they all worked without a glitch. The only timecode feature not included is the ability to generate MTC at the MIDI out.

TRAVELING WITH TRAVELER

I initially used the Traveler and AudioDesk to record two live shows from the eight group outputs of a Yamaha PM3500. The

first show was recorded without a hitch. During the second night, I experienced some problems where AudioDesk popped out of record and gave me disk error messages because my hard drive was too slow to keep up with data flow on the FireWire bus. I upgraded to Glyph Technologies' new PortaGig, a compact 100GB, 7,200 rpm hard drive designed for such applications. Once I stored to the PortaGig, everything went smoothly. The PortaGig can also be bus-powered, yet MOTU does not recommend bus-powering more than one device, so I alternated between powering the PortaGig or the Traveler using their respective adapters (both of which worked fine). After the show was over, mixdown in the hotel room via headphones was a snap.

I also used the Traveler with Digital Performer to record acoustic drums using the four mic inputs for kick, snare and stereo overheads, plus two line inputs for an Avalon AD-2022 mic pre for the toms. This recording (and other recordings at various resolutions) sounded great, with solid low end; crisp, smooth highs; and a very quiet background. High-res recordings of a Taylor acoustic guitar yielded great results with an excellent sense of depth that trumped recordings done at a lower resolution. MOTU packs a lot of versatility into Traveler while providing great audio.

IS IT WORTH THE TRIP?

Traveler may be portable, but it is by no means a stripped-down interface for mobile work. It's an incredibly powerful device that fulfills the oft-promised "studio in a box." Traveler can handle any mobile gig you can imagine, and, most importantly, it sounds fantastic. If you need a FireWire interface—portable or otherwise—then you owe it to yourself to hear the Traveler.

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From left: bassist Nick Harmer, vocals/guitar/keys Ben Gibbard, vocals/guitar/keys Chris Walla and drummer Jason McGerr

DEATH CAB FOR CUTIE

GROWING IN THE STUDIO, MAKING PLANS

By Rick Clark

The increasing popularity of iTunes and music downloading has encouraged a number of people to announce the death of the album as a listening experience. Check out the countless releases that contain only a couple of good tracks amidst a lot of filler, and you won't be surprised that there are those who say people only want to download singles.

However, *Plans*, the latest album by Seattle-based quartet Death Cab for Cutie, exudes the kind of thematic sweep and dynamic emotional flow found on those seamlessly sequenced classic albums that sneak up and get better with each listening. "This is a pretty introspective record," says Nick Harmer, Death Cab's bassist. "There are a lot [more] questions about growing older, responsibility and doubt than there are declarations and answers. I think this is cohesively the best batch of songs we've ever put together."

Death Cab lead singer and principal songwriter Ben Gibbard explains it this way: "I don't think there's necessarily a story, but there's definitely a theme here. One of my favorite kind of dark jokes is, 'How do you make God laugh? You make a plan.' Nobody ever makes a plan that they're gonna go out and get hit by a car. A plan almost always has a happy ending. Essentially, every plan is a tiny prayer to Father Time. I really like the idea of a plan not being seen as having definite outcomes, but more like little wishes."

At times, Gibbard's voice recalls the intelligence and pensive sensitivity of Paul Simon. Part of that is underscored by the sense he values language and the way thoughts and words connect.

At other times, Gibbard's voice sits in the mix with the kind of atmospheric richness of vocals heard on recordings by the Alan Parsons Project and Pink Floyd.

Conversations with the band clearly indicate they have paid a lot of attention to the production and compositional strengths of classic recordings by Pink Floyd, The Beatles, Peter Gabriel and Fleetwood Mac, as well as The Band, U2, Talk Talk and Brian Eno. Many of those qualities are evident in the grooves found in *Plans*. One particular album that received a lot of play was *Dark Side of the Moon*.

"I've been on a huge The Band and Pink Floyd kick over the last couple of years," Gibbard says. "I've really just been obsessed with *Dark Side of the Moon*, which I bought several years ago. When I was a kid, I always thought, 'Oh, that's for hippie stoners and my parents' friends, and that's their record.' I only bought it three or four years ago and it blows my mind to think that there was a time when a record as challenging and artful as that sold 40 million copies. It seems to me, now more than ever, I find myself listening to less contemporary music—my peers' music—for lack of a better way of putting it."

Chris Walla, DCFC lead guitarist/keyboardist, is also the producer. During the past few years, Walla has developed quite a reputation as a producer and engineer of substance, with credits including The Decemberists, Hot Hot Heat, the Postal Service and Nada Surf, as well as Death Cab for Cutie's body of work.

Walla's artful articulation of arrangement colorings and instrumental and vocal placement in the soundstage do much to highlight the band's thoughtful musicality. "So many of the records people are putting out today kind of sound the same," he says. "It feels

—CONTINUED ON PAGE 133

DAVID BLUMBERG

AN ARRANGER'S LIFE AND WORK

By Gary Eskow

David Blumberg started out as a trumpet player, spent some time on the road with Larry Elgart's band and then returned to L.A., his hometown, to begin a career in the recording industry. In his early days, he wrote memorable arrangements for soul greats such as the 5th Dimension, Diana Ross, Smokey Robinson and Junior Walker. Projects completed during the past couple of years include arranging strings for a new Stevie Wonder song, "Passionate Raindrops," penning four arrangements for Ray Charles' Grammy-winning *Genius Loves Company* and a bunch more for *American Idol*. In between these accomplishments lies a road that stretches for 40 years and a journey that has put Blumberg in the company of some of the greatest names in popular music.

Blumberg has a ton of stories to tell about Stevie Wonder, Charles, Quincy Jones, the Jackson 5 and many others. "I still remember the first time I met Stevie," he says. "Mickey Stevenson, the executive vice president of Motown, brought him over to my North Hollywood house. We played croquet, and Stevie used my Revox 4-track reel-to-reel machine to overdub a commercial. I've known Stevie for 40 years; he's a musician on the level of Mozart, as far as I'm concerned. At Ray Charles' funeral, Narada Michael Walden told Stevie I was 'the great string arranger,' which I thought was cute, given the fact that we'd never worked together before. I had done some arranging for Stevie back in the '70s, and one tune I



PHOTO: LARRY G. GOLDMAN

worked on turned into 'Innervations.'

"In the old days, you'd just write out an arrangement and hope it worked, but the technology of today has changed everything. I was given a two-mix of 'Passionate Raindrops,' which I brought into Logic. From there, I wrote a string arrangement using Sibelius and played it into Logic using the ESX24 sampler. Everybody but Stevie seemed to have heard the completed demo before we went into the studio to track. Oh, well—he's a hard guy to get on the telephone! No matter, the date went smoothly, and Stevie was quite pleased with the results."

Blumberg recently upgraded the project studio he operates out of his Brentwood home. "More and more producers want to hear full-blown sample demos these days, both in the record business and in films, which I've branched into as a composer," says Blumberg. Currently running Logic 7 and Pro Tools on a dual G4, Blumberg says he is about ready to switch over to a dual 2.3GHz G5; he also runs GigaStudio 3 on a PC. "Back in the 1950s, Aaron Copland wrote a book called *The Path to the New Music*, in which he predicted that the composer of the next century would also have to be an engineer and producer. He was right!"

Among the tools that Blumberg relies on heavily is the East West Quantum Leap orchestral sample library, and he says he is also a big fan of Spectrasonics. "I own Stylus RMX, Atmosphere and Trilogy, and

they are all fantastic. I also own the Lounge Lizard electric piano software application, and it's wonderful. I'm a big fan of soft synths and sampled instruments. In fact, one of the reasons that I'm moving over to the G5 is that I own Ivory, the piano that Ilio distributes, and it's too massive to run on my G4!"

Blumberg's services have been in demand since the late '60s, when he did some arranging work for Jones' acclaimed album *Body Heat*. "Quincy is a very gifted musician," Blumberg offers. "The funny thing about working with Q, though, is that he never seems to be at the session! He's got about nine careers going and is very skilled at putting together teams. I arranged the title track from *Body Heat*, plus 'If I Ever Lose This Heaven' and 'Everything Must Change.'"

Blumberg's career has had many high points—the arrangement of Gloria Gaynor's "I Will Survive" is certainly one of his best known—and his recollections of the artists and producers with whom he has worked tangle out freely. "Working with Marvin Gaye was interesting in many ways," he notes, "but the most remarkable thing of all was how softly he sang. He learned that if you sing softly, you have greater control than if you belt it out. He understood microphone singing, and his engineer was constantly riding the mic. Marvin's vocals always sounded plenty loud in the studio. Maxwell is the only other artist I know who sings that way, and Marvin is one of his idols.

"Working with Brian and Eddie Holland was also a great thrill. It didn't matter if the

—CONTINUED ON PAGE 135

David Blumberg (right) at work with Quincy Jones



PETER FRAMPTON'S "SHOW ME THE WAY"

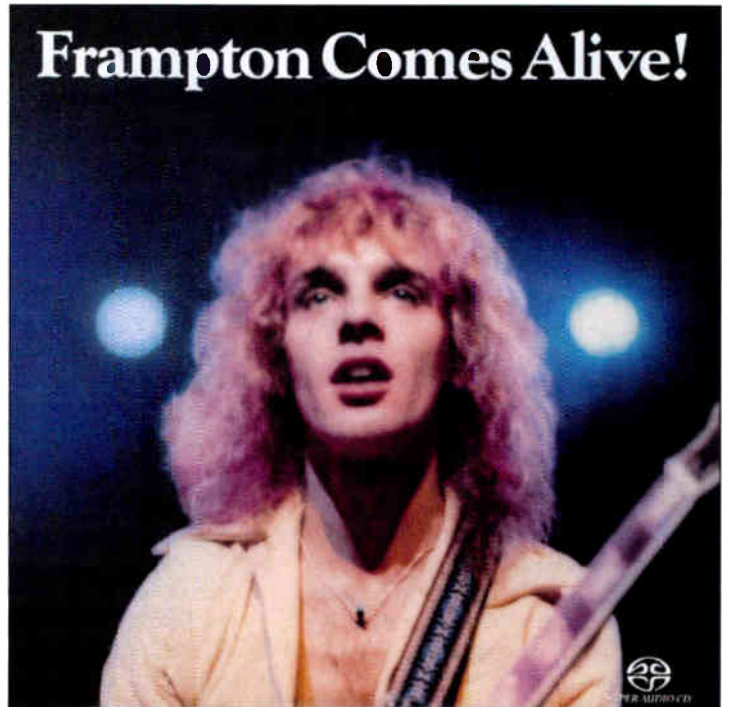
By Blair Jackson

As this issue of *Mix* has a focus on live recording, we thought it would be appropriate to finally tackle a track from the best-selling live rock album of all time, *Frampton Comes Alive*, by British rocker Peter Frampton. With sales now topping 16 million worldwide (it had sold about 13 million within two years of its release), it remains an unparalleled phenomenon. It helped spur the growth of the remote recording industry through the late '70s, and, of course, it made Frampton one of the biggest stars in the world, albeit briefly.

"Peter was the Golden Boy," offers engineer Eddie Kramer, who engineered this month's "Classic Tracks" in the Fedco Audio Labs remote truck at the Island Music Center in Commack Long Island, N.Y., in August 1975. "It seemed to be destiny or something that Peter would become a superstar. He was this really nice person and obviously very talented. He could sing, he played great guitar and he had a bunch of good songs. It was only a matter of time before he was 'discovered' [by the mass public]."

Talk about having the itch to play rock 'n' roll: The Beckenham, England, native started playing guitar in local bands as a pre-teen (even sharing a bill once with classmate David Jones, the future Bowie). By 16, he had joined a Mod-ish band called The Herd, who enjoyed some success with the teenybopper crowd around England in the late '60s. In 1969, at the age of 19, he joined screecher Steve Marriott, late of the Small Faces, and formed the hard-rocking quartet Humble Pie. They were another group that managed to attract a large following around England, but their first two albums failed to gain much notice in the U.S. However, their fourth album, *Performance: Rockin' the Fillmore* (1971), proved to be an enormous FM radio hit in the U.S., thanks to raucous tunes such as their version of "I Don't Need No Doctor." That album was recorded and mixed by Kramer, the British engineer already famous for his studio work with Jimi Hendrix, Led Zeppelin, Traffic and so many other bands, then a fairly recent transplant in New York.

Frampton, an incendiary axe-slinger who also provided most of Humble Pie's softer, more lyrical moments, left the band around the time that live album was hitting big, and by 1972, had signed with A&M Records and cut his first solo album, *Wind of Change*, with the help of Billy Preston and Ringo Starr, among others. Frampton's pleasing formula of mixing melodic acoustic elements with slamming electric guitars in the studio probably owed something to Led Zeppelin, but his inclinations were even more mainstream and commercial, even if it took awhile for his sound to take off with record buyers. The following year, he formed a group called Frampton's Camel, recorded an album under that name—engineered by Kramer at Electric Lady in New York—and started what would be-



come a succession of tours across the U.S., which—slowly, but surely—built a strong following for the handsome and charismatic performer. That album was followed in relatively quick succession by *Something's Happening* (1974) and *Frampton* (1975). The studio version of "Show Me the Way" originally appeared on the latter album, and it was the recordings of the U.S. tour supporting that record that became the source of *Frampton Comes Alive*.

Actually, at this point in the process, Kramer was not involved with the live recording. The initial tracks for *Frampton Comes Alive*—and the bulk of those eventually used for the album—were recorded by Ray Thompson at San Francisco's 5,000-seat Winterland Arena and the much smaller Marin Veteran's Auditorium in nearby San Rafael, Calif., in June '75 using the Wally Heider mobile recording truck. (Thompson had previously cut successful live albums with the likes of Aretha Franklin, Steppenwolf, King Curtis, Johnnie Taylor and others.) The story goes that Frampton played some of the tapes from those shows for A&M Records honcho Jerry Moss—including the nearly 14-minute tour de force "Do You Feel Like We Do"—and Moss was so excited that he was convinced that Frampton's live album should be two discs instead of one. So when the tour hit the East Coast in August, Moss had several new dates recorded, this time by Kramer in the Fedco truck, which operated out of Providence, R.I., and was widely renowned for past live album projects, including The Doors' *Absolutely Live* and Kramer's recordings of Humble Pie and Curtis Mayfield.

"The Fedco truck wasn't much compared to what's out there today, of course," Kramer muses. "If I'm not mistaken, it had been a bread van at one point. It had a very good-sounding custom console of some sort and Stephens [16-track] machines, which were also pretty good when they were working well. That was a nice little truck; we got some good things out of it."

DEATH CAB FOR CUTIE

FROM PAGE 130

like there is a rule book on how things are supposed to sound. When I started making records eight years ago, there wasn't this feeling of, 'This is what everyone's doing,' at least not for me.

"I think the more I do this, the more I realize I don't really have an agenda when I work on a record," Walla continues. "I'm not really setting out to do anything other than do whatever it takes to make the songs feel good. When somebody gets excited, I will take it as far as they will let me take it. I'm getting less and less hung up about whatever sounds I hear coming through the speakers, and more and more hung up on whether or not it moves me when it comes back."

Walla's ability to step out of his head and let instinct for the emotional truth blossom paid off handsomely with "I Will Follow You Into the Dark," an unadorned solo performance with Gibbard on acoustic guitar. It is one of those songs that will probably be a future classic—certainly a track perfect for a major film soundtrack moment.

"We were going to track the vocal for another song and there was something screwy happening with the headphone mix," Walla says. "We were having problems, so I said, 'Ben, this is gonna be a few minutes. Take a break.' Ben's version of taking a break while we addressed the headphone problem was to pick up this Stella guitar that he loves and start playing this song we were planning on recording some time later during the sessions. He was still coming through the vocal mic as he was playing this, and it was sounding really cool to me, so I went up and said, 'Let's track this real quick,' and we did and that's what's on the record. It was a mono recording with no effects. Nothing. I added a little compression and de-essed it a bit. It's really weird. It's totally there and it's happening."

While that song is an example of trusting the essence of a performance moment, "Soul Meets Body" (the first "single" off of *Plans*) is a masterfully sculpted piece of pop that sounds very simple, but is smartly nuanced and constantly changing. Walla describes the feel as a "disco song that has pretty much a bunch of acoustic instruments on it," but that is due more to the way the kick drum and the accentuated hi-hat sit in the mix. "It's run by a couple of acoustic guitars and a little DI'd acoustic guitar, as well as pianos, vibraphone and a four-part trumpet harmony that happens throughout the song," says Walla. "I'm excited about that song, and I think it turned out really, really well."

Even though Walla is the producer, there

Joe Walsh, Iron Butterfly and others preceded him—but he certainly popularized it; it became part of his signature sound, and today, Frampton sells his own version as part of his Framptone line of guitar accessories.

As for the audience mics, "I usually had a pair looking out into the audience from the stage, and if I were lucky enough and we got there early enough, I got the guys to sling mics above left and right in the rear [of the hall] to capture the audience; alternatively, if I couldn't do that, I'd put a pair facing edgewise off of the front-of-house desk, facing left and right or rear, or sometimes even facing front. My favorite audience mics were [Neumann] 87s, but I know I also would use [AKG] 414s."

Chris Kimsey did the bulk of the album's mixing at Electric Lady Studios in New York City, but Frampton himself mixed "Show Me the Way" when Kimsey had to leave to work on another project. The album was mastered at the Mastering Lab in L.A. by Mike Reese.

Frampton Comes Alive charted immediately after it was released in January 1976, and by February, the single of "Show Me the Way" was skittering up the charts, eventually landing at Number 6. The album itself would hit Number One and stay there for 10 weeks; its success also catapulted the *Frampton* album to Gold status. If you were anywhere near a radio in 1976, Frampton was inescapable. And it wasn't just a couple of songs getting airplay; FM radio went deep into that album, and why not: It was strong from beginning to end, and it seemed to put a smile on everyone's face.

After the massive and unpredictable success of *Frampton Comes Alive*, the newly minted superstar capitalized on his fame by playing arena and stadium shows around the U.S., and his next studio album, *I'm In You*, yielded Frampton's biggest hit single ever (the title track, which reached Number 2) and sold millions, but not *enough* millions, apparently. The album was widely viewed as a commercial disappointment, and that was followed by two more traumatic career blows: first, his appearance as Billy Shears in the widely (and rightly) despised film *Sgt. Pepper's Lonely Hearts Club Band* and then a serious automobile accident that put him out of commission for several months. Frampton never regained the momentum that seemed all but unstoppable during 1976 and 1977, but to his credit, he has managed to carve out a dignified and reasonably successful career in the years since. No longer the Golden Boy, he still has some serious chops, and everywhere he goes, he's still revered for making some of the finest commercial rock of the 1970s. ■

"Show Me the Way" was one of three songs on *Frampton Comes Alive* that was recorded at the cavernous Island Music Center, the one-time home of the Long Island Ducks minor-league hockey team and a popular mid-sized hall for rock acts when it was known as the Long Island Arena. (I saw Hot Tuna play there in 1971 and can testify to the hall's abysmal, airplane hangar-like acoustics.) In a quote on Frampton's Website (www.frampton.com), he relates that "Show Me the Way" came from an incredibly prolific period right before the recording of *Frampton*: "The whole album only took three weeks to write and gave us 'Show Me the Way,' which was written one day before lunch, and 'Baby, I Love Your Way,' which was written the same day, after tea, as the sun was setting." The studio version of "Show Me the Way" was released as a single during 1975, but failed to catch fire.

Kramer says that he would generally use whatever mics a band was carrying for his live recordings, "but I would also make a few swaps. I'd talk to the P.A. guys and maybe get some [Neumann] 67s in there as overheads, for instance." Whereas in his early days of live recording when he would often use a split from the snake before it hit the P.A., Kramer suspects that by the time of the Frampton recordings, "We went into splitter boxes first and then I would take my feed and [the front of house] would take theirs, but we would kind of jointly figure out if they could tolerate using some better mics and, generally speaking, they did." Frampton's group was just a four-piece—John Siomos played drums, Bob Mayo on keyboards and other guitars, and Stanley Sheldon on bass—but that was still plenty to quickly max out the inputs, considering there were also audience mics to hang.

Though his memory is hazy on the details of the recording that occurred more than 30 years ago, Kramer suggests that Frampton likely sang through a Shure SM58 and there was probably an SM57 on his guitar amplifier. Frampton famously played a black Gibson Les Paul with three pickups, and on "Show Me the Way" (and "Do You Feel Like We Do"), he employed a Heil Sound Talkbox as a primary effect. The way that box worked is, the speaker output from the guitar amp was routed through the box, up a long, thin plastic tube mounted on Frampton's mic stand. He would put his mouth over the tube and then "sing" the note he was playing on the guitar—the two elements combining in his vocal mic, giving a weird electronic character to a note or word as it shot back through to a miked amp. Frampton wasn't the first rock performer to use a Talkbox—Black Sabbath,

is no doubt that Death Cab for Cutie's music and recording sensibilities are the result of a band mind-set. "It's really democratic," comments Walla. "We all listen to one another and are all really respectful of each other and trust that each of us are in this to make the best thing that we know how to make. If somebody pulls the alarm on something, everybody listens."

One of the obvious developments in Death Cab's ensemble work had to do with the entrance of drummer Jason McGerr. "Plans is only the second record we've ever made with the same lineup," says Gibbard, who is a drummer himself. "Jason's been a friend of ours for years, but he joined the band in late 2002. He's really good at focusing in on the songs and not having the fact that he's a great drummer become the most important thing in the music."

Plans was recorded at Long View Farm in North Brookfield, Mass., with additional recording was done at Avast!, Robert Lang Studios, The Hall of Justice and Skrocki in Seattle. The album was mixed at Smart Studios in Madison, Wis. Other engineers who assisted were Mike Lapierre, Kip Beelman, Robbie Skrocki, Beau Sorenson and Chris Shaw, who mixed "Crooked Teeth" at Soundtrack in New York.

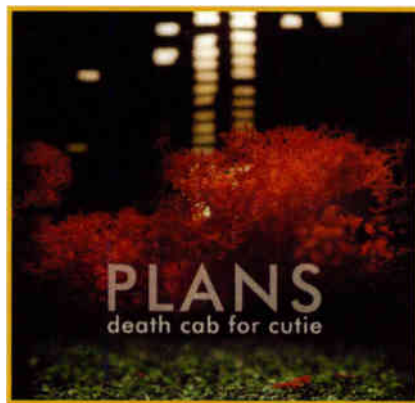
Throughout the band's career, Death Cab has always made it a point to record analog and even release heavy-duty vinyl versions of their albums. With each release, there has been a palpable improvement in recording sonics and production smarts. They even released an SACD version of their last album, *Transatlanticism*.

Interestingly, the band still programs their sequencing as if vinyl was the format destination. "Our conversations still revolve around listening to records, and we still make our running orders based off of vinyl," says Harmer. "We talk about things being inside and halves and what does the first half and second half do? We are always making sure there's a good consistency and flow. *Transatlanticism* on vinyl sounds amazing. It is a really nice pressing on heavy vinyl. We used all analog production straight through and never touched digital. We are very happy with that."

Mastering for *Plans* on vinyl and CD was done by Roger Seibel at SAE Mastering in Phoenix. "Roger's process for mastering was unlike others I've had," says Walla. "He tweaks in several stages—some analog EQ and compression on the front end before conversion, some in the digital realm with the Weiss. Lots of de-essing on this particular record. Roger monitors everything at 16-bit/44.1 kHz as it ends up on CD. Very nice that way—to leave

with a record that sounds like it did in the mastering room, rather than the dithering nightmare that so often happens on the tail end when you get the record to your car."

At a time when it seems that fidelity, dynamics and spaciousness are almost forgotten art forms in the world of rock and pop, *Plans* is rich with interweaving motifs and rewarding ambient detailing. "Fidelity wise, the last record [*Transatlanticism*] was a great



leap forward for us," says Harmer. "If I listen back to our old records—I'm not unhappy with them at all, but what I hear in each record is us really maximizing every available piece of technology that we had in front of us at the time.

"Each record is a step up to better machines, better outboard gear, better microphones, plus you can also hear Chris' [Walla] learning curve get steeper as we progress into our career," he continues. "He learns more and tries more things, gets better at certain things. I'm so excited about the overall sound of the record. There's so much depth and density in each song, and I'm very happy about a lot of little moments and discoveries that are really catching my ear. I'm very proud."

Even though the band emerged from the indie music world on the Barsuk label, Gibbard expresses frustration at how a number of indie enthusiasts have a perplexing way of championing bad-sounding recordings.

"I remember going to the bank so we could buy an [AKG] 414 when we first started years ago. This was a really important moment in the fidelity of the band. We were going to buy this expensive, really nice microphone, and the woman behind the bank counter said, 'Oh, are you guys buying a car?' Chris said, 'No, we're buying a microphone,'" Gibbard says with a laugh. "Of course, the 414 ended up on everything 'cause it was the only good mic we had. I think every record we've done since, there are the indie snobs who'll say, 'Oh, everything's getting too produced and too slick.' I think that we've

always wanted to make the best-sounding records we could make, and with every record, we've had a little bit better equipment and a little more money to increase the fidelity and make things sound fuller."

Walla and the band made the leap from straight analog multitrack to digital for *Plans* when they discovered the iZ RADAR S-Nyquist (192kHz I/O) with the Adrenaline Plus recording engine. Even though he had resolutely resisted other digital formats, Walla sensed a change might be in order.

"I felt I needed some more flexibility because I was doing projects where other mix guys might be involved," Walla says. "It seems nobody wants to send reels of tape anymore and some places don't have tape machines. I was just starting to feel a little bit left behind, but when I would talk to people about Pro Tools or Nuendo, they were like, 'Yeah, it's cool. It's good.' But I couldn't find anybody who felt passionate about their digital system the way the hardcore tape guys felt about tape. There's just so much raw data you have to deal with that the documentation process in the digital world seems kind of nuts. Where it once took one or two people, it seems like it takes a village to make a record now."

Walla found a very similar passion in people who had jumped to RADAR. "People I respected were saying, 'This is what you need to do. This is a great system. It sounds great and is totally rock-solid. When you start using it, you will find that your session will move like when you're working on tape,'" enthuses Walla. "I think that's true, because I still end up punching performances. I don't do a lot of editing and moving stuff around and that part of it is really nice. The company itself is great and if I have a question or a problem, you call them and you actually get somebody on the phone. I heartily recommend RADAR to anybody who was thinking about doing the digital thing and wants to keep some part of their analog process intact."

Walla's other favorite production devices include the Chandler Limited TG1 Abbey Road Special Edition (a re-creation of the classic '60s-era EMI TG12413 limiter), the Millennia HV-3D 8-channel microphone pre-amplifier and a rather arcane unit by Lexicon called the Varispeech time compressor/expander, which he likes to use to enhance drums—particularly snare—sounds.

"I don't think I'll be going anywhere without that any time soon," Walla says of the Chandler. "It makes everything sound like a little angel. It's all over the whole record: piano, vocals, bass guitar, drums, like drum overheads. Everywhere I could smash it in, I did. I really like it a lot."

Still, Harmer says, "There are a lot of built-in dynamics in our music; it's something we think about a lot. There is a tendency for people to want their records to have this immediate sound that's cranking and loud. It's almost like an assault and it sort of crushes you sonically from the top."

Adds Walla, "Trying to make everything sound like it's rockin' on your car radio is not really the goal."

That said, *Plans* certainly has its share of radio-friendly pop. But Death Cab for Cutie clearly embraces the idea of the album as a complete experiential piece. "I don't know if this is a function of what I've [been listening] to, but the idea of making a record that is just 10 songs in a row seems like the most boring thing in the world to me," says Gibbard. "The idea of making records that are meant to be listened to as a more continual piece of music is something we're all more interested in doing as we continue to be a band." ■

DAVE BLUMBERG

FROM PAGE 131

song they were working on became a hit or not. These were legendary producers, and just seeing how they worked and having the opportunity to work with them was fabulous. Working with Quincy was also an honor. Bob Gaudio of the Four Seasons was a fabulous producer, and Lamont Dozier is a gem."

Working with Charles on the legendary singer's final album also provided some indelible memories. "Ray changed things around all the time and that could make things difficult," Blumberg says. "He'd have us over to his studio, play a song on the piano and then I'd write out a string or horn arrangement. The next day, when the players showed up, Ray might have a criticism and would play the song again with different chords! Of course, the parts wouldn't work with them, so we'd have to convince him that he'd played differently the previous day!"

"I wanted to record strings for 'You Don't Know Me,' which Ray sang with Diana Krall, in Studio A or B over at Capitol Records. Those rooms sound great, but Ray insisted that we track at his place. Engineer Mark Fleming was brought in to track the strings, and I was amazed at his ability to get a great sound in that low-ceilinged room. After we completed the session, Ray called me up and basically said, 'Son, you're going about it all wrong. Here's the way we're going to do it.'

"So for the first time in my career, I had to record all of the string sections separately to minimize leakage. I guess Ray

wanted the most control over the mix that he could get. I chalked it up as an idiosyncrasy of the legendary prophet of music."

In recent years, Blumberg has brought his skills to the young singers on *American Idol*, a move that initially caused him some trepidation—he wondered about the caliber of talent that would be appearing on the show. But Blumberg says he has been impressed by many of the singers who have appeared during the past several years. "Of course, you've got to accept the fact that artists like Bob Dylan and Neil Young would never make it on the show, which demands that singers have the ability to perform in a variety of styles," he says. "Vonzell [Solomon, from last year's program], for example, is a terrific singer. But how can you avoid comparisons with Aretha [Franklin] when you sing 'Chain of Fools,' and who could possibly top the queen? Still, some great singers have worked their way up the ranks.

"Things move quickly on the show, so I stayed with Logic 6 while working on it. Logic 7 is great, but the bugs hadn't been worked out of it when I was doing the last round of arrangements. The way that show works is that the artist works with a pianist and they create a one-minute version of the song he or she will perform that week. Ricky Minor hired me and five other arrangers, and if you're assigned a song, you go to Ricky's iMac site and download the sheet music, the piano/vocal sketch and an MP3 of the original version of the song, the one that was a hit.

"I download these files and import them into Logic. From there, I find the tempo that works with the track and beat-map it so that everything lines up. They send me blank score pages from Finale, and I write the score into them the old-fashioned way and then fax the parts over to the producer."

When he's not writing and arranging music, Blumberg is passionately teaching the Equal Interval System (EIS) composition method of Lyle (Spud) Murphy, the great jazz arranger for the likes of Benny Goodman, Tommy Dorsey and many others. Like other acolytes I've spoken with, Blumberg is a devout follower of Murphy, now in his late 90s. Information about Murphy and the EIS can be found at www.equalinterval.com. "The thing to grasp about this course is that it's over 1,200 pages of musical tools that Spud lays on the student, lesson by lesson," Blumberg says. "The Website has MP3 examples from many of Spud's students, and a downloadable brochure. After all this time, I still feel that Spud is like a modern-day Bach—he's the king of line writing!"

But even Spud doesn't have credits to match Blumberg's. ■



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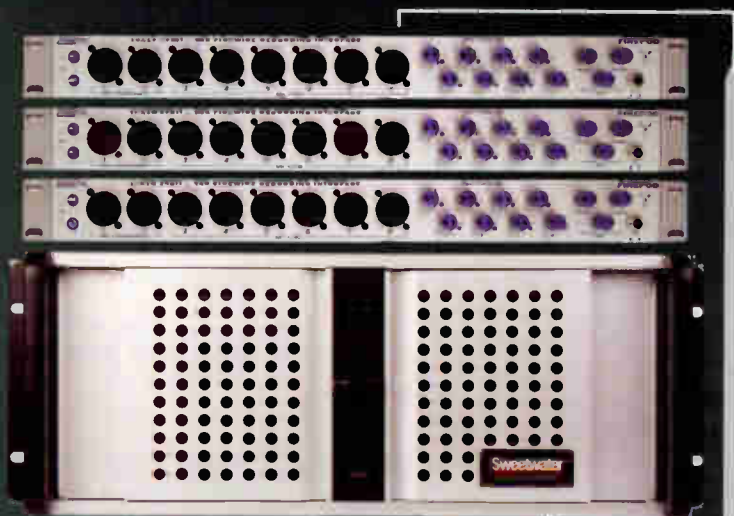
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Higher Ground Hurricane Relief Benefit
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Dr. John & The Lower 911

Sippiana Hericane
Blue Note

Both of these fine CDs were created to raise money for groups aiding victims of Hurricane Katrina, but are worthy releases even without the good intentions. New Orleans R&B legend Dr. John (Mac Rebennack) weighs in with a suite of songs—some instrumental, a few with vocals—that were directly inspired by the hurricane. There is sadness and anger, but also rays of hope in the deep blues and funky R&B that Dr. John and his three-piece band lay down. It's a moving, if dark, portrayal of troubled times from one of the city's favorite sons.

Higher Ground, which features highlights from an all-star concert at New York City's Lincoln Center a few months ago, also has a strong New Orleans pedigree: The executive producer was Wynton Marsalis, whose Hot Seven band offers a smokin' version of Satchmo's "Dippermouth Blues," and then there are sterling tracks by local New Orleans greats such as Art and Aaron Neville (a rollicking "Go the Mardi Gras"), Terence Blanchard (a moody piece called "Over There"), Buckwheat Zydeco ("I'm Gonna Love You Anyway"), trumpeter Irvin Mayfield (a stirring "Just a Closer Walk With Thee") and the Jordan Family ("Here's to Life"). There are also superb contributions by artists that include gospel belter Shirley Caesar, James Taylor, Bette Midler (fronting the Lincoln Center Jazz Orchestra), the Marcus Roberts Trio, and jazz singers Dianne Reeves, Cassandra Wilson, the ubiquitous Diana Krall and Norah Jones, whose solo take on Randy Newman's "I Think It's Going to Rain Today" is breathtaking. It's diverse and all quite magnificent, full of heart and soul.

Sippiana Hericane producer: Mac Rebennack. Engineer: Ray Bardani. Studios: Bearsville (Woodstock, N.Y.), Sound on Sound (New York City). Mastering: Vic Anesini/Sony N.Y. *Higher Ground* producers: Andre Kimo Stone Guess, Michael Cuscuna. Recording: Frederick P. Rose Hall (New York City) by John Harris and Rob Macomber/Effanel Music. Mixed at Bennett Studios (Englewood, N.J.). Mastering: Kurt Lundvall. —Blair Jackson



Adrienne Young

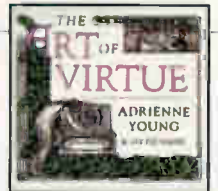
The Art of Virtue
Addiebelle Music

Adrienne Young quotes the Quakers and cites

Ben Franklin's *Thirteen Virtues* as inspiration, but still manages to keep the music fresh on her sophomore disc. The singer/songwriter/multi-instrumentalist mixes folk/pop originals with American roots traditionals, and they sit together like kindred spirits. The Young-penned title track and "Jump the Broom" will keep toes tapping, while "Hills & Hollers" brings awareness about our blacktop-coated landscape. Some of Nashville's ace roots musicians chime in for a rousing "Don't Get Weary" by Uncle Dave Macon and a spot-on "Bonaparte's Retreat" from Kentucky fiddler William Hamilton Stepp. Young's sweet voice, backed occasionally by multi-gifted co-producer Will Kimbrough, tie it all together in one environmentally and personally conscious package.

Producers: Young, Will Kimbrough, Gary Paczosa. Engineers: Paczosa, Adam Bednarik, John Deaderick. Studios: House of David, Minutia Sound, Deaderick Studios, Nashville.

—Heather Johnson



Quadro Nuevo

Luna Rossa
Justin Time

The name is Spanish, the musicians are Germans and a Brit, and the music that this quartet (reeds, acoustic guitar, accordion, bass) plays is all over the map. On this disc alone (actually their first, from 1997, but new in the U.S.), this very international ensemble dips into music from Italy, Germany, Argentina, Venezuela and America, and also offers a handful of originals that sound like they were lifted from some European or Latin café. There's a cool version of "Nature Boy" (popularized by Django Reinhardt) and the lovely "Our Spanish Love Song" by jazz bassist Charlie Haden. There are tangos, a bolero and waltzes with Cuban and French accents. It's sensuous, sonorous and mellow enough to accompany a romantic dinner, but there is also a palpable feeling of adventure and discovery in the arrangements. It's a bold but strangely familiar fusion.

Producers: Quadro Nuevo. Engineer: Wolfgang Lohmeier. Studio: Tonstudio Schlag. Mastering: Guido Hieronymus.

—Blair Jackson



TNT

All the Way to the Sun

Mayhem Records

It's hard to believe that heavy arena rock could come out of just two performers: TNT's Tony Harnell (vocals) and Ronnie LeTekro (guitars), finally get the nod they deserve with their eighth studio album. Packed with soaring guitars and Robert Plant-like vocals, *All the Way to the Sun* is a fabulous tribute to the Golden Era of rock: Black Sabbath, Led Zeppelin, Queen and many others, whose influence is clearly amplified in this fine release. Backed by drummer Diesel Dahl, whose back beat remains solid, *ATWTS* shines, from its classic-sounding rock grooves ("A Fix," title track and "Black Butterfly") to more modern-day sensibilities ("Driving" and "Ready to Fly"). It's classic '70s metal with a modern twist.

Producers: Ronni LeTekro, Tony Harnell. Engineers: Erland Hvalby, Kjartan Hesthagen, Bruno Ravel (vocals). Mixed and mastered by Tommy Hansen. Studios: StudioStudio (Norway), Soundcheckers Studio (NYC).

—Sarah Benzuly



Bonney & Buzz

Rock-Ola
(Double Crown)

I confess to ignorance of the illustrious pasts of Bill Bonney and Pete "Buzz" Miller, who were part of two successful early '60s British bands, The Fentones and The Jaywalkers. No matter; this disc of deliciously retro rock instrumentals instantly brings me up to date (or back to the past). It's all here: the lonely twangy guitar leads (Miller), insistent bass lines that alternately throb and sing (Bonney), bright melodies, solid hooks and a few slow-dance numbers. There are plenty of cool guitar textures, thanks to copious overdubbing, but it all still feels like a band at work. There are echoes of artists such as The Ventures, Duane Eddy and other early '60s purveyors of instrumentals, but it's not just nostalgia. The recording is crisp, clean and modern-sounding, even with the occasional ladled-on reverb and some glorious tape hiss. A rollicking good time!

Producer/engineer: Pete Miller. Studio: Ocean beach (S.F.).

—Blair Jackson



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L.A. GRAPEVINE

by Heather Johnson

There was a time, way before my time, when record labels *groomed* an artist. They would pluck them out of obscurity, polish up their image a bit and put them through weeks of rehearsals just to get them studio-ready. They would record in a label-owned studio, with label-approved producer, engineer, musicians and songs. Then the label would do its part to get the music to the public. That artist often didn't have much power and, in worst cases, didn't see many royalties, but

a program for the Learning Channel about daredevil occupations hosted by Ice-T. Producer Patrick Hildebrand's 2003 arrival led to more music work for Independent Film Channel's *Film School*, NBC's *Starting Over* and a track for the Miramax film *My Baby's Daddy*.

At the same time, plans for entering the music business began to take shape. The first release on the Centerline Music & Entertainment label, from hip hop artist Kev, was recorded at Centerline's studios, which runs Logic Pro software on two Mac dual-G4 computers networked to an Xserve RAID with a 750-gig hard drive. A Yamaha 02R acts as the primary control surface in the 1,200-square-foot control room with cathedral ceiling, also stocked with Avalon, Focusrite, Digimax and Presonus mic pre's and monitoring from Mackie HR824s. The 200-square-foot live room houses a drum kit, Roland, Korg, Yamaha, Rhodes, Kurzweil and a Hammond M3 organ.

While most Centerline Entertainment hands take full advantage of the cool instruments and living room vibe, their first rock act, Dig Jelly, barely saw the control room. "They came in with an album that was pretty well-done," says Lipp, noting that most acts show up with nearly finished products recorded at a home studio. "It's raw, but it's good."

After teaming with D1/Innovative Distribution Network last year, the Centerline roster has grown to include a range of rock, alternative and hip hop acts—some newly formed, others looking for a new home after getting dropped or ignored by a larger label. "We started working with bands that are a little bit further down the road," says Lipp. "They're not as young as the bands that the majors like to pick up; they're not kids."

They're also treating them differently, considering themselves partners with, rather than financiers of, the artists and focus their

—CONTINUED ON PAGE 144

NASHVILLE SKYLINE

by Rick Clark

If you play pedal steel and want to cut an album, Nashville would seem like the most obvious place in the world to go. After all, pedal steel is as much associated with country music as mandolin, fiddle and lyrics that ensure you will cry in your beer. But if Béla Fleck can take the banjo into the realm of fusion, why can't the pedal steel get pushed past hardcore honky-tonk clichés?

When I first heard about Robert Randolph and the "sacred steel" phenomenon five years ago, I had to scratch my head and visualize how pedal steel playing with gospel would sound like. Was this Sunday school hymnal music with the lead instrument respectfully playing the melody line and no hot-doggin' on the frets? Was it like pre-bluegrass string band music where everything was mannered and low-key?

What I discovered when I first heard Randolph's take on steel was musically much closer to Jimi Hendrix and Sly & The Family Stone in spirit than anything you'd hear on a George Jones, John Conlee or Ferlin Husky record. Randolph might not be a public household name (yet), but to a growing number of people within the music industry and many artists and players in the know, he is a giant talent. And like many of the greatest soul and R&B artists, Randolph's artistic truth evolved out of hard-won life realizations and the redemption he found through the church.

"The church that I grew up in, the House of God church, and its headquarters are in Nashville, so I've been coming here for years," says Randolph, who grew up in the urban New Jersey town of Irvington. It was in the 1930s at a Church of God in Philadelphia where the whole sacred steel sound originated. A musician named Willie Eason began playing the steel at church services, in lieu of an organ, because the cost of acquiring an organ was prohibitive for the poor urban church. It eventually became incorporated as an important and unique musical element of the Church of God services.



Centerline Music and Entertainment partner/producer Howard Scott Lipp is ready to take on the music biz.

they usually had a career that lasted longer than one album.

Nowadays, artists have a lot more creative control, but the notion of artist development is pretty much gone. The artist may fare better by going the D.I.Y. route or teaming with a few savvy individuals or companies that take an active role in the artist's career. Thankfully, there are still a few people out there who are doing just that.

Howard Scott Lipp and Chris Abraham formed Centerline Music and Entertainment Inc. (<http://centerlineentertainment.com>) in 1999 as a place to write and perform their music and develop and produce new talent. They converted an old 1940s schoolhouse into a spacious recording studio, and started getting some bites from the film and TV worlds. After Abraham departed in 2002, Lipp composed music for *Beyond Tough*,

NEW YORK METRO

by David Weiss

Randolph was introduced to me by my dear friend Jim Dickinson. His boys, the North Mississippi Allstars, would shortly hook up with Randolph and do a very cool one-off record with John Medeski (of Medeski, Martin & Wood) called *The Word*. With the enthusiasm of the Allstars, Medeski and a handful of other artists, Randolph quickly became the darling of those who appreciated his amazing facility and creativity on the instrument and really imbue it with soul. In the past five years, Randolph has appeared on recordings with Fountains of Wayne, Rob Thomas, Blind Boys of Alabama, Dirty Dozen Brass Band, Ringo Starr, Sawyer Brown and others. Soon, Robert Randolph & The Family Band became staples of the jam band touring scene and won over fans of such bands as Dave Matthews, Phish and the Allstars. There are also two fine albums by Robert Randolph & The Family Band: *Live At the Wetlands* and *Unclassified*, both worth seeking out.

During the past couple of years, Randolph has been working on what will soon be two new albums; one will be a collection of old gospel songs and some hits that have been popularized by other artists, done with Randolph's own spin. The other comprises Randolph originals or co-writes, with the exception of a version of

—CONTINUED ON PAGE 144

PHOTO: RICK CLARK



Robert Randolph works out some "sacred steel."

As a recent feature article in *Mix* illustrated ["Artist Development 2005," March 2005], artist development everywhere is on the rise. A logical extension of all types of music careers, artist development is worth a closer look here in New York City, where there are multiple approaches to this risky but potentially rewarding enterprise.

Developing Threshold Music (www.thresholdmusic.com) has been an adventure since James Walsh founded his diverse music practice in 1995, but he feels like he's in an interesting space. "Threshold could be considered a management company or a hundred different things we're just looking at it as a media resourcing company," he says from his west Midtown location. "The last thing I want it to be is a label. That's the last thing the artist wants. The talent level coming through our studio is getting better and better, people are significantly more dedicated to their craft and they're looking for ways to be independent."

Threshold, whose clients have included everyone from The Strokes, Eddie Kramer, HBO Productions and a wide range of indie artists, remain centered around its inviting hybrid analog/digital recording studio, complete with a fully floated control room featuring a terrific-sounding Trident 80B console and a spacious, warm live room. However, Walsh realized early on that he needed to be more than just a recording facility to survive. "We found that there wasn't going to be business just being in the recording business," he says. "As an artist, there's just so much more that I enjoy doing. The key for me was watching hundreds of bands come through the studio and seeing where the process has been disjointed. A band with a tremendous amount of talent couldn't take that talent to the next level because they didn't have a coordinated team effort."

PHOTO: DAVID WEISS



James Walsh (left) and Suketu "Kato" Khandwala of Threshold Music

The team comes via strategic alliances that Threshold forges with Web companies, video producers, writers and more whom Walsh chooses to occupy space in the complex. Dedicated rehearsal space is available to artists who want to work even more closely with Threshold, and who also appreciate having a prime recording studio down the hall. "We start with the artist and see what resources they can provide, then augment what they need to make a comprehensive package," explains Walsh. "Everyone has their own particular needs and situation."

"The more we can provide for the artist, the more we can look forward to getting compensated on a back-end basis, whether it's CD sales, merchandising, publishing or whatever agreement we end up finding that's comfortable for us and the artist," he continues. "The goal is to allow them to sustain their careers—we want as much money as possible to stay in the artists' pocket so they can get on the road."

Although Walsh concedes that artist development can be a risk, he can now point to his busy recording facility as something that supplements revenue, instead of draining it. "Everything I have is done so I can have that room downstairs," he says. "We're in New York City because it's the greatest city in the world, and the amount of talent here is unbelievable. Is it being nurtured? Not really. Is it disjointed?"

—CONTINUED ON PAGE 145

RYAN GREENE HAS A NEW CRUSH ROCK PRODUCER/ENGINEER OPENS SCOTTSDALE STUDIO

Producer/engineer Ryan Greene, known for producing punk and rock bands such as NOFX, Dishwalla, Lagwagon, No Use for a Name, Nerf Herder and The Dickies, among others, has relocated to Scottsdale, Ariz., and opened Crush Recording, a tracking and mixing facility armed with an SSL 9000 J Series console.

Greene, a former co-owner of Motor Studios in San Francisco, launched the 1,700-square-foot facility in August 2005 with partner Steve Smith (president of Radio Ratings Inc.); together, they operate a production company and plan to "branch out in other directions" early next year.

To build Crush, Greene called up a few friends, many of whom play in bands that he's recorded, including Simplfy, Signal 2 Noise and Steve Conley, among others. They completed construction and wiring in 30 days. "We hung 500 sheets of drywall in about eight days," says Greene. "My friend was framing while we were drywalling. By the third week, everything was painted, we had electricity and A/C finished, and by the end of the fourth week, we dropped the SSL in."

In addition to the SSL console, the 20x23 control room offers a Pro Tools|HD rig (48 out), mic pre's from Neve and Avalon, and assorted other outboard gear, while in the 16x18 live room, clients can choose from Diezel, Bogner and Marshall amps, as well as 18 guitars, including everything from Tom Andersons to Les Pauls to Fender Strats. "People can walk in with nothing and because of the gear the studio has, they can walk out with a major label-quality record for a quarter of the cost. The amps that bands like Nickelback and Disturbed use, we have those sitting at the studio. And



Ryan Greene moved to sunny Scottsdale, Ariz., to open a new production company and recording studio equipped with an SSL 9000 J.

when you book the studio, you get everything: amps, cabinets drums. We've got it all."

Greene recently wrapped up F5's latest album (the band features Megadeth bassist Dave Ellefson) and new projects for Simplfy and Authority Zero; he also mixed the forthcoming release from Tooth & Nail act Stretch Armstrong.

BEHIND THE GLASS

TANTRIC RECORDING NEW ALBUM AT SAINT CLAIRE



From left: studio manager Ron Bennett, guitarist Todd Whitener, assistant engineer Rosco Weber, engineer Elliott Blakely and studio owner John Parks

Hard rock band Tantric took up residence at the new Saint Claire Recording Company in Lexington, Ky., to track a song for their forthcoming fourth album. Engineer Elliott Blakely recorded the band on the studio's SSL 9000 J console and on to the Pro Tools|HD3 rig. At the end of a day's work, Blakely and band didn't have to stray far—they stayed at the studio's on-site guest house.

ALBINI'S ELECTRIC AUDIO SLOW SIGNAL FADE IN STUDIO

Melodic pop/rock band the Slow Signal Fade took time out from their recent tour to record nine songs with Steve Albini at his Chicago-based two-room studio, Electrical Audio. During a session that they called "one of the best experiences of their lives" (posted at www.theslowsignalfade.com), Albini tracked the L.A. band live to 2-inch analog on one of the studio's Neotek consoles, and later mixed the songs to 2-track. Look for the forthcoming album to drop later this year.



From left: Steve Albini, Marguerite Olivelle (vocals), Chris Walters (bass), Ron Ulicny (guitar) and Aaron Vishna (drums)

WOLFMOTHER STRIKES AUSSIES PROWL THE VILLAGE



Prowling around Studio A's vintage Neve 8048, from left: Andrew Stockdale (bass/keyboards), Myles Heskett (drums) and Chris Ross (guitar/vocals)

Conjuring the spirits of Black Sabbath, Led Zeppelin and T. Rex, Australia's Wolfmother entered the Village Recorder in West Los Angeles to finish their Modular Records debut, with Dave Sardy (Dandy Warhols, Oasis, Jet) engineering and producing.

THE DUBWAY REPORT MIXING WITH LEONA NAESS



From left: Dubway studio manager Steven Alvarado, Leona Naess, producer Sam Dixon and engineer Emery Dobyns

MCA recording artist Leona Naess brought her new album to Dubway Studios (New York City) to mix with staff engineer Emery Dobyns. The British singer/songwriter had a break from her tour with Nickel Creek, though frontman Chris Thile stopped by to add mandolin parts. The album should hit stores in early 2006.

TRACK SHEET

NORTHWEST

Hyde Street Studios (San Francisco) recently re-opened Studio C, and has already brought in projects from Chuck Prophet, Rat Dog, Norton Buffalo, The Court and Spark and The Girlfriend Experience, among others...David Kershenbaum produced Melanie Dekker's debut at Sonoma Mountain Estate (Sonoma, CA)...Adam Rossi produced and engineered Megan Slankard's EP at his Palo Alto, Calif., studio, with additional engineering done by Justin Weis...Joaby Deal, senior mixer at One Union Recording (S.F.) completed 5.1 mixes on spots for the film *Wallace & Gromit: The Curse of the Were-Rabbit* and a Konami video game titled *Eat Your Veggies*...Nettleingham Audio (Vancouver, WA) engineer Kevin Nettleingham mastered releases for Portland acts George Mitchell, The Sea Weasels, The Better to See You With, Gingga and Dealer...Josiah Gluck is mixing Nnenna Freelon at Fantasy Studios (Berkeley, CA).

SOUTHERN CALIFORNIA

This Episode teamed with producer Rick Parker to record their debut at the Sandbox Studios (Santa Monica)...At Fexubris (L.A.), Ross Hogarth recorded tracks for Oliver Black for producer Michael Beinhorn...Mick Guzauski tracked vocals with James Ingram, Snoop Dogg and The O'Jays for Michael Jackson's Hurricane Katrina Relief single at Conway Recording Studios (L.A.)...Hollywood Sound Recorders (Hollywood) reports that Eddie Money stopped in to cut a duet for Benny Mardones' new album, produced by Jim Ervin.

MIDWEST

Katherine Schell spent weeks at Chicago Recording Company (Chicago) with engineer Mathieu Lejeune; Ron Lowe recorded and mixed Erin McDougald's new album for producer Steven Stewart Short; and engineer Jeff Lane continued work with artists Bump J and Majic...Secret Machines recorded and mixed with engineer Brandon Mason at Gravity Studios (Chicago); Badly Drawn Boy teamed with engineer Doug McBride for Q101's TBA radio show; Kasabian recorded a song with producer Jim Abbiss; and Story of the Year recorded much of their new album with engineer Steve Evetts.

SOUTHEAST

Train wrapped up another album at Southern Tracks Recording (Atlanta) with producer Brendan O'Brien and engineers Nick DiDia and Billy Bowers...Brent Lambert mastered the latest Zox album, produced by Mitch Easter, at Kitchen Matering (Carroboro, NC), as well as Valient Thorr, Jump Little Children, Mercy Filter, Claudia Quintet and Hotel Lights...Master House (Miami) mastered Latin music projects for Julieta Venegas, Los Pericos, Belanova, Chayanne, Christian Castro, Sin Bandera, Pilar Montenegro and pianist Enrique Chia.



Saulfly tracked their Roadrunner Records album, Dark Ages, at the Salmine Studio Oasis in Mesa, Ariz. John Gray engineered; Max Cavallera produced. From left: bandmembers Babby Burns, Joe Nunez, Mark Rizza, engineer John Gray and producer/vocalist Max Cavallera

SOUTHWEST

Drop Trio recorded their live acoustic album at SugarHill Recording Studios (Houston), mixed by John Griffin; and Brian Marshall and His Tex-Slavic Playboys tracked their new album with engineers Leigh Crain and Andy Bradley; Mark Rubin produced...Pat Green visited Maximedia Studios (Dallas) with engineer Michael Havens to track songs for his new album. Cheyenne Kimball was in with producer Billy Mann and engineer Michael Havens. Nichole Nordeman also worked on new material with Havens.

NORTHEAST

Producer Ron Aniello came to Avatar (NYC) with engineer Jacquire King to record Guster's latest; Anita Baker recorded vocals for a Dave Koz record with producer Barry Eastmond and engineer Michael O'Reilly; Chris Shaw mixed Jackie Greene's latest with producer Steve Berlin; and Kevorkian Mastering wrapped albums for The Elected, Canadian Invasion, Famous, Annie Keating and Alexia...Cotton Hill Studios' (Albany, NY) Ray Rettig recorded voice-overs from Mick Jagger and Keith Richards with producer Barbara Goldman for a series of radio commercials just before the Stones' Pepsi Arena concert...World Wide Audio Inc. (NYC) hosted final mixes for Crash Test Dummies' *Live in Duluth* DVD...Psychofunaddicts visited Retromedia (Red Bank, NJ) to track an EP with co-producer/engineer Paul Ritchie, and Robert "Void" Caprio tracked an album for Jersey band Woodfish...Adam Ayan mastered projects for the Rolling Stones, Faith Hill, Carrie Underwood, Wynonna Judd, Bloodhound Gang, Brian Wilson, Straylight Run, Jelly Roll Morton and Nirvana at Gateway Mastering (Portland, ME)...Mario McNulty cut new Laurie Anderson tracks at Looking Glass Studios (NYC)...Tom Durack mixed Daphne Rubin-Vega's (Rent) indie project at ElevenFifteen Studios (NYC)...Lawrence Manchester tracked/edited music for the film *Across the Universe* at Right Track Studios (NYC)...Jay Newland mixed Louise Setera at Chez Newland (Norwalk, CT)...Trod Nossel (Wallingford, CT) reports visits from Mem, Own Rendition, Kathleen Fowle, Slinkback, Kim Waters and Fingerprint Records for recording and/or mastering. ■

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promotional efforts on Webcasting, Internet marketing, street teams, and videogame and film/TV licensing. "We're definitely not falling into the box as many labels have," says Lipp. "We're no longer beating the ground trying to get radio because that doesn't sell records."

This, Lipp believes, is where Centerline

that—it's like putting Smokey Robinson with Guns N' Roses. Can that work?"

Shah and songwriter Ashton Zyer spent weeks with the McLean brothers (sons of composer/performer Michael McLean), honing their sound and figuring out how to best represent two polar opposites in song form. "Scott just wants to sit on a barstool with a guitar and sing straight to you," says Shah. "But Jeff wants to be the superstar!"

Zyer emerged with tunes tailor-made for the McLean brothers. "She went into the studio and wrote 12 to 14 songs and nailed about 10 of them," says Shah. "It's like Sinatra meets Eric Clapton meets Maroon 5."

They recorded mostly at Shah's project studio, the Button Room, in Malibu, Calif. He's got Logic as his DAW/sequencer paired with MOTU's 2408 interface and a Tascam MX-2424 recorder, which he uses "solely for the converters." A Soundcraft Ghost serves as the control surface.

Shah hopes to see the duo's release, *Beautiful Mess*, out early this year. He's currently entertaining offers from indie labels and "has interest" from a few distribution companies. In the meantime, they plan to get the music to the masses via "niche" distributors and digital routes. ■

Mix assistant editor Heather Johnson is filling in for our new L.A. editor.

NASHVILLE SKYLINE FROM PAGE 141

"Jesus Is Just Alright," which was originally recorded by The Byrds. At this time, neither album is titled.

When I got the call to head over to see Randolph, he was wrapping up work on the second album at Ground Star Studios, a classic old-school facility (rich with deeply hued wood throughout) located at 12 Music Circle South, where the overdubs and mixes for this leg of the Nashville sessions took place. The tracking happened next door at Sound Stage.

Randolph and producer/songwriter Pete Kipley were leaning over the console, heads bobbing, while this slamming Hendrix/Band of Gypsies-style track they co-wrote called "Thrill of It" blasted out of the monitors. It's a big, rambunctious sound that exudes real band chemistry. Listening to this, it's hard to imagine any fan of heavy blues and funk-influenced rock not loving this.

"This is some of the best work I've ever

done," enthuses Kipley. "I'm so proud of this band, and I really hope they get huge." Kipley uses Pro Tools|HD3 and expresses a lot of enthusiasm for the Vintech Audio X73i Class-A mic pre's/EQ and the X81 Class-A mic pre/EQ. "We initially rented an unbelievable 1073 sidecar for this project, but when we did a comparison, the Vintech stuff smoked it," says Kipley, who favors the X73i for harder rock recordings. Kipley is also a fan of the Distressors. "We are using copious amounts of compression on this record. This is a break-out album for Robert and we want it to freaking *rock* in the iPod and in the car," adds Kipley.

In addition to the track I heard, there are 35 new songs that Randolph and a crew of songwriter/producers created during the past couple of years. It is obvious that a lot of heart and soul have gone into this undertaking, and Randolph has made sure this was the best representation of his artistic intent: a synthesis of funk, soul and hard rock.

"The vision for this record was a Hendrix meets Robert Randolph & The Family Band meets Sly & the Family Stone meets Stevie Wonder sound, with elements of Led Zeppelin in there, too," says Randolph. "There are a lot of fans who associate Robert Randolph & The Family band with just the jam scene or blues scene, and we want to stretch out more. We want to give a lot of alternative fans and a lot of rock fans who could really be into this project more about who we are and what we do."

In addition to "Thrill of It," Kipley also produced two other tracks for the project—"Stronger" and "Jesus Is Just Alright," the latter partially recorded at Olympic Studios in London and featuring a guest appearance by Randolph fan Eric Clapton. But with the exception of some recording in New York with producer/songwriter Mark Batson, Randolph also tracked the bulk of this

PHOTO: RICK CLARK



At Ground Star Studio, Robert Randolph, front and center, with producer/songwriter Pete Kipley (right) and engineer Mike O'Connor



Ajay Shah at The Button Room

Entertainment differs from a lot of businesses, including recording studios, that have added "artist development" to their list of services. "A lot of studios partner with bands to get them recorded, but they're missing some of the puzzle," he says. "While they have great facilities and producers, they don't know where the homes for the music are today. You can't just put a record on iTunes or in stores and hope that it sells. We partner with our bands."

Producer/programmer Ajay Shah got his start working with some of the major players; namely, Babyface and Tracey Edmonds' Yab Yum Records, a part of Edmonds Entertainment Group, which includes music publishing, artist management and the TracKen Place studio. Under their wide umbrella, he worked his way over from the marketing department to the studio where he collaborated on projects for Jon B, Shanice Wilson and Laurnea, among others. After four years at the Edmonds camp, he worked with Jordan Hill for David Foster's 143 Records, now under the Warner Bros. umbrella, before going solo.

About a year ago, brothers Jeff and Scott McLean approached Shah about producing their debut album. Shah had never worked with an unsigned act before, and the sibling vocalists had never recorded a "pro" product. "They're brothers, but they look and sound nothing alike. I don't even think anything about their personalities is alike. So to take all of these things and make a record with

album in Nashville. "For me, Nashville is a great place to record," enthuses Randolph. "We love working here at Ground Star and Soundstage. The vibe in both places is great, and we get great sounds here."

In addition to Kiple, Randolph's album employs several other fine producer/songwriters, including Tommy Sims and the team of Andrew Ramsey and Shannon Sanders. "I've worked with so many different people on this album and each of these producers has really been great," remarks Randolph. "Tom Whalley, the head of Warner Bros., has also been very helpful in this process of recordmaking, and the whole staff of Warner Bros. has been great."

Speaking more generally about the songs, Randolph notes, "There are no sad moments in this record and there isn't anything political. This is something that is going to make you feel good from top to bottom, which is what Robert Randolph & The Family Band are about. This has been a long journey, and we are now in the final stages and it is been a *ride*. There are a lot of people who have offered great ideas and really want to see us make our own kind of world in this business, and that is a great thing." ■

Send your Nashville news to MrBlurge@mac.com.

NEW YORK METRO FROM PAGE 141

Yes. Do I have the ability to organize my little corner of the world? Yes. That's what gets me out of bed in the morning."

Down on Manhattan's artistic Lower East Side, instead of hosting multiple businesses in multiple rooms, David Pattillo is multitasking in one room with Flow NY (www.flowny.com). A guitarist who did the label dance throughout the '90s with his psychedelic rock band Mer, Pattillo found artist development to be the perfect fit with where he is now as a musician, engineer and producer. "I had made a singer/songwriter record in my bedroom on a laptop," he recalls. "Then I had a baby and it was time to move out of the bedroom! I had been sharing a couple of spaces, but in 2004, I took a leap of faith, opened Flow and I immersed myself in artist development."

Working with a tight roster of young artists, including R&B singer Cilla, pop singer Reni J. and acoustic rocker Michael Schoen, Pattillo has evolved into a songwriting partner, producer, engineer and label hunter for his clients. "It started off for me to have a space in which to write songs and get them out to people," says Pattillo.

"As I started to befriend producers, they said, 'It would be really great if you can also produce the music and write the songs.' I thought, 'Hey, I can do this myself.'"

The heart of Pattillo's launchpad is his small but inspiring studio, located in an New York City artists' building where fashion designers, photographers, jewelry-makers and more share the elevator. "The room is about 225 square feet, and my main thing, having a background in mastering at Sterling Sound, was I wanted good conversion," he says, "so I got an Apogee Trak2. I also have a 12-channel Neve 54 Series broadcast console with four buses, which is amazing. There's a couple of Logic plug-ins that I like, especially the Bit Crusher. I've been experimenting with changing the bit depth to create more space in the mix."

Pattillo admits that his chosen field has its hazards, but he's ready to keep taking them on. "It's the craziest thing to get into—my partners are Mastercard and Visa!" he says with a laugh. "This is a tough business, but on the rare occasion, you do find A&R people who will sign an artist based on great songs and a great vision. That's what I'm trying to do here: be a go-between, make it happen and bring the artist's vision to life."

Dance music has always played by its own set of rules, so it's not surprising that artist development is a different animal in the hands of Kult Records' founders Dynamix (www.kult.com). Formed around the studio production team of Eddie Cumana and Beppe Savoni, and executive producer A&R Lilla Vietri, Dynamix often finds fresh talent for club and underground music, and then works to ensure an explosive debut. "We wanted to create a production name that showcases the artist so that both parts get equal exposure," says Vietri. "The idea was to build a strong production entity to make records and then the artists can branch off. A lot of times in dance music, producers think of themselves as an artist and just put their name on the record without the singer's name, but that creates tension. We said, 'Let's have a format where everybody wins, everyone's exposed.'"

When Dynamix, which has also staked its claim with remixes for names such as Toni Braxton and Cyndi Lauper, sets

out to break an artist, they'll start with a dance track, and then look for the perfect combination of vocal talent, character and stage presence to bring it home. When the record has been recorded, Dynamix releases song and singer to the clubs with a vengeance. "Every artist is seen as a part of Dynamix, so we take great pride in what they look like, how they sound and how they present themselves," Vietri says. "We set the bar high: You don't just go onstage and sing, you do a better product. If you bang out a good record and a spectacular show, the sales will follow."

Cumana relies on his great ears and a surprisingly basic setup to create his initial tracks, then gets the most for his money in the mix phase. "It starts off with Logic, Reason, Pro Tools and a bunch of plug-ins," he notes. "I just get a groove out because I'm feeling something, and that will develop into a song or a vocal record. Budget-wise,

PHOTO: DAVID WEISS



Eddie Cumana, part of the Dynamix production team

we can't spend hours on an SSL and 2-inch machines, but you can get a really good sound out of a Pro Tools rig and gear like the Dangerous 2-Bus simulating what you would do with a big analog board."

When it hits the sound system, the song is always "Dynamix Presents...", and recent club hit artists such as Inda Matrix, Nina Eve and Tina Ann can attest that Dynamix' artist development is good for dance music. "A lot of these people are very colorful and very professional," says Vietri. "Working with them is a way you can bring dance music out of its slump and bring it back on top." ■

Send your Metro news to david@dudwards.com.

—FROM PAGE 28, MY BACK PAGES

ing pabulum can't possibly be harmed by technologies that make it easier to get more music to more people, and we as professionals, helping them make their dreams into reality, will always be needed.

People, as it turns out, *would* rather get something for free than have to pay for it—unless it's *ridiculously* convenient and the hot playback device of the day will only play files you've paid for. (Thanks, Apple.) Furthermore, lots and lots of musicians are convinced they can realize their dreams without any help from us engineers or producers, thank you very much. We're still needed, but many of the folks who need us don't know that anymore.

Okay, enough self-flagellation. Writing "Insider Audio" has given me a wonderful opportunity to have fun with our industry. Some of the columns I'm proudest of are the parodies, especially descriptions of ridiculous new products, many of which were inspired by friends or readers saying to me, in what they might have thought was a private conversation, "Wouldn't it be cool if they could make..." Like this piece of imaginary retro gear, suggested by David Moulton (November 1996):

American Foods Gelaplex Reverberator (1954): The Gelaplex was an attempt by the marketing department of the company's Gelatin Dessert division to go head-to-head with Jell-O® without resorting to the risky (as they saw it) medium of television advertising. Although it was a colossal failure, the Gelaplex presaged the acoustical modeling that became a crucial design element in the digital reverbs of the future. The device is stunning in its simplicity. The 1/114th-scale aluminum molds of desirable acoustical spaces are provided with the system, and purchasers can then create gelatin models of these spaces using Amfoo's YummiGel® product. Sound is input into the YummiGel using transducers mounted in soft-drink straws (supplied with the original units). Other straws contain tiny microphones for picking up the reverberated sound. The vibrations of the transducers travel through the YummiGel to its boundaries and to the pickups in a manner equivalent to sound in a reverberant space.

Then there was the column that extrapolated on the then-current trend of naming equipment after famous people who had nothing to do with audio (April 1997).

Billgates: An all-purpose device that performs every function and operation you can think of in a studio, although it does none of them particularly well. Has a tendency to crowd out gear from competing manufacturers, and in some cases actually absorbs it.

Takes up more rackspace than you would believe possible. In spite of the fact that it runs far more sluggishly than similar products, and its confusing front panel contains dozens of badly labeled controls that you will never use, it has become an industry standard. The initial price seems quite reasonable until you realize it exacts a small fee from every user each time you plug it in.

Rush: A unique signal processor—very popular with users having only one ear (and a corresponding volume of brain matter)—that ignores anything even remotely near the left input. Outputs are parallel and labelled "Right!" and "Ditto!" Extremely effective distortion algorithm, such that any data

Never assume that the public will value quality over convenience. And also never underestimate the ability of truly dedicated engineers to force camels through eyes of needles.

that goes in emerges completely unrecognizable and way, way out of phase. Unit is much bulkier than it needs to be and output is unnecessarily loud. Inputs and outputs are XLR, but all internal circuitry is utterly unbalanced.

Windows' security holes and Rush's little pharmacological problems hadn't become issues yet or you can be sure I would have gone after them with a vengeance.

HELLO GRUMPMEIER

And, of course, there's my good buddy Grumpmeier, who was actually the invention of my *real* good buddy Tim Tully, former editor of *Electronic Musician*. He came up with the idea when he was doing a newsletter called *Studio Software Report*. He thought one of my contributions was a little too vicious to put my byline on, so he borrowed an old trick from *The New Yorker*: When they run a column that's too hot for attribution, they preface it with "A friend writes..." So the item started off, "Our friend Grumpmeier reports..."

Here are two of my favorite Grumpisms. The first is from an "Ask Grump" advice column (April 2001): The lead singer of the P*g*o*c*ers, Nolo Vox, does this really cool thing on their tune P*ss on Y*u B*t*h in

which it sounds like he's throwing up into a trash can. How did they pull off that amazing sound?

I checked with their producer, the London Conservatory-trained Trevor Trevor III. He told me, "We did most of the album at a studio in Hollywood, but for that one track, we rented a manor house in the Cotswolds for a week. We sent all the servants away except for the French cook. We tried setting the mics up in X-Y, M-S, ORTF and B-format Ambisonic. We filled about 20 reels of tape, but I wasn't happy with anything we had. The last night we were there, after a dinner of frog's legs, octopus, blood pudding and trifle, Nolo suddenly said he wasn't feeling too well and ran out of the dining room. He made it as far as a large metal drum that was sitting in the hallway that had been filled with—um, uhh—sugar. As luck would have it, one of my assistants had accidentally dropped a Shure wireless mic into the drum earlier that day, and it was still on. It was a wonderful moment, one that would be hard to reproduce, I'm sure."

The other is from an interview with Grumpmeier's son, a number-one-with-a-bullet pop-goth-gangsta-techno-grunge star (April 2002): What I really want to do is more classical. You know, what Billy Joel did, but instead of writing like some dead guy, I'll just sample the stuff like I did with *Beethoven Bytes*. That way, instead of imitating the dude, I'm actually using his actual *music*. You know, I studied piano, too, when I was a kid, and my mom has been bugging me to start taking lessons again. Do you think you will? I asked. Naah, I'm much too busy making records to spend any time learning anything about music.

FEEDBACK WELCOME

But the best part of doing my column has been the response from you, the readers. Most writers have to wonder whether their words are actually reaching their intended audiences, but I don't—*Mix* readers send letters to the editor, e-mails to me and postings to Usenet groups, and feel no compunction about ambushing me at trade shows. Whether you love or hate what I say, you let me know what you think, and that's all any writer can ask for. It keeps me motivated and it keeps me honest. Thank you.

This whole experience has worked so well that I was actually able just in the last few weeks to persuade a publisher, Thomson Course Technology, to put together a book of some of my columns, which will be out later this year. I'll keep you posted.

May the next 10 years be as interesting. ■

Paul Lehrman has nothing more to say.

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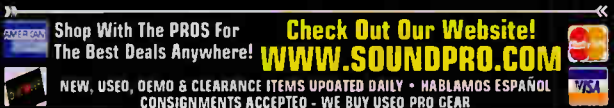
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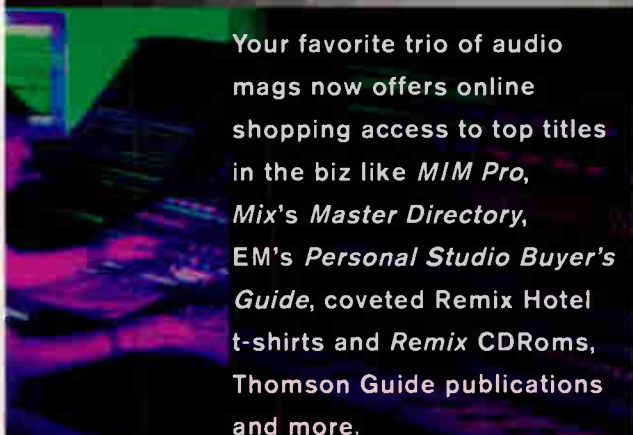
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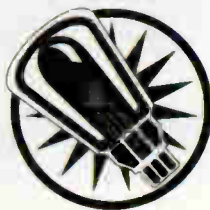


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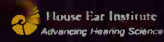
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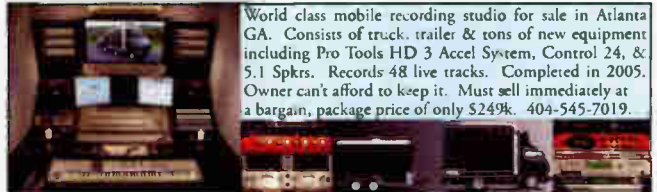
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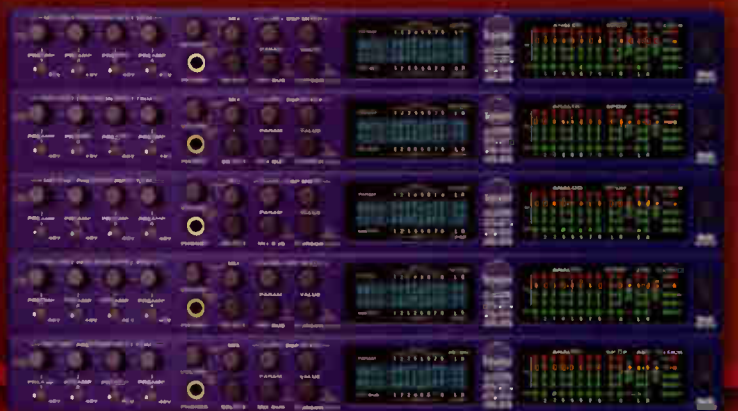
Large capsule mic

The new **RØDE NT2-A** can be plugged directly into your 828mkII or Traveler FireWire interface. This professional large capsule (1") studio microphone incorporates three-position pick-up patterns, pad, and high pass filter switches conveniently located on the mic body. At the heart of the NT2-A is the Australian designed and manufactured HF1 dual diaphragm capsule. The frequency and transient response of this new transducer has been voiced to complement today's modern recording techniques, and yet still evoke the silky smooth character of the legendary microphones of the 50's and 60's. These features provide the flexibility and superlative audio characteristics that make the NT2-A one of the most versatile condenser mics available. The NT2-A's variable controls allow switching between Omni, Figure 8, and Cardioid polar patterns. The three position high-pass filter provides a flat response or an 80Hz and 40Hz high pass filter. The microphones Pad can be switched between 0 dB, -5dB and -10dB. The NT2-A comes in a soft pouch with an M2 stand mount.



Stackable MOTU audio I/O

All MOTU FireWire interfaces, including the **Traveler**, **828mkII** and **896HD**, are stackable, giving you a cost-effective, expandable system that delivers stunning quality and performance. You can daisy-chain up to four MOTU interfaces to your Mac — even the sleek and portable **PowerBook** — and record all inputs simultaneously. For example, you could connect four Travelers directly to a PowerBook to record 64 inputs to 64 tracks simultaneously at 48kHz. If you connect four 896HDs, you can record 72 inputs to 72 tracks — all to the internal hard drive. On today's multi-processor G5's, you can expand even further with a PCI FireWire card. With four Travelers connected to the on-board FireWire bus, plus a fifth Traveler connected to the PCI FireWire card, each with 20 inputs, that's a whopping 100 inputs recorded simultaneously to 100 separate tracks. Make no mistake: a MOTU native system with multiple interfaces delivers astonishing performance and value.



Unprecedented Native Studio Power

Wireless transport control.

Looking for transport control of Digital Performer that goes way beyond your mouse or the extended keypad on your Mac keyboard? Try the new Frontier Design Group **TranzPort**, the world's first wireless DAW remote controller. This convenient, compact unit frees you from your conventional position, sitting in front of your Mac. Now you can control Digital Performer from anywhere in your studio. TranzPort has plug-and-play compatibility with DP, thanks to its dedicated DP control surface plug-in software. In addition to controlling all of DP's transport functions, you can also arm tracks for record, set markers, punch in/out, start loops and more using TranzPort's intuitive interface. You also get real-time feedback on signal levels, timecode position, track names and more via the backlit LCD and LED indicators. Controlling DP has never been more fun, convenient and flexible!



Compact MIDI control.

Looking for the ultimate compact keyboard controller for your MDTU studio? The Alesis **Photon X25** Portable 25-key USB MIDI controller/audio interface delivers the revolutionary Alesis Axyz controller dome and ten 360-degree rotary knobs, giving you powerful hands-on MIDI control of your Digital Performer studio and software plug-ins. Advanced features include 24-Bit 44.1/48 kHz USB audio I/O with balanced stereo audio inputs and outputs, 25 key, velocity sensitive keyboard, full-size pitch and modulation wheels, and an LCD screen with dedicated encoder for fast and easy set-up.



On-demand Waves DSP.

For large-scale multitrack recording systems, it is good practice to offload plug-in processing from your host computer. The Waves **APA-44M** delivers on-demand Waves processing to your MDTU native desktop studio via standard Ethernet. Open your existing Waves plug-ins as usual in Digital Performer via the new Waves Netshell™. But now you can run up to 6 Waves IR-1 Convolution reverbs at 44.1kHz at once, and save your CPU power. Need more Waves processing? Just add another APA-44M with the snap of an RJ45 Ethernet cable. It's that simple. For extreme processing needs, connect up to 8 units to your network. The APA-44M is equally at home connected to a laptop, desktop or both. Just transfer your Waves authorized iLok. You can even share a stack of APA-44M's among several computers across the Waves Netshell network. The APA-44M ushers in a new era of state-of-the-art, distributed-network Waves processing for your MDTU multitrack studio.



5-bay removable storage.

The Glyph **GT 205** is a 2U five-bay FireWire enclosure offering many advantages for large-scale multitrack recording, including hot-swap portability and convenience. Specifically designed for applications requiring multiple drives, it can be configured with four FireWire hot-swap GT Key drives up to 500GB each. Its expansion bay offers the option of AIT backup a SCSI or FireWire hot-swap receiving bay, DVD-R/RW or CD-R/RW. Using Glyph's proprietary Integrity™ hot-swap technology, you can easily shuttle content to other GT Series enclosures. To keep your studio quiet, GT Keys incorporate sound-dampening composite metal technology in their frames. Includes 3-year warranty, plus overnight advance replacement warranty in the first year for GT Keys.



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The groove.

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Mastering & restoration.

Your DP mastering and processing lab awaits you: **BIAS Peak Pro 5** delivers award winning editing and sound design tools, plus the world's very best native mastering solution for Mac OS X. With advanced playlisting, Superb final-stage processing, Disc burning, Plus PQ subcodes, DDP export (optional add on), and other 100% Redbook-compliant features. Need even more power? Check out our Peak Pro XT 5 bundle with over \$1,000 worth of additional tools, including our acclaimed SoundSoap Pro, SoundSoap 2 (noise reduction and restoration), Sqweez-3 & 5 (linear phase multiband-compression/limiter/upward expander), Reveal (precision analysis suite), PitchCraft (super natural pitch correction/transformation), Repli-Q (linear phase EQ matching), SuperFreq (4,6,8, & 10 band parametric EQ) and GateEx (advanced noise gate with downward expander) — all at an amazing price. So, when you're ready to master, Peak Pro 5 has everything you need. It's the perfect complement to DP.



Or, perhaps we should say, it's the perfect finishing touch.



The control room.

The **PreSonus Central Station™** is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a complete

studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to enhance the creative process and ease mixing and music production.



Purified power.

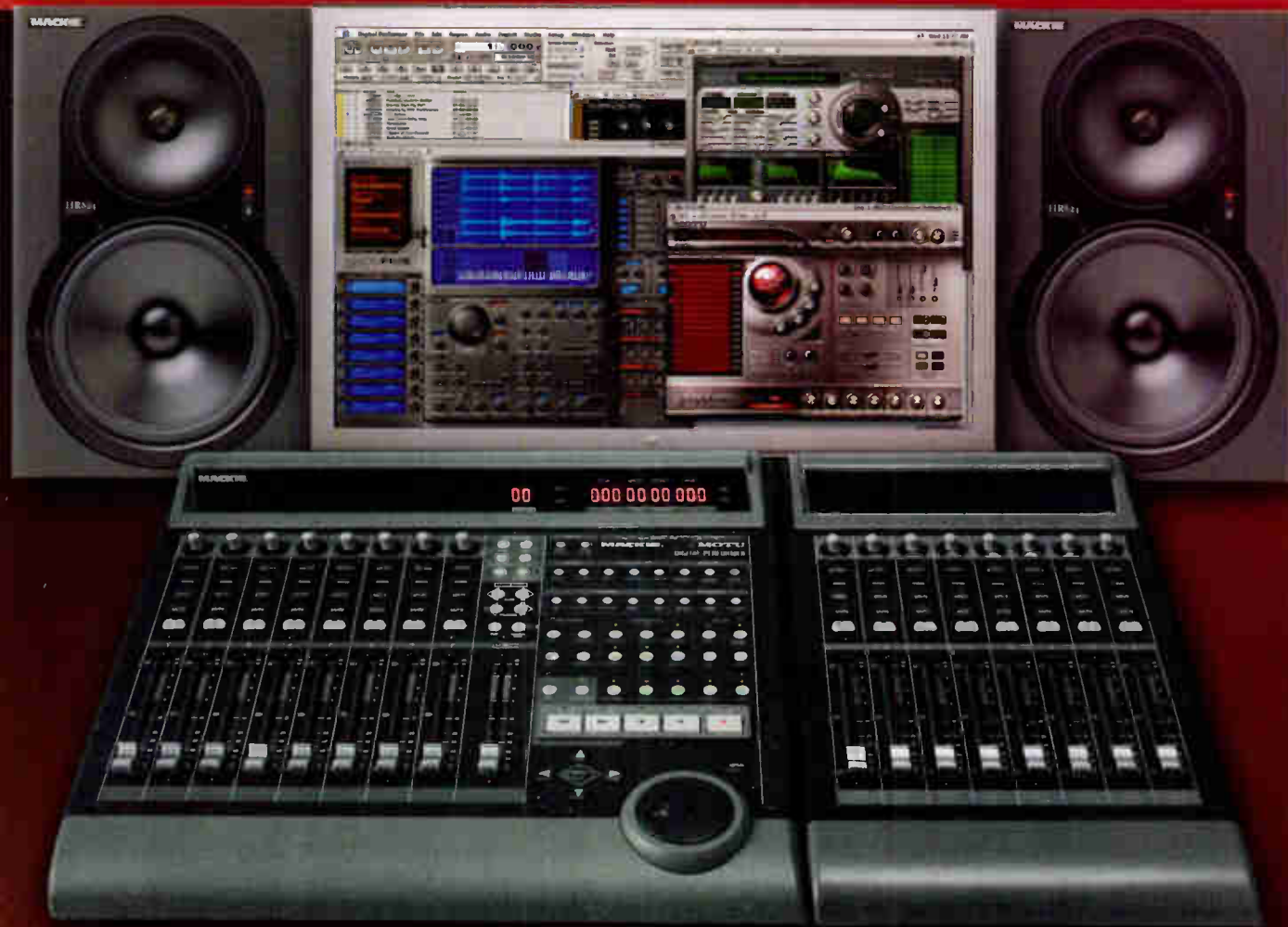
To get the most out of your MOTU studio gear, you need the cleanest power possible. The negative effects of poorly supplied wall outlet AC power on your gear can be dramatic, without your ever knowing how good your gear can really sound with properly supplied power.

Furman Sound introduces the all-new **Power Factor Pro** with its ground-breaking Clear Tone Technology™, which actually lowers the AC line impedance supplied by your wall outlet while storing energy for peak current demands — over 45 amps of instantaneous current reserve. Additionally, Linear Filtering Technology™ (LIFT) dramatically lowers AC line noise to unprecedented levels in the critical audio frequency band. Also included are Furman's unique Series Multi Stage Protection Plus (SMP+) surge protection and automatic Extreme Voltage Shutdown (EVS), which protect you from damaging voltage spikes or sustained voltage overload.

Equipped with the same LIFT and SMP+ features, plus FVS Extreme, the **Furman Sound IT-20II** ultra-low noise balanced isolation power conditioner is designed for the most critical, ultra-low noise installations. Delivering an astonishing 80dB of common noise reduction from 20Hz-20kHz, you're assured the lowest possible noise floor for all the gear in your MOTU studio. The IT-20 II's toroid transformer design assures a contained magnetic field for complete isolation from sensitive studio components nearby. The ultimate in purified power.



Unprecedented Native Studio Power

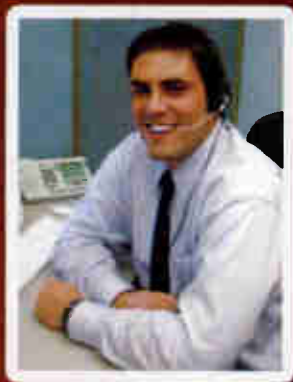


Hands-on automated mixing.

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact, desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control Universal brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on DP itself.

Accurate monitoring.

The Mackie HR-Series Active Studio Monitors are considered some of the most loved and trusted nearfield studio monitors of all time, and with good reason. These award-winning bi-amplified monitors offer a performance that rivals monitors costing two or three times their price. Namely, a stereo field that's wide, deep and incredibly detailed. Low frequencies that are no more or less than what you've recorded. High and mid-range frequencies that are clean and articulated. Plus the sweetest of sweet spots. Whether it's the 6-inch HR-624, 8-inch HR-824 or dual 6-inch 626, there's an HR Series monitor that will tell you the truth, the whole truth, and nothing but the truth.



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The MOTU system experts.

When it comes to putting together MOTU recording systems, nobody does it better than Sweetwater. Whether you're building a simple portable recording rig with a Traveler and an iBook or a 128-track powerhouse Digital Performer studio centered around the latest Quad Core GS, Sweetwater can help you select the perfect components for your MOTU system, from the specific MOTU audio interface model to control surfaces and hard drives, to plug-ins and studio monitors. Even better, we can install, configure, test and ship a turnkey system straight to your door — all you'll need to do is plug in the system and start making music.

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Yamaha PM5D Digital Console

Useful Tips for Great Live Mixes

With more than 1,000 units sold, thousands of engineers have used the Yamaha PM5D. This year's TEC Award-winning digital live console—a cross between an SPX and a PM5000—has a relatively smooth learning curve, but here are a few tips to get you started.

ADVANCE WORK

With any digital console, advance preparation eases the way. Yamaha's free Studio Manager (YSM) software includes a PM5D Editor to configure the entire board for doing your pre-soundcheck setups on a laptop while on the bus, plane or at home. When saving your work as a *.PM5 file, use meaningful labels that include both the project's name and a version, such as a date or time, like "WINWOOD071105" or "ALGREEN420PM."

I wrote a few basic YSM keyboard shortcuts on board tape and put them on my laptop to memorize them: Ctrl+2 = open input channels 1 to 24; Ctrl+Alt+2 = open input channels 25 to 48; Ctrl+3 = open selected channel control strip; Ctrl+0 = open the graphic EQ; Ctrl+8 = open the effects editor; Ctrl+W = close selected window; and Ctrl+Alt+W = close all open windows.

HOOK 'EM UP!

The software lets you expand the PM5D's 10-inch LCD with a second monitor, making it more convenient for two people to work on the desk at a time. Connecting via a Type-2 USB cable, Studio Manager can synchronize with the console, letting the system engineer assist while the artist's engineer tweaks the mix. Load a PM5D profile into YSM in Setup under the File menu. Under the MIDI Ports tab on that menu, set the USB I/O ports. For a single console, choose Port 1 for each. Next, select USB I/O ports again in System Setup under the File menu. Connecting requires you to install the PM5D driver (included with the YSM software) from the YSM's Driver folder and reboot. It's not unusual for the driver to need to be reloaded more than once.

SAVE, SAVE, SAVE

You'll learn to save at regular intervals so you can go back to a previous state in case of a catastrophe. Typical operator error is

loading when you want to save, replacing your current work with an older file. Some users turn on the incremental save, which creates a series of "historical" saves in subsequent memory locations.

Depending on the size of libraries and scenes, each console setting requires from 200 KB to 2 MB. These can be stored to Compact Flash (even the 32MB Compact Flash cards that came with older cameras can hold dozens of setups) or your laptop. E-mail files to yourself for cheap "offsite" storage.

MONITOR PLANS

Sticking with the familiar system of numbering monitor mixes—going from stage right to left and from downstage to up—will keep you from having to repatch when you get on someone else's system for a festival or support act. Organizing the way wedges, in-ears and effects send is a matter of convention. The PM5D has 12 graphic EQs, so assign them to the first dozen auxes for use as wedge mixes.

Using the first four of the eight internal effects with the last four auxes also makes sense. These first four effects are normally returned to the four stereo effects returns, leaving auxes 13 to 20 for use as four stereo-linked in-ear mixes. The four stereo effects returns don't have gates or compressors, but the four stereo line returns do, and those on the PM5D-RH versions have mic preamps and could be used for ambience mics.

GOES-INTAS

The control surface has two 24-channel "pages," so manage any input lists longer than 24 so that the split isn't awkward. Try putting the backline on the first page and the vocals, star performers and money channels on the second page. And leave some list space for adding new channels. Moving everything down to make room for another input is annoying and channel names don't copy with the channel information.

When mixing to stereo auxes, the Pan



YSM Editor screen provides access to all console parameters.

control on the channel affects only the main L/R mix. To adjust pan in a stereo aux, such as for in-ear mixes, use the first rotary encoder "knob" of the paired mix in the mix section's bank of 24. The left is pan and the right is level. When in Mix Master mode, holding the input channel's Select will temporarily take you to Mix Send mode until you release it. To put a stereo input in a stereo mix, assign and pan both channels. Note: An odd-numbered mix must pair with the next-higher even mix to make a stereo bus.

FINAL TOUCHES

Selecting DCA in the Assign Mode section lets you create DCA groups by pushing the Cue button below the DCA fader and then hitting the Cue button of every channel desired in that DCA group. Similarly, mutes are assigned by using the Scene Memory keys left of the display screen. Beside the eight Mute Group buttons are eight DCA Mute buttons.

Placing each aux bus on a row of faders makes it easier to manage a large number of monitor mixes. However, unlike an analog knob matrix, you can no longer give more hi-hat to the guitarist with one hand while giving more kick to the bass player with the other. Holding your second hand up like a traffic cop to deal with one musician at a time will become second nature.

When first using the PM5D, give yourself some time to practice the moves of tweaking and copying channels and mixes. In an hour, you'll find yourself getting around this board as you would on an analog desk. ■

Mix sound reinforcement editor Mark Frink thanks Burbank ATK/AudioTek engineer Tom Pesa for his assistance with this article.

Our Flagship Has Officially Set Sail

When we set out to develop our new **m802** 8 channel remote control microphone preamplifier, we knew we had our work cut out for us. After all, the finest audio engineers in music recording, film scoring, major artist tours and premier music and recording schools have relied on the model 801R system for its stunning sonic performance and rock-solid reliability for years.

So the newly designed **m802** system can now be controlled directly from **Digidesign® ProTools|HD®** systems, compatible control surfaces and many other MIDI devices. **DPA 130V** microphone users will be thrilled to know they can order a 130V option on a channel pair basis.

We have incorporated an updated signal path which is now fully balanced from start to finish, resulting in a noticeable dynamic range improvement and the output current has been increased so that very long audio cable runs can be achieved without signal loss. Plus, we have included a provision for a high definition 24-bit/192 kHz converter card in the future.

The new stainless steel chassis comes from our **m** series monitor controllers and we have completely redesigned the Remote Control Unit to provide greatly improved ergonomics and system control.

Whatever your application, we invite you to discover the remarkable sonic performance and functionality of our new **m802**.

We're confident that it will help you make the finest recordings of your career.

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preamplifier

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