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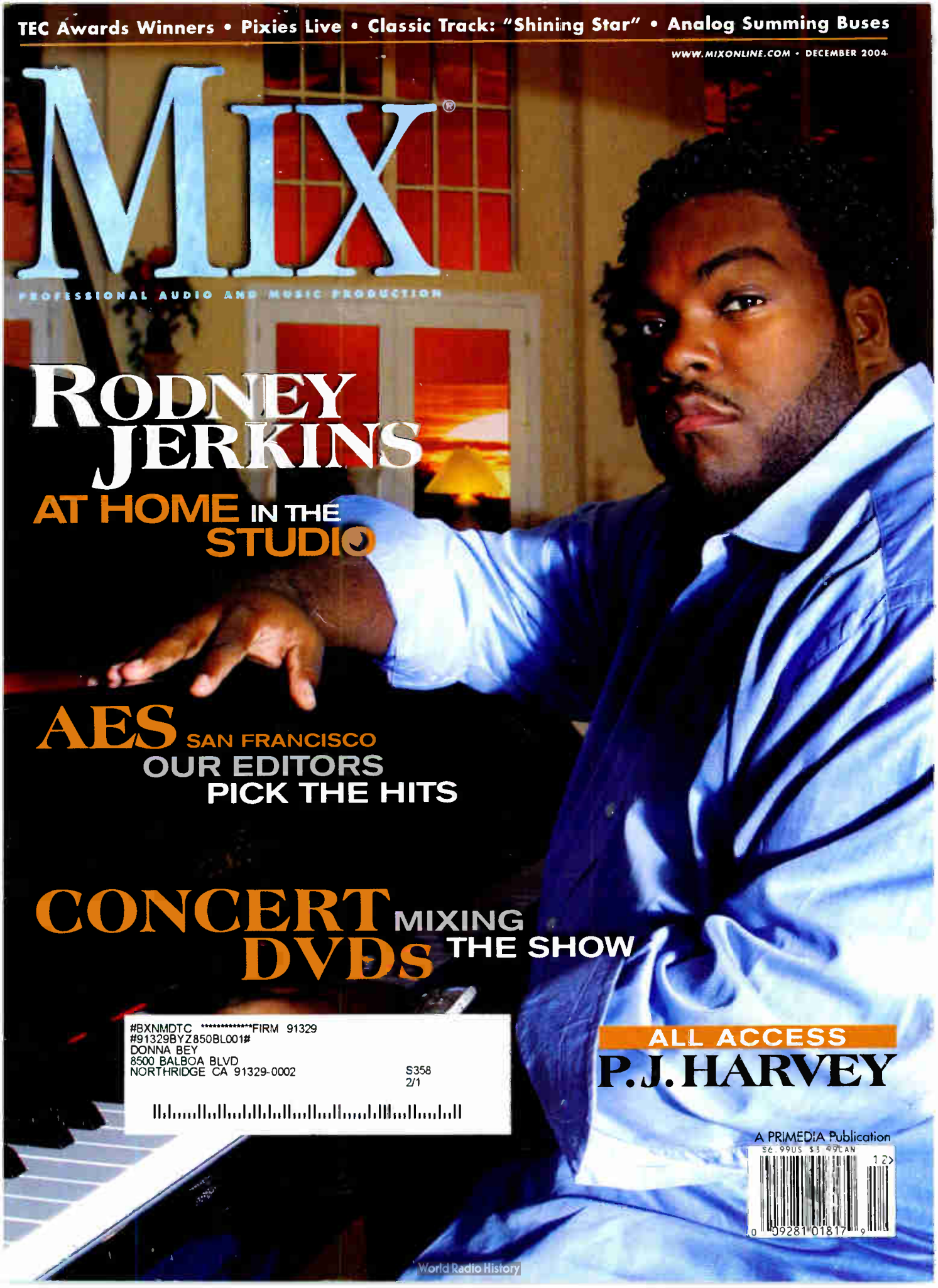

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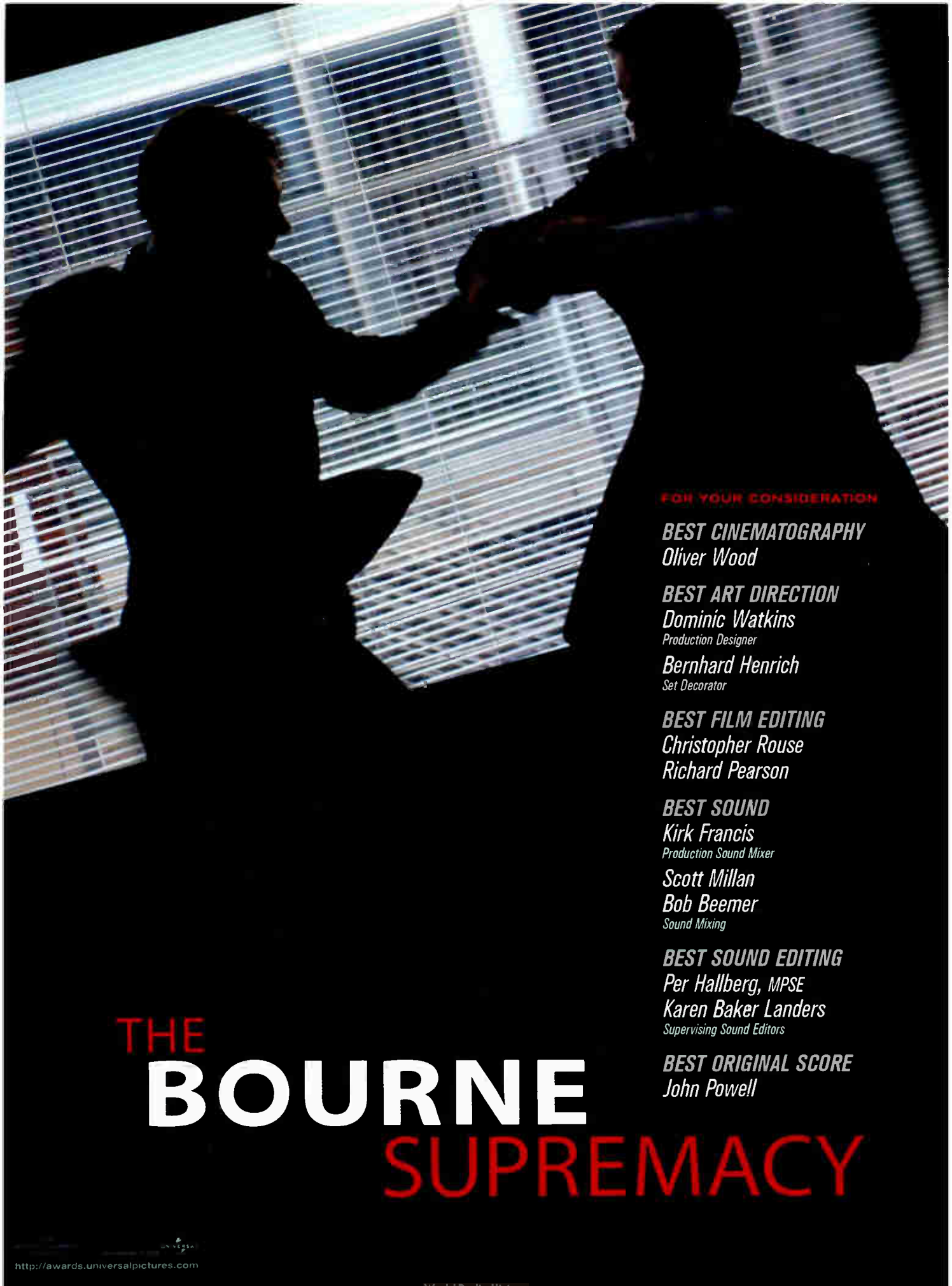

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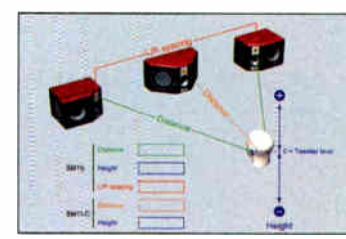

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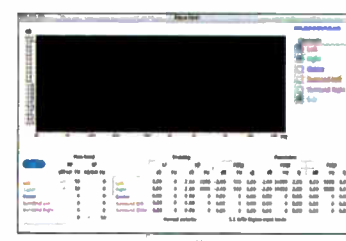

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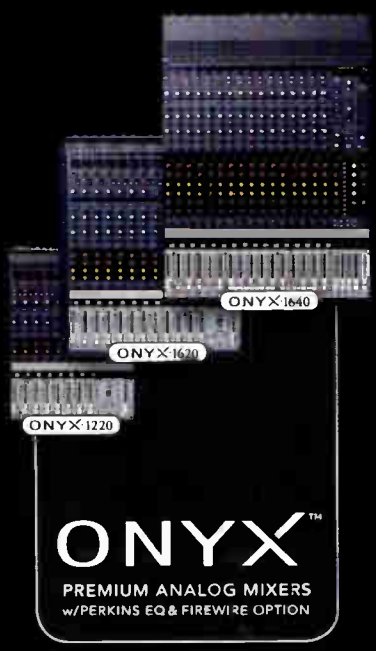

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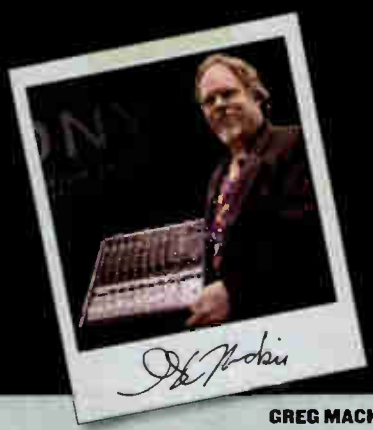

GREG MACKIE, *our founding father, shows off a killer shirt and an Onyx 1220.*

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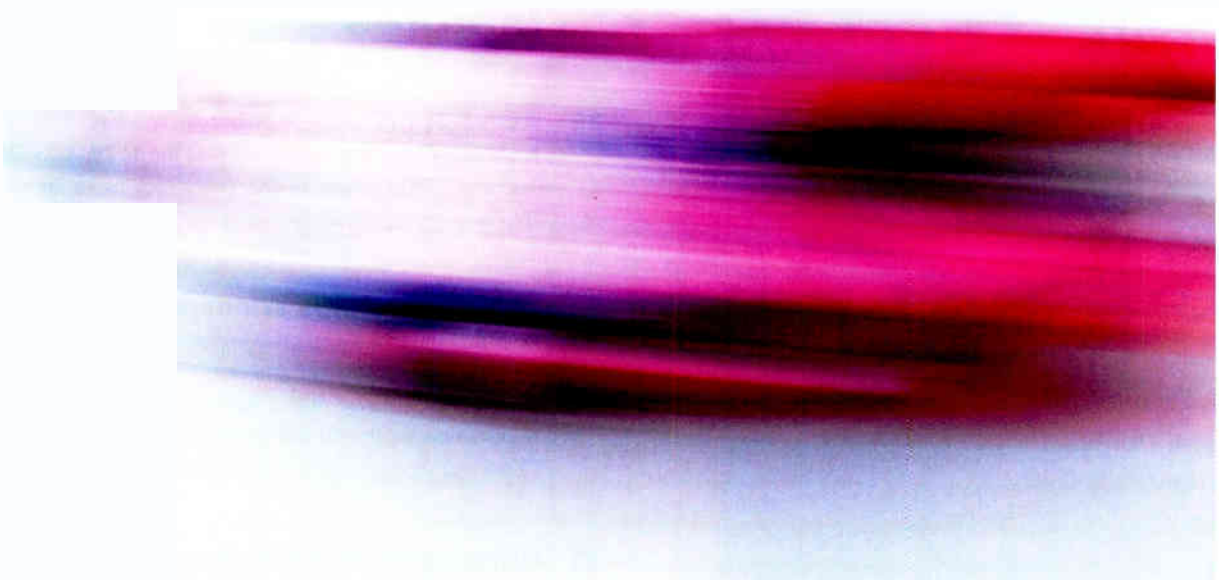

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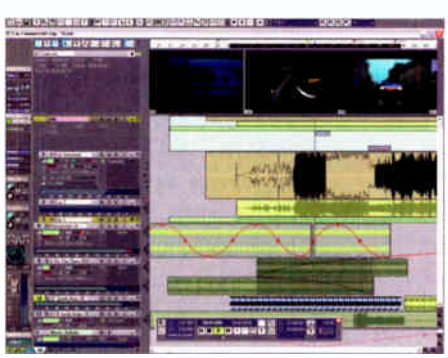

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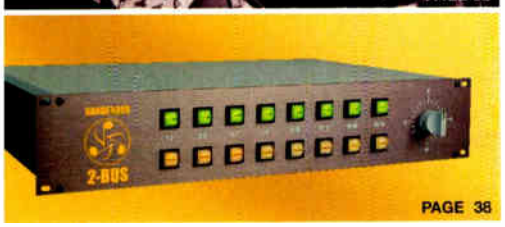

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features

26 AES Report
There was much to see–and hear–at the 117th AES Convention in San Francisco. The *Mix* editors bring back their picks. Turn to page 62 for Mark Frink's sound reinforcement faves.

30 2004 TEC Awards Winners
Janet Jackson made a surprise appearance to present the Les Paul Award to her "two dads," Jimmy Jam and Terry Lewis. George Lucas was presented with the Hall of Fame Award, as was superproducer Elliot Scheiner. And Yamaha headed the list of big winners with two in the console categories. Check out the rest of the winners from the 20th Annual TEC Awards.

32 Bringing the Show Home–The Story Behind the Mixes on Four Music DVDs
Mixing to 5.1? Is that center channel really necessary? Where do you put the bass information? How do you wade through so much material for just one release? *Mix* steps into the house with four engineers to find out their mixing process on recently released music DVDs.

38 Strictly Summing–Systems That Take Your Mix "Out of the Box"
Now that digital audio workstations have taken over the studio, producers and engineers are rethinking summing–combining and amplifying individual signals on a mix bus. Whether you mix in or out of "the box," small, stand-alone summing-only boxes (analog or digital) have hit the market.

44 Mix Interview: Rodney Jerkins
Destiny's Child. Whitney Houston. Brian McKnight. Britney Spears. *NSYNC. Will Smith. His own studio. His own record label. And he's only 27. Rodney Jerkins has been coaxing Number One albums out of today's hottest artists. *Mix* sits down with one of the industry's current "It" producer/musician/songwriters.

On the Cover: Rodney Jerkins, producer, songwriter and now label head, has built a state-of-the-art studio in his Florida home, but as he maintains, it all starts with a song. And it most often starts at the piano. **Photo:** Roger Chuyan Photography. **Inset:** Steve Jennings.

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China: A Study in Contrasts

During my brief 51 years on this planet (including 23 years with *Mix*), I've traveled to dozens of countries on six continents and thought I'd seen it all, but my first trip to China was filled with surprises. Just a week before AES, I spent a week in China visiting the new Alto Audio/Sekaku Electron factory facilities in Guandong Province and the Prolight + Sound/Music China tradeshow in Shanghai.

After a mere 13-and-a-half-hour (four-movie) plane ride, I was in Hong Kong. I cleared customs, passed through thermal imaging scanners that screened for elevated body temperature symptoms for the SARS virus (still a problem in China) and transferred to a mini-bus for the trip to the interior city of Donguan City, home of the Alto factory.

Alto Audio is truly an international effort, a partnership of noted Italian designer Gian Pietro Staffa and Taiwan-based electronics giant Sekaku. The "Alto Days" event was not simply to show new products (such as the innovative "Orient Express" portable P.A. system debuting at next month's NAMM show), but presented product concepts and sought feedback from its distributors for gear that will appeal to different markets. I've been to similar events elsewhere, but there's a certain irony when you're in China and hear an Italian man speaking to a supplier from Liechtenstein—in English! The world gets smaller every day.

Alto also showed off its new 100,000-square-foot factory, which handles *everything*—metalwork, plastic molding, painting, assembly, packaging, printing and QC/testing. Besides Sekaku and Alto, the factory was also doing OEM work for Furman, Ashdown, Tapco, LEM, Show, Samson, Radio Shack and others. There are some nasty factory environments in China, but Sekaku is not one of them. In fact, its employees seemed well-treated and can "work up through the ranks" to supervisory positions.

Like many Chinese factories, the Sekaku plant provides free dormitory living for about 80 percent of its workers. On the outside, this may seem like a "company store" arrangement, but it actually allows a manufacturer to attract workers from distant areas, who can relocate to a new job without having to suddenly pony up the first/last month's rent for an apartment.

Moving on to Shanghai, the three-year-old Music China/Pro Light + Sound show (put on by the folks at Musikmesse) filled three halls with hundreds of exhibitors showing about everything you'd see at NAMM, alongside acres of traditional Chinese instruments. However, even with plenty of high-tech on display, there was another surprise: Not a single software vendor was to be found.

Despite the Chinese government's efforts to reverse the trend, piracy remains a major issue. It's sort of a wink-wink, nudge-nudge arrangement: Nearly every city in China has a "copy center"—a busy marketplace where you can buy fakes: Rolex watches, Gucci handbags and recent DVDs or Windows XP for a buck or two. The sad part was that the copy centers' main appeal seems to be foreign visitors, whose countries are hurt most by this illegal commerce. With plenty of willing buyers, both sides are equally guilty, but the Chinese could certainly step up their efforts into halting this trade. Respecting intellectual property laws would be a major step toward moving China ahead in the world community.

George Petersen
Editorial Director

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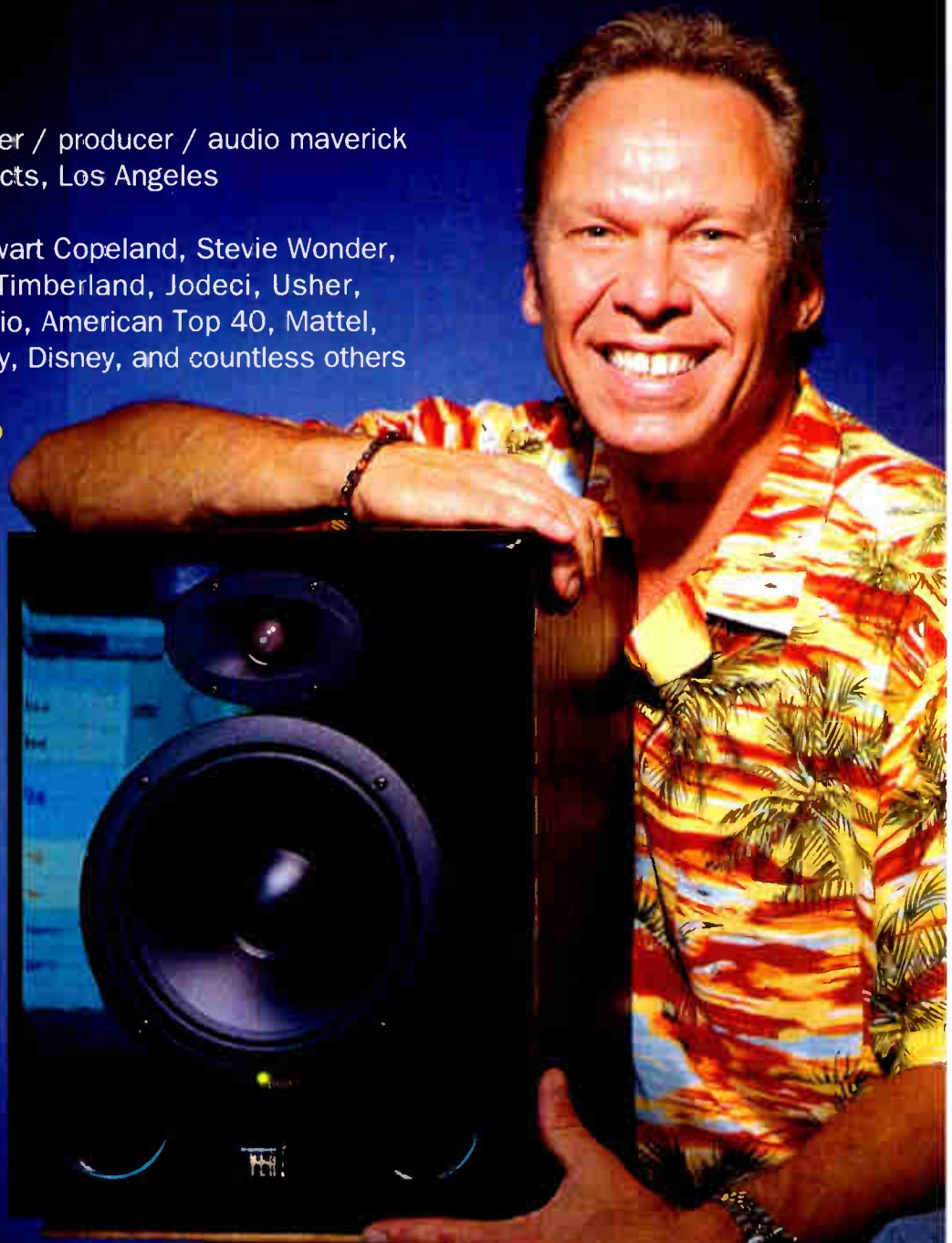
"I Switched"



Who: Gerhard P. Joost II

Occupation: Engineer / mixer / producer / audio maverick
Chief Engineer, Groove Addicts, Los Angeles

Clients: Danny Elfman, Stewart Copeland, Stevie Wonder, Teddy Riley, Missy Elliott, Timberland, Jodeci, Usher, Salt 'N Pepa, Silk, BBC Radio, American Top 40, Mattel, McDonalds, Budweiser, Sony, Disney, and countless others

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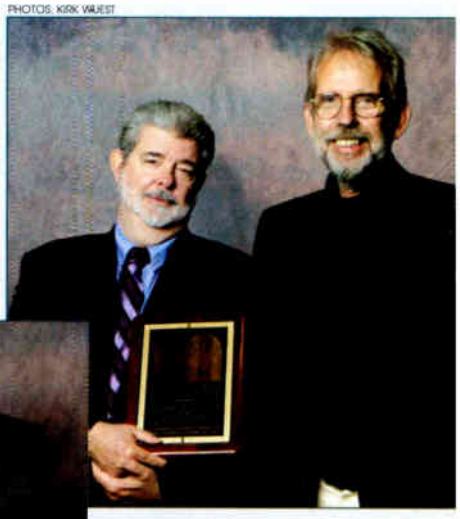
TEC AWARDS 2004

San Francisco Marriott Hotel, Yerba Buena Ballroom, October 30, 2004, 8:30 p.m. sharp—Audiophiles gathered to see the industry's finest professionals and products be awarded for their contributions to advancing the science and art of music production. In addition to the 16 Technical Achievement and seven Creative Achievement Awards handed out, attendees were treated to special appearances by Janet Jackson honoring this year's Les Paul Award recipients Jimmy Jam and Terry Lewis, and Walter Murch inducting George Lucas into the Hall of Fame. Longtime and much beloved engineer Elliot Scheiner joins Lucas in the Hall of Fame. Check out page 30 for an in-depth look at this year's winners.

PHOTO: ERIC SLOMANSON

L-R: Terry Lewis, Janet Jackson and Jimmy Jam

PHOTOS: KIRK WAJEST



Top: George Lucas and Walter Murch
Left: Elliot Scheiner and Steely Dan's Walter Becker

DEMAND FOR MASTERING SHOWS IN NEW ROOMS

TRUTONE, NEW YORK CITY

Co-developed by John Storyk of Walters-Storyk Design Group, Trutone's mastering studio on West 44th Street in New York City—the original home of Record Plant Studios—battled high tides during the construction phase. Almost immediately after completing Studio B, a flood wiped it out. The undamaged Studio A was kept busy during B's extensive rebuild. Now that both suites are online, the complex is flooded with clients ranging from Def Jam, Island Records and Rocafella to Latin artists and dance DJs.

Trutone co-founders Adrianna (background) and Carl Rowatti in Studio B

Each suite features a Neumann VMS-70 lathe retrofitted with a Zuja disc computer and Technics quartz-controlled turntable motor, as well as modified Neumann SP-77 and SP-78 consoles. To create CD masters, the studio employs Sonic Studio's premastering system. Monitors are KEF Reference 4s in A and KEF Reference 207s in B. Near-fields are Yamaha NS-10s and Tannoy 6.5s, with power supplied by Bryston, Ramsa and Hafler amps.

Trutone maintains a Hackensack, N.J., pressing plant and Music on the Run, a store-front operation that provides same-day CD, DVD and VHS dupes.

PAUL STUBBLEBINE MASTERING & DVD, SAN FRANCISCO

San Francisco-based Paul Stubblebine Mastering & DVD (PSM, www.paulstubblebine.com) opened two purpose-built 5.1 rooms, which will be manned by engineer/owner Paul Stubblebine (pictured, below), Michael Romanowski (whom Stubblebine has known since his Rocket Labs days) and John Greenham (who has worked with Stubblebine for 12 years). The rooms are centered on two Sonic HDSPs, SADiE PCM-8 and Sonic USP workstations; other gear includes Alon Wolff-designed speakers, Pacific Microsonics A/D converters and outboard gear from E.A.R., Z-Systems, Weiss and TC Electronic.

PHOTO: PHIL BROWN

Stubblebine said that he didn't have enough customer demand when he started the process, but because he saw a future growth in 5.1 material for SACD and DVD-A, he gave the green light to build the second room. Both studios are being booked by a number of up-and-coming and established local bands, as well as national acts in a wide variety of genres. "Consumers are paying more attention to surround than they did before," Stubblebine said. "What will make a difference [to consumers embracing the format] will be cars and a universal player; people will experience surround in their cars first. Surround will not displace stereo or mono—they will work in parallel—but the demand for 5.1 will grow."

World Radio History

COMPILED BY SARAH BENZULY

SAX CREATES OWN WALL OF SOUND

Doug Sax, owner of The Mastering Lab in L.A., has opened a new two-room studio facility featuring a customized Acoustic Technology Company ATC SCM150A 5.1-channel monitor system. Located in Ojai, Calif., 75 miles northwest of L.A., the facility offers a unique design concept: There's no console between the listener and the speakers—including the rears. "If you have anything between you and the speaker, it's going to cause acoustic problems," Sax explained. "You have to listen longer in surround. Psychologically, it really helps you concentrate as you're not looking at knobs and meters and all the stuff that might take you out of just listening."

The monitoring system, comprising five ATC SCM150A loudspeakers and an ATC 15-inch subwoofer, is installed in a unique front wall. "The front three speakers are soffit-mounted," Sax said, "but the soffit is not the full height of the room. We came up with this half-wall. Only a handful of clients have been up so far—I'm easing into it—and their response has been extremely positive."

DUBLINERS GET BAKED IN L.A.

Ireland-based The Dubliners visited L.A.-based Cups 'N Strings to restore their multitrack analog masters (recorded between 1975 and 1983 at various studios in London and Dublin) and archive to 96k/24-bit Pro Tools|HD for an upcoming commemorative release on Baycourt Records. Fiachra Sheahan, son of Dubliner John Sheahan, is supervising the project, which will include both CD and DVD releases. Simon Factor of Dublin's Moving Media flew to the studio with 10 multitrack masters, some of which included unreleased music.

PHOTO: DAVID GOGGIN

Simon Factor (left) and Bruce Maddocks

"We tried to work on the tapes in Dublin," Factor said, "but we couldn't find one studio that could handle the range of formats and associated technologies. For sonic consistency in the restoration and transfer, we felt it was wise to call on Bruce Maddocks [owner/chief engineer at Cups 'N Strings]. Not only did he have the equipment and experience for the delicate baking of the tapes, he also had all of the different head stacks and noise-reduction gear."

TRUE REMOTE RECORDING —VIA THE WEB

Longtime Dallas-based drummer Ron Kaplan (pictured) recently found himself on the "other side of the glass," when longtime friend, Chicago-based songwriter Dick Eastman, asked Kaplan to lay down and record drum tracks on a new record for his project band, The Cleavers (which also includes guitarist Bobby Diamond and keyboardist Mike Kroell).

"We came up with the idea that I would buy some gear and record my drum parts," Kaplan said. "Dick and Bobby would send me the guitar and vocal tracks. I'd record my drums and send those tracks back to them."

Step 1: Kaplan purchased a set of electronic drums and a Yamaha AW4416 DAW as Eastman and Kroell both owned an AW4416 and "liked the fact that you could produce master CDs, share the material with other AW units and transfer all mixes at once," Kaplan said. **Step 2:** The bandmates used iTunes or MusicMatch software to rip the music from the master CDs, allowing them to send digital copies of their music to each other for instant feedback. "Mike, Dave, Bobby and Dick would work on parts and send me an automix, where everything had been submixed down to a drumless stereo track," Kaplan explained. "I'd lay down the drums directly into the song on eight tracks without having to submix them or bounce tracks." Now that the band had developed a working routine, what about Kaplan's engineering credibility?

Kaplan found much of his help on the Yahoo AW4416 users group. "I got a real education from real users," Kaplan enthused. "We also found our mastering engineer, Ronny Morris [owner of Digitak Mastering, Brunswick, Ga.], on there."

The Cleavers are hosting streaming audio samples of their CD, Television Mind, at www.allrightrecords.com.

World Radio History

NOTES FROM THE NET

ARTIST MAITREYA TRUSTS WEED

Sananda Maitreya's *Angles & Vampires* features his own version of TrustyFiles P2P file-sharing software—distributing Weed-format files over the major P2P networks, which can be accessed at http://p2pfiles.com/sw/Sananda/SanandaTF.exe. [For additional information on Weed, see "Notes From the Net" in the January 2004 issue of *Mix*.]

"It's not enough to just create protected files and say, 'Here's my music, please download,'" said Maitreya. "RazorPop's TrustyFiles software is perfect for me to ask my fans to share my music and continue to stay close to them."

According to Marc Freedman, founder and CEO of RazorPop, "Fifty percent of Internet users share music and other files. If you're a major artist, shouldn't your fans and Web visitors be sharing files on software with your name and logo where you can directly sell your digital downloads, CDs, DVDs and other merchandise?"

ON THE MOVE

Who: David Hetrick, KRK director of worldwide sales
Main Responsibilities: manage domestic rep firms, international distributors and numerous temperamental international sales managers
Previous lives:

- 1997-2004, VP of sales and other positions at Event Electronics
- 1991-1997, owner of BEAGLEstudios (Santa Barbara, Calif.)

The best studio gig I've had was: A week with John Pattitucci tracking an epic new age Ukranian gospel album—that guy can play.
The last great movie I saw was: *Garden State*.
Currently in my CD changer: Dog Hair, but my iPod has been playing a lot of Jeff Buckley, Jellyfish, Nate Birkey and Elbow lately.
When I'm not in the office, you'll often find me... On the road seeking out the best barbecue, peanut butter ice cream and vodka. In that order.

YAMAHA MERGES DEPARTMENTS

Yamaha's new Music Production department—which resides in its Pro Audio & Combo (PAC) division—will align all of the company's home recording and digital studio production products into a single department. It includes synthesizers (Motif ES and S Series), AW Series DAWs, studio monitors, digital mixers (01X, 01V96 and 02R96) and all mLAN and USB computer music products and software. The Professional Audio department will concentrate on sound reinforcement analog mixers, speakers and amplifiers, while the Commercial Audio Systems division continues to operate separately.

Athan Billias has been appointed director of technology products and will oversee the new department as marketing manager. He is supported by product managers Avery Burdette and George Hamilton. Wayne Hrabak heads the Pro Audio department, with support from product manager John Schauer.

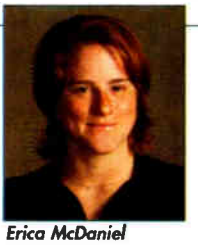
ENTRAVISION CONNECTS WITH NEVE

Neutrik connectors on Entravision's master control satellite-uplink audio distribution amplifier

Creative Studio Solutions, a studio design and engineering firm, was contracted by Entravision (L.A.) to conduct a massive install of its 27 networked studios. Neutrik connectors align the nine on-air studios, nine production studios and nine imaging stations. "This installation called for a huge system design," Andrew Rosenberg, CEO/chief engineer at CSS, explained. "It is a router-based system with audio in every studio going through the router instead of through the mixing board. Accessibility in all 27 studios was imperative, and Neutrik connectors definitely helped facilitate matters."

CSS pre-built all the wiring harnesses at its facility in Wheat Ridge, Colo., using more than 2,500 pieces each of Neutrik's ID-type XLR cable connectors, NC3FEZY-B and NC3MEZY-B, and more than 100 each of the P Series-type XLR solder cup receptacles, NC3MP and NC3FP-1.

INDUSTRY NEWS



Erica McDaniel

Rupert Neve Designs (Wimberley, TX) has added **Drake Williams** to its technical design team and **Sandra Kuhns** to the management team...Post facility **Threshold Sound + Vision** (Los Angeles) hired **Adam Ohl** as director of operations...Heading up **Phonic's** Tampa operations, **Scott Emmerman** is the company's new executive VP...With more than two decades of sales management experience, **Michael Franzi** is **THX's** (San Rafael, CA) VP of sales...Responsible for the Southeast region of the U.S., **Bill Poling** is **Middle Atlantic Products'** (Dallas) new director of sales...**Universal Audio** (Santa Cruz, CA) appointed **Erica McDaniel** as director of sales...**Astatic** (Mentor, OH) named **Kevin Madden** national sales manager and **Gary Dixon** internal sales manager...Inventor of the FFT de-convolution method of testing for ringing in mics (published by the AES in 1998), **Kelly E. Statham** is **Omnitronics'** (Mentor, OH) new director of engineering...Responsible for 53 **Guitar Center** (Agoura Hills, CA) stores, **Peter Schuelzky** is the company's new senior VP regional manager...**Derrick Davis** is **Behringer's** (Bothell, WA) new corporate communications manager. In other communication news, **Garrett Soden** is director of pro audio marketing and communications for **Waves** (Knoxville, TN), while **Paul de Benedictis** (San Francisco) is now offering press and artist relations services for Spectrasonics, Paul Stubblebine Mastering and GarageBand.com.

CORRECTIONS

AUDIO *EDUCATION* SOCIETY?

Not exactly, but that's what *Mix* inadvertently mistitled the Audio Engineering Society in Theresa Leonard's November essay on, ironically, the importance of audio education. As AES president, Leonard is fully aware of the meaning of the abbreviation. *Mix* regrets the error. For more information about the AES, visit www.aes.org.

Send Your "Current" News to Sarah Benzuly at sbenzuly@primediabusiness.com.

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BY STEPHEN ST.CROIX

Dumb Ann Dummer

More DOA (Dumbing of America)

An acquaintance just took delivery of an '05 Mercedes SL55 AMG, a car that has absolutely no reason to exist. It's targeted at rich guys that like first-class luxury but never outgrew their second-class V8 muscle car lust. Hidden under the rather unassuming and totally German black hood is a 500 HP V8 that is most uncharacteristically force-fed with a clutched belt-driven Roots-type supercharger. Basically, it's Henry Kissinger meets Mad Max.

It is without a doubt the ultimate Q-ship. Treat it nice and it's Teflon-smooth—a quiet, absurdly opulent showcase for German technologies. But mash the throttle and all hell breaks loose with the cry of a Corvette crossbred with a Chris-Craft. Tires smoke and 60 mph shows up in just slightly over four seconds. (Hand-made, some are faster than others.)

The entire roof is made of black glass. And if looking through that doesn't do it for you, one button converts this coupe into a convertible in 16 seconds. It is both amazing and somewhat disturbing to watch—kind of like those Transformer kid's toys, but real.

There is more technology in this car than in any commercial land vehicle I have ever seen.

A front-mounted radar watches the cars in front of you and automatically adjusts your cruise-controlled 85 mph so you don't crawl up the tailpipe of the 55 mph BMW in front of you. But as soon as he is out of the way, it instantly shoots you back up to 85. This is important if you are otherwise occupied watching a DVD on the dash-mounted 16:9 display. This very expensive radar option didn't make sense to me until I realized that it just might be the perfect way to make illegal radar gun jamming legal. Mmmm.

Way too many engine, body and transmission computers, a plethora of accelerometers, hyperfast electronic adaptive shocks, Pirelli P-Zero tires and insane horsepower coupled with exotic throttle and even brake-by-wire systems make this two-ton-plus (SL stands for Sport Light, by the way—German humor) sports car act and feel like half its weight. This is not sarcasm. It actually pulls this off. The car is built like a tank, but its computers lie to you and make it *feel* like an aluminum muscle-car. The absurdity of that speaks for itself.

It recognizes its owner and opens its locked doors for him. No keys to get in, no keys to drive; they just have to be somewhere on your person.

If you happen to crash, the car automatically calls the cops and a bunch of other people. We weren't too sure who, though. Probably your accountant.

You shift with little buttons on the wheel. The seats are heated *and* air-conditioned, and they massage you. No cheesy magic fingers either—it's the deep, slow rolling good stuff. The headlights have motors that keep them level even if you go up and down hills. (This is important as it has four blinding HID arc headlights, each capable of spot-welding any two cars in front of you together if the traffic light stays red for more than 20 seconds.) The huge transflective navigation display laughs at direct sunlight. It actually gets brighter and better-looking in stronger light. The woman inside the nav politely fades your MP3s down a bit before telling you how lost you are. But it's this nav that sparked this column...

SPEED AND STUPIDITY—THE PERFECT MATCH

Every stupidly fast car that I have ever built (and there have been many) has had *lots* of gauges. Besides the obligatory tach, speedo and other oops-too-late dials and lights, I normally make custom boost gauges (I have run 21 PSI in my last three cars), flame front gauges so I can see what's thinking about melting and alcohol injection-flow gauges, along with intake air, turbo outlet, intercooler and nitrous bottle temperature displays, and more. Yeah, I know. There's medication for that.

> The features are still there, but user control is disappearing. We used to be able to put the functions *we* used the most on the front page on a lot of these items. Now more and more are hard-wired with the functions they think we want at the top and no way to change them.

Basically I do this because I don't really know what I am doing, and I hope to see my mistakes indicated numerically rather than as pistons flying off into the sunset as I slide off the road on my own oil.

But this SL55 has no motor-head gauges at all. None. A tach and speedo, gas and water temp...that's it. 500 supercharged ponies and absolutely no way to see what's going on under the hood. An incomprehensibly complex machine made simple by the elimination of any and all scary user interface. The New Way. Elimination of fear by elimination of information.

But you ain't heard nothin' yet. No gauges are one

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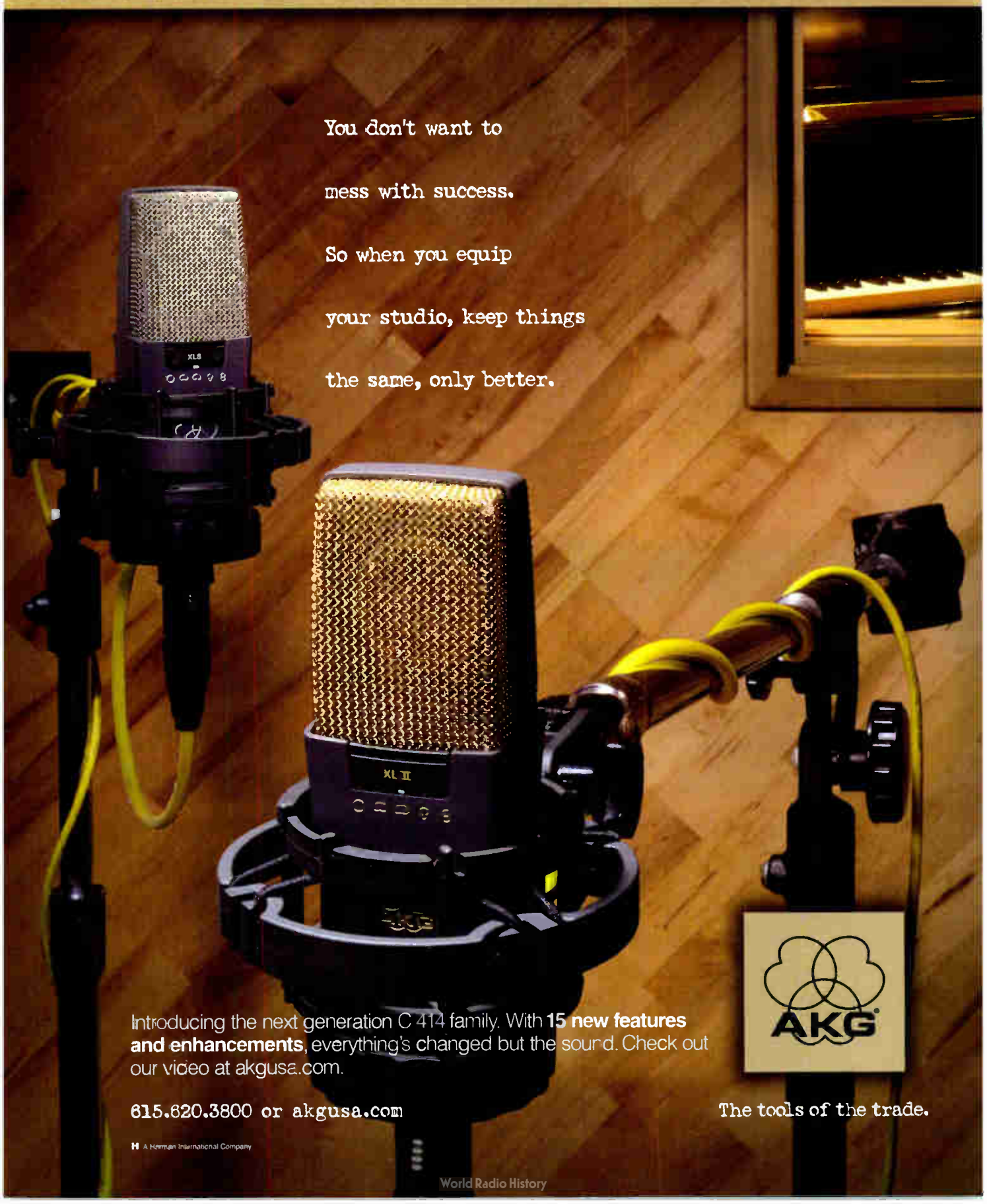

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thing, but its nav has gone too far. I present to you the ultimate in misguided absurdity: In the interest of keeping a potentially complex interface simple, Mercedes has developed a navigation system that doesn't allow you to enter your destination. Literally!

Following the wisdom that the quietest preamp is the one with the shorted output jacks, this nav has eliminated all angst by asking you to learn nothing and giving nothing in return. You don't have to learn how to use it, but you can't go anywhere.

You can't find the nearest Radio Shack because you can't type in the words "Radio Shack." Actually, you can't type in *any* destination at all. To go somewhere, you must choose a country from a list (yes, a *country*), then a *county*, then a type of thing from another list. And all of these lists contain items that Mercedes decided you want and nothing more. They are of course *un-modifiable*. This seems to work okay for banks, restaurants, gas stations and Mercedes dealers (as long as you already know *exactly* what county the place you are looking for is in), but it sure as hell didn't work for Radio Shack.

Yup, you can't get there from here. You also can't get to Sharper Image, the Apple store, 7-11, Ira's House of Exotic Woods or Washington Music Center.

And private homes? Fuggettaboutit. There is absolutely no way to enter an actual address. There isn't even a data field to enter a house number. You want to find 2526 Eastern Ave.? You do the whole country and exact county thing, name the street and you are rewarded with a list of house numbers—460-900, 901-1300, 1301-1600, etc. You select a range and that's it—the system will take you to within 20 to 200 houses (or miles) and abandon you in your $145,000 car. Nice. Maybe it's more humor?

Yes, ladies and gentlemen, to keep operation simple, the system is crippled to the point of rendering inoperative about 90 percent of what last year's Mercedes nav could do. Maybe the designer had a Yamaha synth once and decided that he owed it to his users to avoid the endless labyrinth of pages and sub-pages.

IT WON'T GET YOU HOME, BUT I WILL, FINALLY

Anyway, arguing about this infuriating device made me realize that I'm seeing this exact attitude more and more in some of our newer audio gear. This "screw you if you can't take a joke" approach to simplification of powerful systems is alarming to say the least. What good is power *to* the people if the power to control it is taken *from* the people?

A few months ago, I talked about the fact that MI and a lot of prosumer gear was changing—audio quality was being sacrificed for absurd feature sets. All this because the market was *asking* for it. This is pretty much the standard now—money for features, features for free. You gets 'em if you wants 'em or not.

And now the next twist in the road looms just ahead, predictable though a bit strange. It looks like the manufacturers perceive a certain feature overload backlash and are beginning to take steps to "fix" this. In everything from cars to keyboards, features are being dumbed down to the point of offensive absurdity.

The features are still there, but user control is disappearing. First we lost user interface configurations. Cars with command displays, TVs, cell phones and synths used to let you set up what you see and control. We used to be able to put the functions *we* used

—CONTINUED ON PAGE 120

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World Radio History

BY PAUL D. LEHRMAN

Virtual Stuff

Storage in the Post-Tape Age

One of comedian George Carlin's most incisive routines is about stuff: How do we get it? What do we do with it? How do we keep it safe? Where the heck do we put it all? If we're involved in audio recording or production in any way—and nowadays, with every live concert, church service, news broadcast and backporch jam session being archived somewhere, this means almost all of us—figuring out where to put our "stuff" is a pretty serious issue.

What makes a medium useful for backup and storage? It needs to be reliable in the short and long term. When you pick the thing up to play it—next week or in 15 years—it has to be able to give you back what you gave it. It has to be viable in the long term. The hardware to use it has to be functional and available as long as you need to access the material. It has to be portable. You need to be able to open the session file in different rooms in your facility and, in many cases, in another studio. It has to be fast. You need at least real time, if not faster, so that you don't spend all of your free hours between sessions making backups. Lastly, it has to be reasonably priced. Clients today who are used to paying $10 for an ADAT tape will not be happy with being asked to cough up $150 for some fancy disk-based storage medium.

Once upon a time, when you talked about audio storage, analog tape was the only choice. There were different form factors, from ¼-inch mono to 2-inch 32-track, but everyone pretty much stuck to the same formats. A multitrack tape recorded in one studio could be put on a shelf somewhere, and years later, even if the studio was only a distant memory, it could be played on someone else's deck without much fuss. And it didn't matter if it was a Studer, Otari, Ampex, 3M or MCI/Sony. Tape was a self-archiving medium; the master was the backup.

When the audio world moved into the digital era, things radically changed. Formats came and went with astonishing rapidity. I assume Telarc Records transferred all of its early recordings of orchestras, wind bands and organs before the last Soundstream digital recorder went kaput. Ditto for anyone who owned a 3M, Tascam or Mitsubishi multitrack. All great machines then, all fossils today.

My first digital recordings also sounded pretty good, and at the time I used what seemed to me a very robust, albeit cheap, format: Sony PCM-F1–encoded Betamax video tapes. By the end of the '80s, though, they were pretty much unplayable. I can still play back some of my VHS digital audio tapes if I can find someone with an old F1-format adapter, but the last time I tried to make a digital transfer of those tapes, something in the coding created nothing but hash at the digital outputs and I had to dub them using the analog signal path. Some of my VHS audio tapes won't play at all: I made them with a 14-bit ostensibly F1-compatible Toshiba video deck, but no F1 converter can make sense of them. The deck itself, which was terrific when it worked, died about eight years ago and the parts to repair it are long since out of circulation.

DAT, ADAT and DA-88 were at least popular enough to build up critical masses of users so that those machines will probably be around for a while longer. And they have the distinct advantage over analog tapes in that you don't copy them, you clone them: Put two machines together and let them run.

> Tape formats have become largely irrelevant for new work since hard disk systems have taken over the market. How do you make sure that the medium you are recording on will be around the next time you want to access that material?

But tape formats have become largely irrelevant for new work since hard disk systems, with their advantages of ever-expanding capacity and unlimited flexibility, have taken over the market. Those advantages, however, are in some ways negated by this problem of stuff: How do you make sure that the medium you are recording on will be around the next time you want to access that material?

Despite free-falling prices for SCSI and FireWire-based hard disks, which by now let you store every single sound and music element for a major motion picture on something that costs $69, they are poor choices for archival storage. Who among us has not suffered some kind of catastrophic disk failure at some point? Unlike tape, disks don't deteriorate with any kind of grace or subtlety.

Imagine digging out a disk from a major-label artist's session from five years ago for a *Greatest Hits* and discovering it has a stiction problem: The read-write heads are stuck to the disk platter because of humidity or dust so it can't turn. You can either bang the thing on a table (which sometimes works, but sometimes ends up breaking the platter and it's not a good thing to do in front of a client) or you can send it to a data-rescue service, where they will take it apart with microscopic tweezers in an ISO-3 clean room while you chew your nails for a week and gird yourself to write a check for upward of $1,000.

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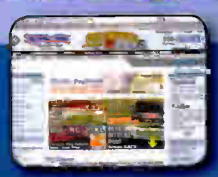

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Some manufacturers have tried to deal with the storage issue by incorporating removable drive bays in their multitrack hard disk systems. Mackie's Media 90, for its HDR 24/96, boasts 90 minutes of 24-track, 24-bit recording in each unit. You can use it to back up the internal drive after a session and stick it on a shelf. It's fast and convenient, but it's expensive ($200 for a 20GB drive is a lot of money these days), it's still a hard drive with all of technology's inherent issues and what happens if you decide you don't want to use Mackie digital recorders in a few years and/or they decide to get out of that market?

Tascam is also using removable drives as an option for its MX-2424 recorder, but the system uses a nonproprietary format that relies on Data Express Storcase DE100i carriers, which are well-supported in other parts of the computing world. Each carrier accepts a half-height drive, enclosing it in a steel box. The box is inserted into a frame that occupies a standard full-height drive bay inside the recorder. According to a product specialist at Tascam, you can pop your own half-height SCSI or ATA drive into the carrier so, theoretically, you can keep separate disks for every session or client. But in fact, getting the drives in and out of the carrier is not trivial, and Tascam says, "If you want to move quickly, you'll need more than one carrier." The carriers cost around $100 each, which effectively doubles the cost of the storage. In addition, the company says that you shouldn't load the drives up with more than 72 GB of data. And, it's still a hard drive.

Recently, however, a couple of intriguing new technologies have been announced that might just solve the problem of finding a good place to keep your stuff. Optical storage is a far more reliable medium than standard hard disks: Hard to kill, lasts for years (if you don't leave it on the dashboard of a hot car) and the medium and the drive are separate entities so if the drive fails, you just find another one. It's also dirt-cheap, even if you use the non-rewritable versions and throw away the previous disk each time you back up your data.

If someone could come up with a way of squeezing more data onto an optical disk and speeding up the read/write time, then maybe we'd have something.

But CDs are too small and too slow for serious multitrack storage. When you deal with 24-bit, 96k recordings, DVDs aren't much better. If someone could come up with a way of squeezing more data onto an optical disk and speeding up the read/write time, then maybe we'd have something.

Well, someone has, and it's blue. A consortium of some 11 electronics companies, including Pioneer, Samsung, TDK and Sony, have developed an optical disc system called Blu-ray Disc (BD) that uses a blue laser with a wavelength that is one-third shorter than the red lasers in CD and DVD drives. This means that the digital pits on the disc can be smaller and the throughput faster. Initially, the discs will have single layers and hold 25 GB, but there are plans to release dual-layer discs that hold 50 GB, and research is under way to develop quad-layer versions.

Like DVD, the format is being developed primarily for consumer markets as a way to distribute HDTV movies. The data rate is 4.5 MB/second, which is a little more than three

—CONTINUED ON PAGE 121

Everything you need to know about Variable Transconductance:

It sounds *really* sweet.

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MC

Intelligent Application Controller

Smart - Fast - Creative

The MC is a professional workstation controller designed to speed up and enhance operation with any application. With 56 programmable SmartSwitches that can send out keyboard command macros, 9 knobs for plug-in control, 4 faders for accessing track levels, touch screen, dual trackballs for the ultimate in precision, and a full surround monitoring system, the MC will change your approach to media production forever.

The MC surface detects the latest active application (the application that is up front) and resets all controls to match. And with high-speed EuCon aware applications, such as Steinberg's Nuendo, and Merging's Pyramix, the MC is able to provide unrivalled Ethernet control integration for the most demanding tasks. Check out a full on-line guided tour of the MC at www.euphonix.com for more details.

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AES San Francisco Can't Top This!

By the *Mix* Editors

It's hard to imagine a more enjoyable audio trade show than the 117th AES Convention, held in San Francisco from October 28-31, 2004. The weather cooperated, the parties were awesome, the food was unbelievable (leading one to actually believe that you can't find a bad meal in this town) and the extracurricular diversions of the Halloween weekend provided lasting memories for everyone. And the TEC Awards (see winners on page 30)—highlighted by appearances by George Lucas, Jimmy Jam and Terry Lewis, Janet Jackson, Elliot Scheiner and the Walters (Becker and Murch)—may have been the best ever. Meanwhile, the Moscone Convention Center rocked with a near-record 16,153 eager attendees and plenty of neat audio toys from 415 exhibitors to check out.

CONSOLES!

Consoles took center stage at AES. Clearly the most talked about product at the show, and certainly worthy of a turn on Capt. Picard's bridge, the Smart Console Elite 96 control surface from Smart AV (www.smartav.net) boasts a groundbreaking ergonomic design that offers control over a bevy of DAW features. The brainchild of Aussie designer Michael Stavrou, it currently works with systems from Pyramix/Merging, Emagic/Logic, Yamaha/DME 64N, Fairlight/QDC and Klotz Digital/Vadis. It's distributed in the U.S. by the ATI Group.

Euphonix MC Intelligent Applicotion Controller

Unveiled in concept form at last year's AES, the MC Intelligent Application Controller from Euphonix (www.euphonix.com) is a sophisticated worksurface for use with pro PC applications. The MC gives users high-speed control of not only EuCon-aware applications such as Nuendo and Pyramix, but also PC applications via keystroke commands programmed into the MC's LCD SmartSwitches. MC includes a 7.1 monitor section, dual trackballs, a keyboard, eight programmable knobs, four touch-sensitive moving faders—or optional twin joysticks—and 56 programmable LCD SmartSwitches, together with a small touchscreen for fast access to features.

Solid State Logic (www.solid-state-logic.com) now offers a Total Recall option for the AWS 900 analog workstation system. TR memorizes the position of analog pots and switches, allowing them to be reset later.

SPL's (www.spl-usa.com) $35,900 MMC2 mastering console puts the punch of its flagship MMC1 board into a compact rackmount unit offering source connection, track assignment, speaker management and master/monitor level setting. The discrete, all-analog console is based on SPL's unique 120-volt op amps for unprecedented dynamic range, headroom, bandwidth and audio purity.

Designed for the mid-market analog user, the Trident (www.oram.co.uk) Dream Series puts pro touches such as five auxes and individual meters reading the balanced direct outputs with Oram EQ. Pricing is from $10,995 (16 channels) to $28,995 (40 channels). Based on the popular Series 24, the new anniversary model Series 4T commemorates designer John Oram's 40th year in audio and is priced from $27,900 to $42,700 for a 48-channel version.

HARDWARE

Get more Plugzilla for less: Manifold Labs' (www.plugzilla.com) flagship stand-alone plug-in player now ships with eight channels of audio I/O and software enhancements (including Princeton Digital's 2016 Stereo Room plug-in) for a reduced price of $2,995. TC Electronic's (www.tcelectronic.com) PowerCore Compact ($995) is a lightweight, portable FireWire box packed with a dozen TC plug-ins (including reverbs, compressors, EQ, voice channel and guitar amp simulator), plus room for more. PowerCore packs a punch with two 150MHz Motorola DSPs and a 266MHz PowerPC, and is VST/AudioUnits-compatible.

Mackie's (www.mackie.com) Onyx 400F is a 10-channel, 192kHz FireWire interface with the company's new flagship Onyx mic preamps, and it offers onboard DSP matrix mix for latency-free headphone mixing independent of the DAW software. Features include a control room output pot, dual headphone outs, two instrument ins, word clock I/O, MIDI I/O, S/PDIF I/O, two FireWire ports and a software suite with Tracktion audio recording/MIDI production software and the Final Mix mastering toolkit. Retail: $899.99.

At Wave Distribution (www.wavedistribution.com), Paul Wolff showed his new audio venture: the Tonelux line of discrete rackmount gear, including a parametric EQ, remote-controlled discrete mic pre with DI,

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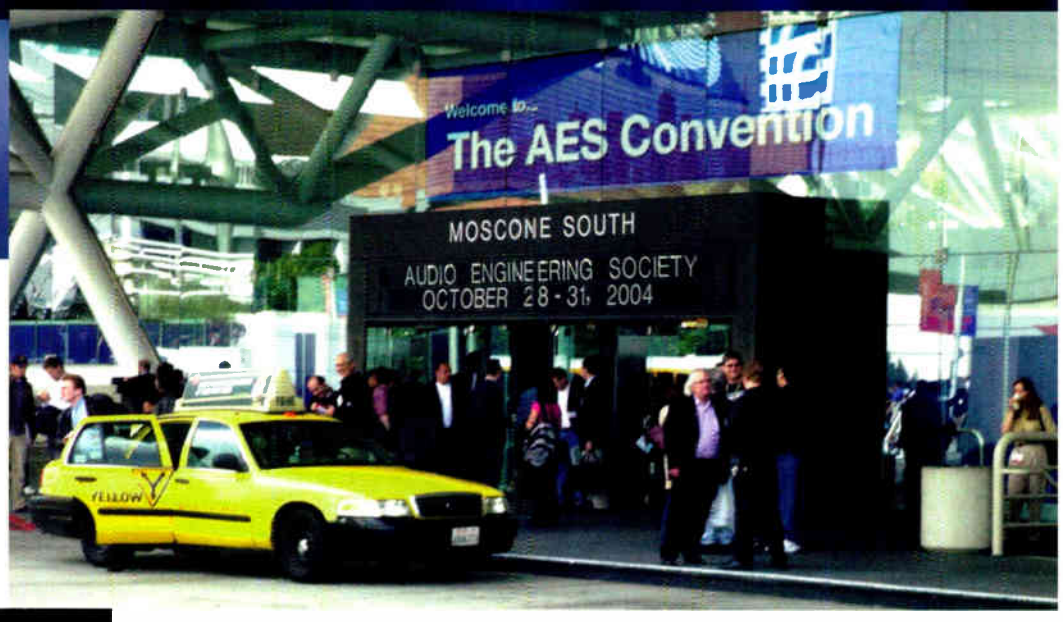
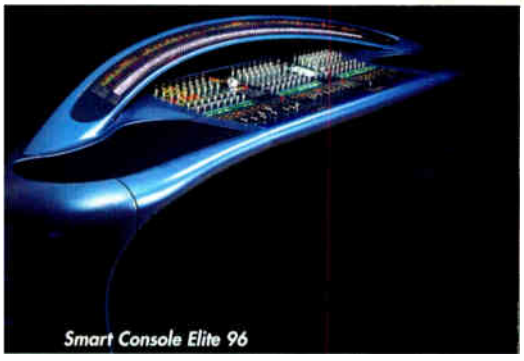


stereo and surround mixer modules for DAW mixdowns and support modules. Up to 16 units can fit into a 3U rack. Professional Audio Design (www.proaudiodesign.com) showed its 8-channel remote-controlled Reso Pre 873 mic preamp. Built using a vintage 1073 analog circuit design, it is controllable directly from Pro Tools, a MIDI control surface or the front panel.


Smart Console Elite 96

Throughout the show, attendees kept saying, "You gotta hear InnerTUBE Audio's (www.innertubeaudio.com) Atomic Squeeze Box Dual," a stereo/dual-mono version of the original Atomic Squeeze Box. This tube-based unit is designed to avoid the sonic artifacts of traditional compressors and limiters, with the ASB acting like a skilled assistant riding the faders.

The PreSonus (www.presonus.com) ADL 600 is a hand-made, Class-A, 2-channel tube preamp from renowned designer Anthony DeMaria. Featuring instrument input, line input and selectable mic impedance, the ADL 600 utilizes extremely high-voltage power rails (600V peak to peak) delivering 75 dB of gain and wide (5 Hz to 80 kHz, ±0.5dB) flat frequency response. Universal Audio's (www.uaudio.com) 8110 and 4110 multichannel preamps offer new, Class-A, all-discrete designs and three-way "Shape" switching for a versatile tone palette. The 8-channel 8110 and the 4110 (4-channel unit with DI) will list for $5,295 and $3,195, respectively.

A complete mastering studio in a rack, the Masterpiece from Legendary Audio (www.legendaryaudio.com) was conceived by veteran mastering engineer Billy Stull, with circuitry designed by audio legend Rupert Neve. Retailing at $19,000, the 6U frame offers peak and shelving EQs, dynamics, authentic tape texture (thanks to a real tape drive circuit), incremental phase rotation and other functions, including Image Control. The latter can increase/decrease the stereo sound image width, enhance/reduce a recording's natural ambience and even alter the the sound stage, such as sending vocals forward, backward or completely out of the mix.

Aviom (www.aviom.com) previewed its A-Net Pro networking protocol. For more, turn to page 76.

Supplied as a turnkey system, Version 2 is the latest generation of CEDAR's (www.cedar-audio.com) Cambridge audio restoration/noise-suppression processors for film, mastering, post and forensic applications. Version 2 now offers disk-to-disk and disk-to-world file processing, which lets users analyze/process selected partial or entire .WAV and .AIFF files, rendering the results back to a hard disk in a fraction of the time required in real-time processing.

Aurora from Lynx Studio Technology (www.lynxstudio.com) puts eight ($2,195) or 16 channels ($3,295) of 24-bit/192kHz AD/DA conversion into a single rackspace. Features include simultaneous analog and AES/EBU I/Os; remote Mac/PC control via Lynx AES16, MIDI or wireless infrared using compatible laptops and pocket PCs; SynchroLock™ jitter reduction; and an expansion bay for ADAT or FireWire interfacing.

Sign of the times: Yamaha (www.yamaha.com) created a new Music Production de-

Some Hits You Might Have Missed...

Frontier Design Group's (www.frontierdesign.com) Tranzport is a slick, compact wireless 2.4GHz remote for your DAW. The battery unit operates with most popular DAWs, including Pro Tools, Logic, Sonar, Digital Performer and Cubase, and includes a footswitch jack for hands-off punch-in/out.

FDG Tranzport

Lectrosonics' (www.lectrosonics.com) TM400 Digital Hybrid Wireless measurement mic system uses a proprietary algorithm to encode 24/88 digital audio information in an analog format with higher immunity to noise but without compansion artifacts, and providing flat response to 20 kHz. The "cube" UHF transmitter powers any measurement mic with 5/18/48V phantom power.

Radial Engineering's (www.radialeng.com) HotShot momentary footswitch is a simple passive unit that lets performers switch their dynamic vocal mic over for private communication to monitor or house or broadcast techs.

StudioPanel's (www.studio-panel.com) SpringTrap™ is a self-standing, stackable pistonic bass trap. Highly efficient from 100 Hz down to 40 Hz, SpringTrap is a ported MDF enclosure with a spring-loaded MDF internal mass and is stuffed with mineral wool. The triangular corner unit measures 25.45x18x48 inches (WxDxH) and is wrapped in flame-retardant fabric.

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partment to align its home recording and digital studio production products into a single entity. Its emphasis on the hardware/software approach was demonstrated by V. 2 software for the 02R96 and 01V96 digital mixers, offering advanced DAW integration with Nuendo and Cubase; and five add-on effects plug-in packages for the mixers built on Virtual Circuit Modeling (VCM), which models the exact analog circuits of studio classics.

SOFTWARE

Cakewalk's (www.cakewalk.com) Sonar 4 Producer Edition features multiformat surround mixing/editing (30 configurations supported), intuitive surround panning, Lexicon Pantheon Surround Reverb, Sonitus Surround Compressor and FX Suite processors, SurroundBridge (for using stereo plug-ins in multichannel environments), Video Thumbnail track, POW-r Dithering and more. Price: $959 (new), with upgrades available from previous Sonar products.

Nuendo 3 from **Steinberg** (www.steinberg.net) is a major upgrade with features aimed at post users, including AAF support, a new set of media management tools, Pinnacle X-Send integration and Warp-to-Picture functionality. Other features include a pull-up/down 0.1-percent option in the QuickTime video player, direct integration of external hardware effects processors into the VST audio mixer and MixConvert, a plug-in capable of translating from one surround format to another.

Spectrasonics' (www.spectrasonics.net) Stylus RMX (Real-Time Groove Module), the first plug-in super-powered by the Spectrasonics Advanced Groove Engine, ships with a whopping 7.4GB groove/sound library (triple that of the original Stylus) and features the Chaos Designer to introduce evolving musical variations (chaos) into the groove, plus a real-time auto-sync and built-in effects rack. Waves (www.waves.com) was in full-on convolution mode showing a new version of its IR-1 convolution reverb (reviewed in last month's *Mix*), a lite version and a new surround version: IR360. Waves also launched www.acoustics.net, an online library of downloadable Impulse Response samples. Pluggo for Windows, from Cycling '74 (www.cycling74.com), offers more than 100 native audio processing plug-ins for Windows XP host applications supporting the VST and RTAS formats. Cycling '74 also showed an OS X version of its free Soundflowerbed audio routing utility.

Version 2 of BIAS' (www.bias-inc.com) SoundSoap audio restoration package adds Remove, Click & Crackle and Enhance features, plus broader plug-in compatibility to the $99 app's audio "cleaning" functions. **Virtual Katy** (www.virtualkaty.com), the brainchild of *The Lord of the Rings* sound effects editor John McKay, lets sound editors track picture changes with auto-conforming features, eliminating the need for changing notes. **Digidesign** (www.digidesign.com) showed Synchronic, a new loop-editing plug-in with effects. **Octiv** (www.octiv.com) introduced the Octirama surround multiband dynamics processor for Pro Tools, and **Universal Audio** demoed the Plate 140 Reverb emulation for the UAD-1 and announced that its TDM plug-ins are available for Windows XP.

The **Sony** (www.sonyplugins.com) Oxford Reverb Plug-In for Pro Tools|HD, HD Accel and Pro Tools LE offers 5-band EQ, more than 100 presets and dual independent paths for early reflections and reverb tails.

RECORDER WORLD!

Field/effects recordists will be impressed by **Edirol's** (www.edirol.com) R-4 lightweight, portable recorder/editor. Equipped with a 40GB drive, the unit offers 4-channel recording at rates up to 24/96 with wave editing for $2,000, a fraction of the cost of most location recorders. There's talk of a timecode version, too. **Tascam** (www.tascam.com) unveiled its DV-RA1000, a clever approach to recording two channels of high-resolution audio—up to 192 kHz/24-bit—to inexpensive DVD media. The two-rackspace, $1,500 unit also includes Sony's DSD protocol, the basis for Super Audio CD, as an available recording format. It can also operate as a stand-alone CD recorder. Don't forget analog! Until December 15, **Studer USA** (www.studer.ch) is offering its revered A827 Gold Edition 2-inch, 24-track (with a stand-mounted remote/auto-locator and 24-channel meter bridge) at a special AES price of $29,995—nearly half of its original $58,000 list.

MONITORS AND MORE

Designed to translate mix stage and exhibition theater systems to a smaller scale for sound design and screening rooms, the **JSX** (www.jsxaudio.com) Sound Design Series is a modular monitoring system featuring Class-A amplification, horn-driven HF, three-subwoofer array, proprietary DSP algorithms and innovative hinged baffelette panels between the enclosures that adjust to create a pseudo screen wall or soffitt environment.

Wave Distribution now distributes France's acclaimed **Focal** powered digital monitors, including the SM11 full-range surround sound system and the compact SM8; both feature beryllium tweeters, Class-D amps, 24-bit/96kHz conversion and control of the onboard DSP (including FIR filters)

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3-way?
ALL-ways

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via PC/Mac Focal Manager software, PDAs, MIDI or a hardware remote.

NHT Pro (www.nhtpro.com) demoed its Xd Series of high-output, low-distortion near-fields with DSP-corrected EQ control for placement compensation that provides a wide, accurate soundstage from anywhere in the listening environment. The powered, two-way M-20 monitors are $3,000/pair. The larger ($5,000/pair) M-80 tracking monitor has twin 8-inch woofers, two 2-inch-dome midranges, a 1-inch-dome tweeter and an included sub, all with system amplification and calibrated DSP processing.

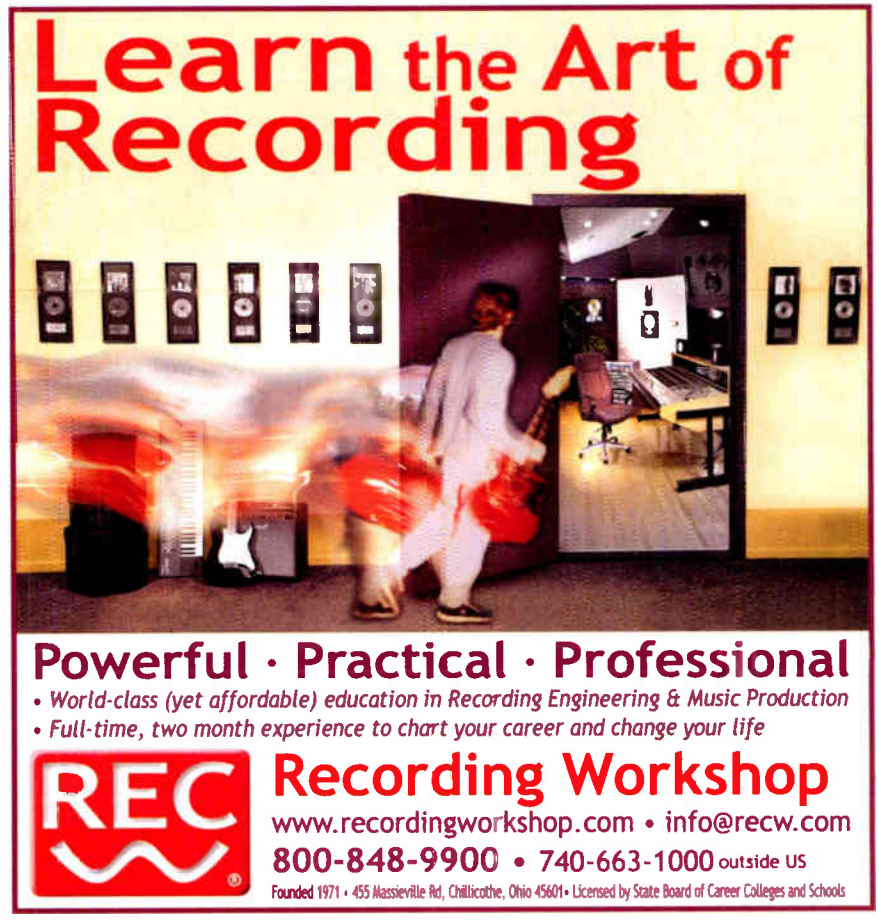
Big sound, small price: **Blue Sky** (www.abluesky.com) debuted its mini MediaDesk 2.1 system, with ultracompact two-way satellites, powered sub and bass management at $499; a 5.1 upgrade is an additional $499. **Dynaudio Acoustics'** (www.dynaudioacoustics.com) BM 5A is a self-powered, compact pro monitor delivering high performance that translates to larger Dynaudio systems at a low $1,250/pair. And just when you didn't think you could afford **Roger Quested** (www.quested.com) speakers—his HM415 system is $70k!—the company debuts its compact H108 near-fields at just $895 each.

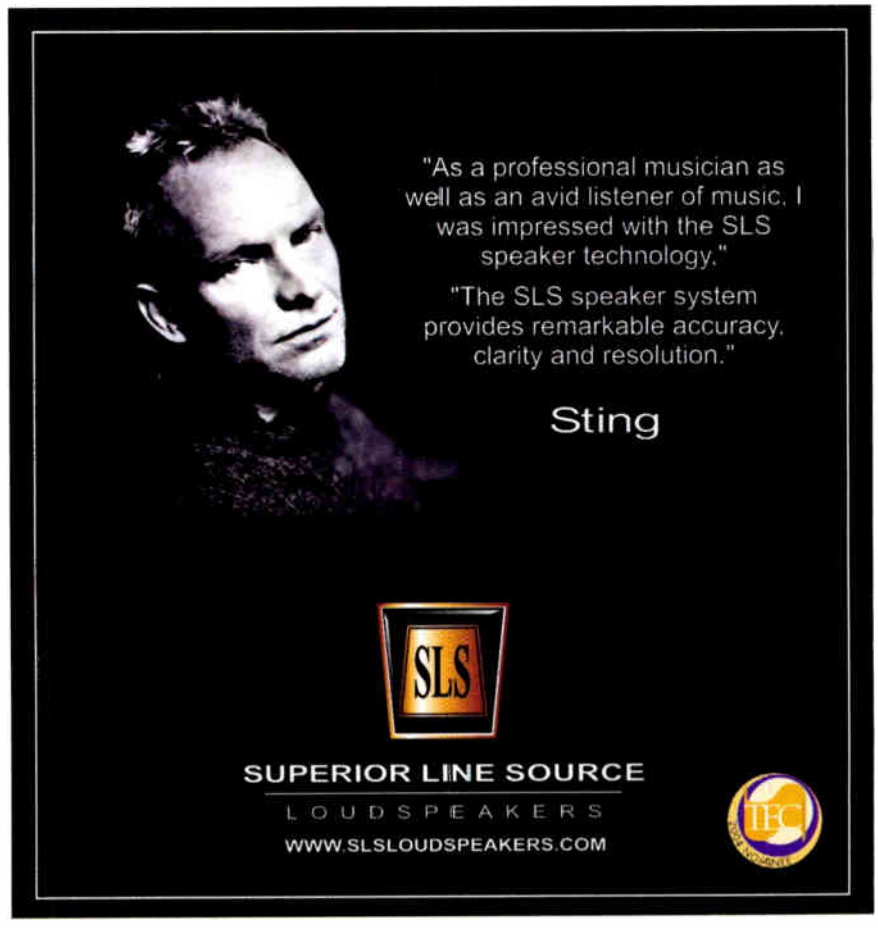
MICS, MICS, MICS

AES wouldn't be AES without new mics: **Earthworks** (www.earthworksaudio.com) rekindled the less-is-better miking approach with its DrumKit™ system, which uses three proprietary 25kHz mics with fast impulse response to capture full percussive attacks. The system comes in live or studio versions, priced at $2,095 for the two DK25 overheads and SR25 kick mic. DPA's (www.dpamicrophones.com) 4041-T2 large-diaphragm tube mic combines an omnidirectional capsule with a pentode tube driven as a cathode follower in a Class-A unity-gain output stage for performance that equals the company's legendary 4040 mic. **Neumann** (www.neumannusa.com) is now shipping the N248 power supply that brings phantom power to its TLM 127 mic and adds remote switching of five polar patterns. At the other end of the price scale, **Audio-Technica's** (www.audio-technica.com) AT 2020 is a rugged, side-address cardioid condenser with a low-mass, mid-size diaphragm and a street price of $99.

MORE TO COME!

AES had plenty of other cool products (turn to page 62 for Mark Frink's "Top 10 Live Sound Products"), and we'll present many of these in our regular new product columns. Meanwhile, the 118th AES comes to Barcelona, Spain, from May 28-31, 2005. Adios, amigos! ■





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Technical Excellence & Creativity

TEC AWARDS WINNERS

Held on Saturday, October 30, at the San Francisco Marriott, the Technical Excellence & Creativity Awards celebrated its 20 years in style. With surprise guest Janet Jackson introducing her "two dads," Jimmy Jam and Terry Lewis (this year's Les Paul Award recipients), Walter Murch and George Lucas (one of two Hall of Fame inductees) reminiscing about their formative years at American Zoetrope and Elliot Scheiner (Hall of Fame) thanking the audio geniuses who helped him discover the richness in audio engineering, this year's TEC Awards was a hotbed for star sightings and recognizing excellence in audio.

OUTSTANDING CREATIVE ACHIEVEMENT

STUDIO DESIGN PROJECT

Sterling Sound Chelsea Phase III, New York City
Architect/Studio Designer: Francis Manzella Design Ltd.
Acoustician: Francis Manzella Design Ltd.
Studio Owner: Murat Aktar

TOUR SOUND PRODUCTION

Radiohead
Tour Companies: Firehouse Productions, Red Hook, NY, Audiotek, Burbank, CA
FOH Engineer: Jim Warren
Monitor Engineer: Graham Lees

REMOTE PRODUCTION/RECORDING OR BROADCAST

Alison Krauss + Union Station Live (Rounder)
Remote Engineers: Gary Paczosa, Tracy Martinson, Adam Blackburn
Music Mixer: Gary Paczosa
Remote Facility: Effanel Music, NYC

FILM SOUND PRODUCTION

The Lord of the Rings: The Return of the King
Supervising Sound Editors: Mike Hopkins, Ethan van Der Ryn
Sound Designers: David Farmer, Ethan van Der Ryn
Re-Recording Mixers: Chris Boyes, Michael Semanick, Michael Hedges
Production Sound Mixer: Hammond Peek
Score Mixers: Peter Cobbin, John Kurlander
Audio Post Facility: Park Road Post, Wellington, New Zealand

TELEVISION SOUND PRODUCTION

***Late Show With David Letterman,* CBS**
Supervising Sound Editors: Jim Rose, Harvey Goldberg
Re-Recording Mixers: Seth Mintz, Pete Pelland, Tom Yang, Alton Norwood
Production Mixers: Jim Rose, Kevin Rogers, Tom Hermmann, Larry Zinn, Gary Kiffel, Harvey Goldberg, Michael Muller
Audio Post Facility: Ed Sullivan Theater, NYC

RECORD PRODUCTION/SINGLE OR TRACK

***"Hey Ya," Speakerboxxx/The Love Below,* OutKast,** Arista
Recording Engineers: John Frye, Robert Hannon, Pete Novak
Mixing Engineers: Kevin Davis, Neal Pogue, The Hit Factory, NYC
Mixing Facility: Larrabee Sound, Los Angeles
Producer: Andre 3000
Recording Studios: Stankonia Recording and Tree Sound Studios, Atlanta, and Larrabee Sound Studios, Los Angeles
Mastering Engineer: Brian Gardner
Mastering Facility: Bernie Grundman Mastering, Hollywood

RECORD PRODUCTION/ALBUM

***Hail to the Thief,* Radiohead,** Capitol
Recording Engineers: Nigel Godrich, Darrell Thorpe
Mixing Engineer: Nigel Godrich
Mixing Facility: Ocean Way, Hollywood
Producer: Nigel Godrich
Recording Studio: Ocean Way, Hollywood
Mastering Engineer: Bob Ludwig
Mastering Facility: Gateway Mastering, Portland, ME

OUTSTANDING TECHNICAL ACHIEVEMENT

Ancillary Equipment	Apogee Big Ben 192kHz master clock
Digital Converter Technology	MOTU 828mkII FireWire audio interface
Amplifier Technology	Crown I-Tech
Mic Preamplifier Technology	Focusrite ISA 430 MkII Producer Pack
Microphone Technology/Sound Reinforcement	RØDE S1
Microphone Technology/Studio	Neumann TLM 127
Wireless Technology	Sennheiser Evolution Wireless G2
Sound Reinforcement Loudspeaker Technology	Meyer Sound MILO
Studio Monitor Technology	JBL LSR6300 Series
Musical Instrument Technology	Taylor Guitars/Rupert Neve Expression System
Signal Processing Technology/Hardware	Universal Audio 2-1176
Signal Processing Technology/Software	Waves IR-1
Workstation/Recording Technology	Digidesign Accel
Sound Reinforcement Console Technology	Yamaha PM5000
Small Format Console Technology	Yamaha 01V96
Large Format Console Technology	SSL C200

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Bringing The Show Home

THE STORY BEHIND THE MIXES ON FOUR MUSIC DVDS

By Blair Jackson

A quick perusal of the music DVDs section at your local music store will tell you that this is a booming area bringing in a lot of work to recording engineers and mixers, as well as those folks on the visual end. The pre-Christmas period has become particularly fertile, so *Mix* decided to take a look at some of the audio considerations that went into the making of four fall music DVD releases. Trends? Pro Tools is as ubiquitous in this sonic universe as it is in all others. Also, it appears that the center channel is moving toward obsolescence and even the sub is losing favor on music-oriented projects. What does that leave us with? Glorified quad! Oh well, could be worse!

REVISITING THE STONES' CIRCUS

Filmed for the BBC in December 1968, but unseen until released on videocassette and Laserdisc in the mid-'90s, *The Rolling Stones Rock and Roll Circus* is one of the more fascinating musical documents of the late '60s. It provides an intimate glimpse of some of Britain's true rock royalty—the Stones, The Who, Jethro Tull and a "supergroup" called The Dirty Mac, which comprised John Lennon, Eric Clapton, Keith Richards (on bass!) and Jimi Hendrix Experience drummer Mitch Mitchell. Also featured on the mock circus set at Intertel Studios in Wembley were Marianne Faithfull, Taj Mahal, various circus acts and—oh yes!—Yoko Ono cavorting in a black sack and screeching a bit. Stones producer Jimmy Miller, who'd just finished *Beggar's Banquet* with the group, was the musical producer; Glyn Johns engineered in Olympic Studios' mobile truck, while Michael Lindsay-Hogg directed.

The production ended up being quite grueling, and in the end, Mick Jagger was not satisfied with the Stones' performance, so the special was not aired. Its release in the '90s involved a great deal of audio and video excavation work—a story in itself. Now, the DVD has even better sound and the requisite bonus features, including more songs from Taj Mahal, a fascinating interview with Pete Townshend, more backstage footage and audio commentaries from various Stones, the director and others.

One of the serious challenges on the audio end, both in 1996 and today, was turning the 3-track master tape "with no separation whatsoever," according to co-producer Mick Gochanour, into an effective surround program. The initial work was done by Steve Rosenthal at The Magic Shop in New York City; he spearheaded the ABCKO remastering of the original Stones albums for SACD a few years ago, as well. According to Gochanour,

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A moment from The Rolling Stones Rock and Roll Circus.

the surround mix that was used for the film's theatrical showings in 1996 was transferred to Dolby AC-3 for the Laserdisc. More recently, the cleaned-up and separated tracks were turned over to Jonathan Porath of Sound One in Manhattan for the 5.1 DVD mix.

"There are a few things you can do with a 3-track source to get it to 5.1, particularly with the tools available today," Gochanour says. "You can extract a lot and separate a lot with filters and there's a little bass extension going on. We have mostly audience in the rears and a general room feel. We were very careful to keep it in line with what you're seeing. We took the tack of this being a film mix, not just a music mix, and in this case, there are a lot of close-ups, so you have to be careful. When you're right in someone's face, you don't want too much reverb; it would feel out of place. We also did a 2-track music mix on the DVD and it's crankin'. It's a little tighter, particularly on the bottom end."

Porath had access to The Magic Shop's original stems, which had been loaded, along with the first stereo mix of the program and the original surround mix, onto a single 48-track DASH tape in the '90s. "Having everything on one DASH tape made it easy when we went back to do the 5.1 because we had all the different elements at our disposal," he says. "Because the mastering/authoring was going to be done in Pro Tools, we decided to record to Pro Tools to be more efficient and save generations. Pro Tools also let us get out a few of the clicks and pops that had always bothered me that we weren't able to eliminate earlier." Porath did his work in Studio A at Sound One, which was equipped with a Neve VR 60 console, but now has a Neve DFC.

"I used some of the elements [from the original mixes]," Porath says, "but I also did a number of things to the original elements. We were able to make it sound bigger and enhance some things like the bottom end. We were able to build the crowds by stealing little bits from other places. There was also a little bit of Foley work in a few areas—some clapping. At the same time, we always tried to keep it very authentic. That was always a main goal."

HANGIN' WITH SOME OF JAZZ'S BEST

The Hang DVD and CD brings together some of the brightest lights of contemporary jazz for a consistently dynamic session that fuses a straight-ahead jazz approach with Latin, African, rock and other styles. The generous and adventurous 14-song set is anchored by

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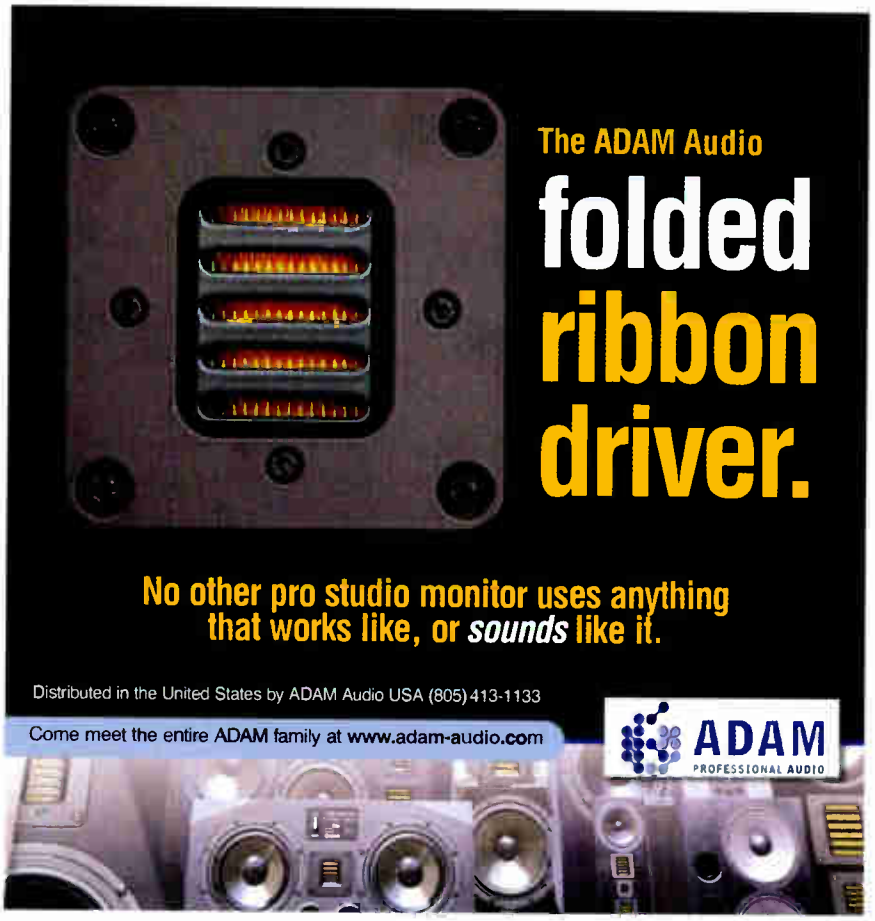
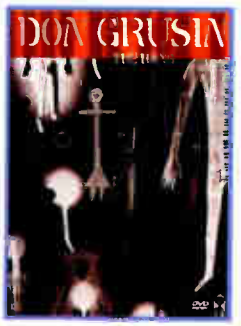


Bringing The Show Home

leader/arranger/keyboardist Don Grusin and features a revolving cast of greats including Grusin's older brother (and fellow keyboardist) Dave; bassists Nathan East and Abraham Laboriel; percussionists Alex Acuña, Pete Escovedo and Harvey Mason; singer Patti Austin; guitarists Lee Ritenour, Ricardo Silveira and Frank Quintero; sax players Sadao Watanabe and Ernie Watts; and a host of other players and singers. For a one-off group who play structured but highly improvised music, their chemistry is truly astounding. The original recording—to a 24/96 Nuendo system—was done by Greg Ladanyi at the short-lived L.A. club Platinum Live. Stereo and 5.1 mixes were in Pro Tools by Paul Klingberg at his Red Note Studio in Santa Monica, Calif. Steve Hall of Future Disc handled mastering chores.



"There was a huge amount of music to go through," Klingberg says. "There was three days of material—I had about a terabyte of data to work through, including rehearsals; it was a lot to manage. When I got it, no editing had been done, so I could take the straight .WAV files—48 tracks—from Nuendo and move them onto Pro Tools|HD, which is my main tool. Then I built my own Pro Tools session from those.

"At first," Klingberg continues, "all I could go by was audio. I didn't have any picture in the beginning stages. I was probably three-quarters of the way through before I got the picture—there had been no line cut done at the shows, and Don [Grusin] didn't have rough mixes. When I inherited these files, it was a huge undertaking, just piecing these things together. Don had taken a lot of notes, so we sort of had a road map, but that all changed as we worked through it." Klingberg got his clues about the sound of the room from listening to the music and, later, seeing the video, but he notes that "Don has a well-deserved reputation for making these great-sounding and pristine records, so we wanted to keep it very hi-fi and not have a lot of ambience. We wanted it to be tight and have that clarity and snappiness that an album has."

Klingberg mixed the entire project with-

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in Pro Tools. "It was 100-percent mixing by mouse. Pro Tools has a fabulous interface for 5.1. Its surround capabilities are awesome and it's so much faster working that way. I just finished mixing a project that was even bigger, a concert by Earth, Wind & Fire and Chicago, and once again it was all done in Pro Tools with tons of Waves plug-ins. I went into POP and they couldn't believe I did this three-hour show with a Kensington turbo-mouse and a bunch of Waves plug-ins. But that's the smartest and fastest way of working I know." Klingberg uses British-made PMC AML-1 monitors for his surround work. "I absolutely love 'em," he says. "I was one of the first guys in L.A. to get them."

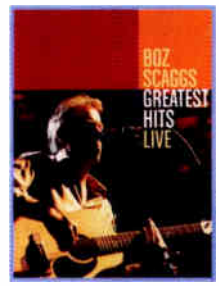
When it comes to 5.1 mixing, Klingberg says that, increasingly, "I'm really shying away from the center channel, putting less and less in there. By doing that, you're removing one of the many landmines that can go off in a consumer's home theater system. Especially with vocals—I never, ever put vocals in there. Us music guys have been shoehorned into using that center channel because it's there. It has a very specific role in theatrical [films], but it's not really necessary for music. LFE is the same way, too: There is nothing at all that is bass-dependent in that LFE channel. It's back to what Alan Parsons said years ago: 'I'm moving more toward a quad sound.'

"It's still important for me to get my stereo mix together before I even think about 5.1," he continues. "I've had 25 years of working in stereo, so I have developed my approach to mixing that way. I'll always start in stereo and then build out from there."

On *The Hang* project, Klingberg found himself going back and forth between the demands of the DVD and the CD. "I changed all my buses to a stereo out and went through everything and did some tweaks appropriate to stereo." Then, using a Martinsound MultiMAX multiformat monitor controller, he was able to easily switch back and forth between stereo and surround mixes as he worked.

Paul Klingberg mixed* The Hang *entirely in Pro Tools.

BOZ IS BACK...IN STEREO AND 5.1



Between his fine jazz standards album last year, *But Beautiful*, and this fall's *Greatest Hits* DVD/CD, Boz Scaggs has re-emerged as a vital force in music after laying low for a number of years. *Greatest Hits* has Scaggs and his crack rock/R&B/blues band performing at the venerable Great American Music Hall in San Francisco, rolling through 16 songs covering every phase of his solo career, from the bluesy jam classic "Loan Me a Dime" through all of his mid-'70s smashes ("Lido," "Slow Dancer," et al) and more recent triumphs. Scaggs looks and sounds great; the DVD is a highly satisfying tour through his singular oeuvre.

The music was recorded to Pro Tools by engineer J. Michael Rodriguez and mixed by Steve MacMillan (Shania Twain, Celine Dion, Seal, Rod Stewart, Patti Austin). Like the other mixers we talked to who work in stereo and 5.1, MacMillan perfected his stereo mixes first because "It's harder to make it work in stereo; you're more limited with how wide you can go. Once everyone is satisfied with the stereo mix, it's a fairly easy exercise to pull things out and create surround reverb if you need it. If you've taken a day to mix a song and everyone is happy about it, you can usually do the surround mix of that song in half the time. And working in Pro Tools all the way through makes it easy to do that, as opposed to [going through] a console where you've filled the console to do the stereo version and then you have to re-think it all on the console to go to 5.1. The level of automation in Pro Tools is so good now. You're not limited by how much [outboard gear] you have. For instance, 12 gates is easy to do."

Increasingly, MacMillan has been able to mix entirely in the Digi environment:

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Bringing The Show Home

"Sometimes, I'll use a mouse or ProControl or Command|8—just having a couple of faders to grab and ride, I'm happy with that. There's a tactile thing to riding a fader that I like, but I don't need 100 in front of me. It seems like the way many of us work these days, we're meticulously zoning in on one or two things at a time. It's not like you've got 10 fingers on the faders like we used to.

"Mixing to 5.1 in a live situation is almost like a hyperstereo effect," he adds. "With a studio surround mix, you have more latitude—you can have that tom fill coming out of the back speaker if you want. You have to keep the illusion of being in the audience and there are certain instruments that don't disrupt that illusion. You can get away with using some softer things—acoustic guitar and maybe some keyboards [in the rears]. That stuff tends to drift a little bit toward the back and out to the side, but you can't go too far."

As for the center-channel debate, "I use it either sparingly or not at all," he says. "It's perfectly acceptable to not use it at all, and that's what I did with the Shania Twain project; I just ignored it. In the case of Boz, I put a little center information in there—some voice—but then you need to create a discrete ambience [there, too] because the singer does not want someone soloing his voice in a live situation. It's almost like a multitrack: You're exposing it too much. But not using the center channel is not a technical problem at all."

And the sub? "I'll just add a little bit of kick, and if it doesn't mess with the tonality of the bass, maybe a little bit of that. Sometimes some low toms. If you've got enough bottom in the speakers, you're risking a miscalibrated system playing back something funny if you put too much in the sub. Most people have the bass-management system anyway, so you're going to be sending a fair amount of stuff there without doing anything.

"I almost always will put a breath of something in the sub," he continues, "but you can get away with not doing it. In certain cases, with the Dolby fold-down, it discards whatever was there anyway, so if your mix is depending on stuff that's being sent to the subs, that can cause problems."

LOS LOBOS LIVE: MUY CALIENTE!

The great East L.A. band Los Lobos used the occasion of their 30th anniversary to capture two nights at San Francisco's historic Fillmore nightclub for their first DVD. Working through a set list that touched on all of their studio albums since their 1983 *Slash* debut, with a concentration on their last two CDs, the band showed their incredible depth and range for an A/V document that the group's many rabid fans will cherish.

Actually, it started out a little rough, says Robert Carranza, who engineered the recordings in the Studio on Wheels remote truck, which is equipped with a classic API console, and mixed the project to 5.1 for the DVD. Carranza also engineered the group's latest CD, *The Ride*, and has worked with Ozomatli, Jack Johnson and many others. "There were a few technical problems with amplifiers and onstage noise and, in general, they didn't play as well the first night," he says. "Since we were only doing two nights, that put a lot of pressure on the second night, but that show was incredible. I walked out of the truck and thought, 'Wow, we

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really captured something amazing!'" Indeed, of the 21 songs included on the DVD, all but three were taken from the second show.

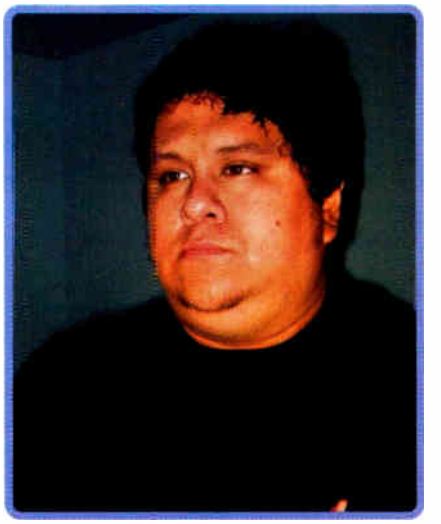
"A lot of trucks just care about getting the signal on tape and that's it—they'll worry about it later in post. But on this, there were some serious decisions about which performances we were going to use. So I did a fairly serious mix in the truck as we went along. That board is immaculate." Recording was to a Mackie MDR 24/96 hard disk system and then the files were transferred to Pro Tools for mixing on an SSL 9K at O'Henry Studios in L.A.

"I started mixing and the first couple of songs sounded really good so I sent them to the band," Carranza says, "and they were like, 'Hey, have you listened to your *rough* mixes?' I hadn't because I didn't want to be influenced by them. But they said, 'There's a certain raw quality that's lacking from the new mixes—they're *too* cleaned up.' So I went back and listened to the rough mixes and realized they did have a certain raw energy that the new ones didn't have. So I started all over again."

How do you get the rawness back? "You start by taking out every EQ," Carranza says with a laugh. "That's what I did. I listened to the roughs and took all the EQs I needed to."

Carranza also notes, "For 5.1, I would have liked to have miked the place differently if I'd had my druthers. We put up some stereo Sennheiser shotgun mics at the front of the stage and a pair at front of house—ATM 4033s facing toward the house. There used to be a big slap off the back wall at The Fillmore, but recently, they put up some acoustic paneling to tame it and it's changed the sound of the room, which threw me off a little bit. The decay time was definitely different than I remember. I would have liked to have added a few more microphones in some key areas—maybe some sort of tree hanging from the room, almost like a film date to get a little more of the tone of the ceiling and the air moving around the room. All in all, it was great."

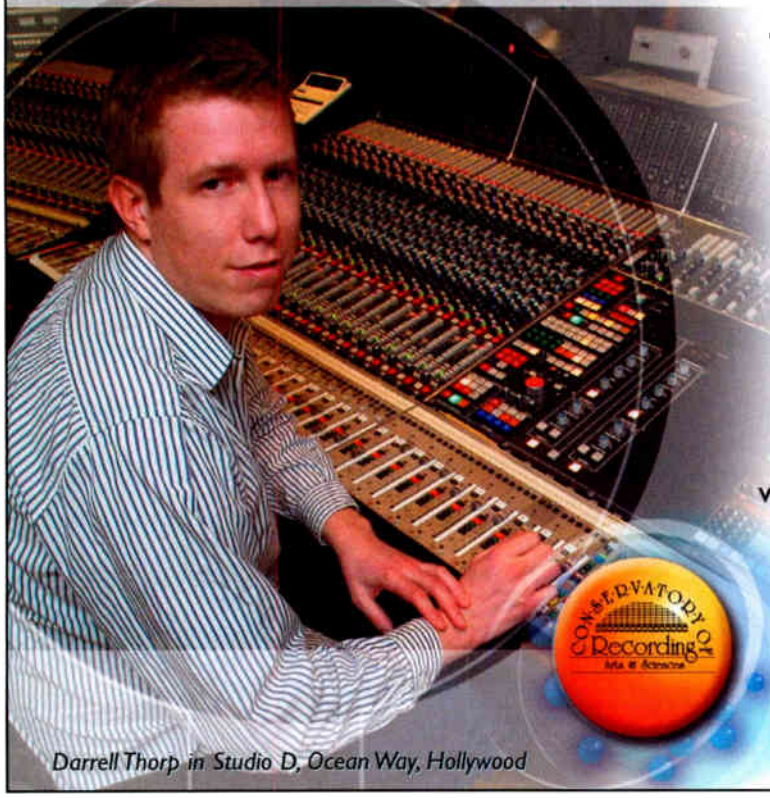
For the surround mix, Carranza says he "tried to make it like you're in the center of the room watching the group." He put a small amount of percussion and some vocal delay in the rears—"I wanted to get some of that backslap you hear in there," he says. "The sub got some kick drum, some bass and some of the back room mics. Hopefully, you can feel that Fillmore ambience. My goal was to capture the vibe of the show for someone who hasn't seen it—give them a picture of what happens at a Los Lobos show." ■



Engineer Robert Carranza roughened up Los Lobos' live mix by stripping out EQs, one by one.

Blair Jackson is the senior editor at Mix.

CONGRATULATIONS!



Darrell Thorp in Studio D, Ocean Way, Hollywood

Conservatory graduates Darrell Thorp and Moka Nagatani were recently awarded Grammys for:

–Best Engineered Album, Non-Classical, "Hail to the Thief" Radiohead

–Album of the Year, "Speakerboxxx/ The Love Below" OutKast

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After amplification, summing and mixing are two of the oldest and most basic audio processes—going back to the early radio broadcast days when the announcer's microphone signal and the record player's output were combined for transmission. Summing and mixing have always been inseparable, interrelated processes: Control the individual signal levels (mix) and then combine and amplify them on a mix bus (sum). While summing and mixing audio signals have always required an audio mixing console, the recent and rapid adoption of digital audio workstations, with integrated digital summing and mixing facilities, has challenged the console's sole dominance—even its continued existence as the centerpiece in a modern recording studio.

While the sonic arguments for and against mixing DAW productions (out of an external analog mixer vs. "mixing inside the box") continue, a new class of products has emerged in the form of small, analog summing-only boxes. Using an external summing unit divides the mixing process into digital mixing within the DAW and external analog summing.

BY BARRY RUDOLPH

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WHY SEPARATE SUMMING?

A growing number of proponents of summing their DAW mixes in analog say they're much happier with the overall sound of their mixes. Claims of a "more open, clear and punchier sound" are common, with the main consensus that (given a high-quality summing unit) the mix sounds like it was done on a very expensive Neve, API or SSL analog console. The best of both digital and analog worlds, the rising popularity of this method is self-evident: The DAW's wonderful mix automation, plug-in processing and editing features allow for individual track level adjustments, muting, soloing and effect treatments, while external analog summing frees the DAW's CPU (and ancillary DSP chips) from the processing overhead required to perform internal digital summing.

Another concomitant feature of external analog sum mixing is that the session sample rate is no longer critical when it comes to the final stereo mix master. If you want to leave all of your options open for future release formats (analog 2-track; 44.1, 48, 88.2 or 96 kHz; MO; SACD/DSD; DVD-A; or Blu-Ray) or just don't know what the final delivery format will be, you can work on your project at whatever sample rate you like and wait to output your mixes in whatever form is required. Furthermore, the mix audio, now at +4dB analog line-level, is fully accessible for additional euphonic processing without extra deleterious A/D, D/A or sample-rate conversions.

SUMMING BOXES DEFINED

For the purposes of this article, summing boxes are defined as stand-alone units that accept any number of audio outputs from a DAW's analog I/O and sum, or add, them together to create a stereo mix. For the most part, these summing units do not have individual input level controls, nor do they have effect sends, mute, solo buttons or other controls that would define them as line-level mixers. These are strictly summing blocks. Ideally, a summing unit is an inert box—as sonically transparent as possible and without mixing controls—so that the repeatability of your DAW mix is certain.

SUMMING IN ACTION

Within the DAW program, instead of assigning and mixing all channels (tracks) to the internal digital stereo mixing bus, each track(s) would be assigned to an individual analog output of the system's I/O unit or soundcard. These outputs would connect to the external summing unit's inputs, where they would each be electrically added together to build a stereo mix. In the case of large mixes with many tracks, stem mixing—a *rigeur du jour* in film and TV production—is used, in which groups of instruments are subgrouped and routed to pairs of stereo I/O outputs, although there are no technical reasons why a 72-channel or bigger summing box could not be used for large mixes.

Boutique Audio Inward Connections

The following are brief descriptions of eight summing units on the market today. Models come in all price ranges and from the simplest to the most elaborate, each with unique feature sets to fit any audio chain and workflow method.

THE BOXES

Boutique Audio (www.boutiqueaudio.com) has taken over the Inward Connections line. Its summing unit is a 1U rackspace box featuring 16 differential balanced input channels, each with its own panpot. There are eight XLR connectors for the first eight channels and two DB25 connectors for inputs 1 through 16. The stereo bus master control has custom-wound Cinemag transformer outputs and ¼-inch TRS insert points for outboard processing. A front panel switch toggles the inserted processing in/out. All amplifiers are discrete Class-A SPA690 amplifier blocks, and up to three units can be linked together for 48 total DAW channels. Frequency response is 1 Hz to 200 kHz, ±0.5 dB; THD @ 0.002%, 10 Hz to 20 kHz; signal-to-noise at unity gain is -110 dB; IMD is 0.005%; clip point is +26 dBm; and input impedance is over 10M ohms. The unit sells for $3,600 MSRP; a meter bridge is optional.

Roll Music RMS216 Folcrom

One of the first companies to offer a dedicated summing unit, Dangerous Music (www.dangerousmusic.com) makes two models: the 2-Bus and 2-Bus LT. The 2-Bus LT is a 16x2 summing unit in a single rackspace. The LT takes in eight stereo pairs and automatically routes them to the left and right sides of its stereo bus. Eight mono buttons are provided to sum or "collapse" any individual pair down to mono—equally to the left and right buses. This convenient feature is for "forcing" normally center-panned audio tracks like kick and snare drums—coming in from DAW outputs 1 and 2—to the center of the mix.

Connecting the LT to your DAW is easy by using DB25 connector cables wired in standard Tascam DA-88 pin-out. The LT also has a pair of rear panel XLR jacks for linking multiple units for more than 16 inputs or for external stereo effect returns such as reverb to the LT's master bus. Full +4dBm XLR stereo output connectors are also provided to feed a monitor unit (such as the Dangerous Monitor) or your existing console's monitoring section. A second pair of +4dBm outputs feed your analog stereo mixdown machine. MSRP is $1,500.

The Dangerous Music 2-Bus is a two-rackspace unit with all of the features of the LT but with slightly better performance specs and 16 separate XLR input connectors instead of two DB25 connectors. The XLR connectors make wiring up a normalled input patchbay for 16 insert effect paths an easy task. There are also +6dB boost buttons for each stereo stem to "jump" the level up of any stereo pair(s) over others when needed. Options include a stereo insert loop path on the output for

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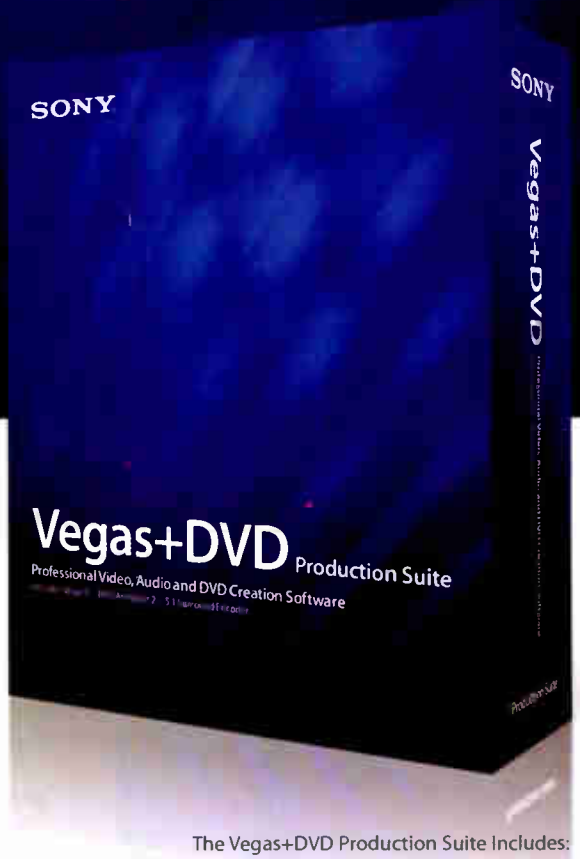

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outboard processing and the replacement of the +6 buttons with simple mute buttons. Frequency response is 1 Hz to 100 kHz, ±0.2 dB; THD is 0.005% in the audio band; IMD is measured at 0.005% IMD60 4:1; noise floor is at -81dBu total energy in the audio band; and max output level is +26 dBu.

The 2-Bus features a premium, stepped stereo output attenuator custom-made by NASA-supplier Janco Corp. for completely repeatable stereo bus level setting. The stereo output bus has a 10dB range adjustable in 0.5dB steps. All of the Dangerous gear features Burr-Brown op amps and hermetically sealed Arrowmat relays with silver contacts to switch audio. The 2-Bus sells for $2,999 MSRP.

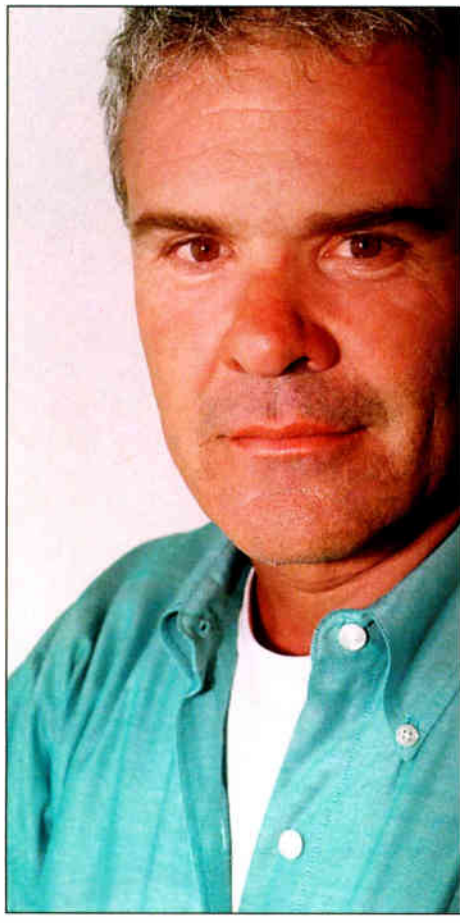
InnerTUBE Audio (www.innertubeaudio.com) offers Sumthang, a tube-based 8-input stereo summing box that features custom-wound, nickel-core, transformer-balanced inputs and outputs; dual Sifam VU output meters; a stereo output volume control (or optional stepped attenuator); and the ability to cascade multiple units to handle additional input channels. Optional 8- and 16-channel expander units run from a single external power supply. It's interesting to note that like all of InnerTUBE's product line, Sumthang uses only octal tubes (8-pin tubes with ceramic, bakelite or phenolic bases holding the glass tube itself; in this case, two 12SL7s and two 12V6s), which is said to be better-sounding than glass-only tubes. List price is $2,500.

The Commander from Nautilus Master Technology (www.nautiluspro.com) is a discrete Class-A design that sums 12 channels to stereo. Mastering-style stereo bus functions include a four-way assignable stereo insert for external analog mix bus processing, separate L/R mutes, a Mono button, VU meters and meter range control. Stretching our survey's definition between a simple summing unit and a line-level mixer, it has eight analog XLR/TRS inputs with pan and mute controls. There are also two dedicated stereo pair inputs that can be used for effects returns or for expanding up to 36 total channels with the upcoming Commander expansion units.

A unique feature is the ability to switch from the 12-channel summing section to an auxiliary stereo source for A/B comparison with previously recorded mixes or other CD/SACD stereo references. The separate level controls for each stereo source ensure accurate and true sonic comparisons. The Commander has two RMS VU meters that make good adjuncts to your DAW's level meters. Like Boutique Audio's unit, the Commander uses discrete, Class-A SPA690 amplifier blocks throughout. List is $3,995.

InnerTUBE Audio Sumthang

Closest to the "ideal and in-



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ert" summing box, the Roll Music (www.rollmusic.com) RMS216 Folcrom is the simplest unit in this survey. It requires no power supply and is essentially a passive-resistive summation circuit housed in a single-space 1U box and without internal amplifiers. Audio undergoes no additional processing or coloration but loses about 30 to 40 dB of level, which must be "made up"—restored to a proper +4dBm line-level. Roll Music recommends using a good-quality microphone stereo preamplifier for this—a piece of gear that usually goes unused during mixdowns. In effect, Folcrom allows you to sculpt your mix's overall sound through your choice and setup of this mic pre—be it an old-style tube model or a very pristine transformerless modern unit.

Folcrom's 16 input channels take fully balanced lines coming from your DAW over two standard 8-channel DB25 cables and connectors. The front panel has a row of pushbutton switches to assign each channel to the left, right or center (or none) of the stereo mix bus. The output of the Folcrom comes out of a stereo pair of balanced XLR connectors on the rear panel. Specs include a max input level of +42 dBv (at which point, the resistors start to heat up); output impedance is 150 ohms balanced, recommended load impedance is 1,300 ohms and output level will be -35 dB nominal; frequency response is 0 to 500 kHz, while crosstalk at 1 kHz is -90 dB. MSRP is $795.

SPL's (www.spl-usa.com) MixDream Model 2384 is a 16x2 analog summing/mixer unit in a 2U cabinet and is the most elaborately featured summing system in this survey. The Class-A amplifiers, running on a ±30-volt supply, promise loads of headroom with a -97dBu (A-weighted, all channels active) noise floor and a dynamic range of more than 125 dB.

There are 16 relay-controlled (I/O bypass) balanced inserts for using analog effects on the individual channels. Multiple MixDreams can be linked together for more inputs or for 6-channel surround sound applications. Other features include a built-in adjustable peak limiter, stereo expansion control, master inserts and switchable output transformers from Lundahl, proprietary differential amplifiers for each input and a discrete, low-noise power supply. MSRP is $3,795.The Tube-Tech (www.tube-tech.com) SSA 2A Stereo Summing Amplifier uses eight tubes and is powered by a solid-state power supply. The SSA 2A performs summing of up to eight stereo pairs of input channels down to a single stereo output. The unit also has four mono inputs ready for hard-center–panned tracks such as kick, snare, bass and lead vocals. The two-rackspace unit has a 23-step gold-plated output attenuator with a master gain control range of -10 dB to +10 dB and features two large, lighted VU meters.

Expandable to 16 stereo inputs, the SSA 2A's electronically balanced inputs can handle superhot levels up to +30 dBU—more than any available DAW I/O can output. Maximum output level is +26 dBU for less than 1% THD+N @ 40 Hz (distortion is more typically <0.01%), and frequency response is rated at -3 dB for 5 Hz to 50 kHz. The fully balanced output section uses a floating transformer with static screen. At $3,895 MSRP, the SSA 2A is for anyone interested in summing their DAW mixes using tubes only. ■

Barry Rudolph is an L.A.-based recording engineer. Visit his Website at www.barryrudolph.com.

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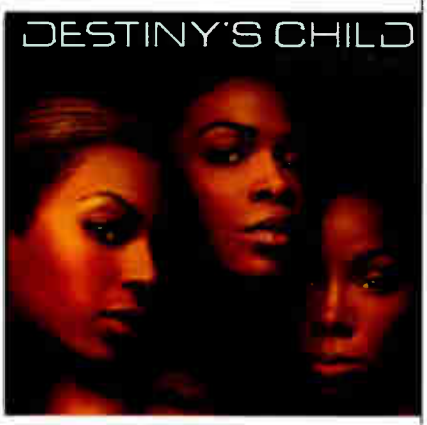
Rodney Jerkins

A HIT PRODUCER'S DESTINY FULFILLED

Jerkins at Grind Factory, his L.A. studio



At 27, Rodney Jerkins has a list of credits—as a producer, musician and songwriter—that could make an industry veteran's head spin. He has been unleashing chart-topping singles since he was a teenager, building up a resumé that includes Platinum artists such as Whitney Houston, Brian McKnight, Britney Spears, *NSYNC, the Backstreet Boys, Enrique Iglesias, Jessica Simpson and Will Smith. He has several soundtracks under his belt, including *Honey*, *My Baby's Daddy* and *Scary Movie 3*; owns Grind Factory, his Los Angeles studio; and oversees his own label, Darkchild Records, where he finds, signs and produces new talent.

A self-made success story, Jerkins is a multi-instrumentalist with the Midas touch when it comes to creating hits. Based in Orlando, Fla., he's currently the "It" man on industry wish lists, and to hear him speak, he has only scratched the surface of what he plans to accomplish. Today, he's settled into a familiar spot: Number One on the charts with the new Destiny's Child single, "Lose My Breath," from their latest album, *Destiny Fulfilled*.

How does technology allow you to collaborate with artists while in Orlando, given that so much of your business is in Los Angeles and New York?

It's so awesome, because I finished the Destiny's Child record and Tony Maserati mixed the first song in California. He does all my mixes, but it's hard for me to be there, so we did it all by Internet with no MP3s and just full-bandwidth downloads. MP3 is not the clearest format, so we do it so we can download. It's really rough! I've been doing this professionally for 11 years and I've been able to catch both sides of the world: great analog and the digital wave. Stuff where you had to be there, you can now do by phone and e-mail.

Do you prefer digital to analog?

I like digital because it's a lot cleaner, but I love the warmth of analog. There's nothing like Neve EQs and analog mixes on vocals and tracks. It makes everything warm and Pro Tools is not able to capture the true essence of analog yet. Sometimes I use both. We record everything in Pro Tools. The last time I used analog was on Michael Jackson in 2000 [*Invincible*]. He was a little scared of Pro Tools. We tried to get him to use it, but he didn't want to go that route yet and I understand: He came from the school of analog. But experimenting with new toys keeps you ahead of the game.

The dance and remix markets have begun incorporating real instruments into tracks. Have you been doing this?

Yes. I started before they did. My path has been to always have syncopated rhythms live, orchestras live, sample sounds over driven beats. Lately, I'm doing a lot of stuff on my wife Joy [Enriquez]'s album with live piano, drums, bass. People want real music again.

What's your take on the market?

When I was in California, I was looking for a studio to rent for a while. I was working on film projects and seeing major studios for sale took me by surprise. They [had purchased] million-dollar boards, and then Pro Tools came along and made it easier to make great-sounding records. You could use a $20,000 Sony or Mackie board, or any small unit, and still get great quality. I'm not saying it's better than an SSL, but it's quality where the ear on the street can't tell the difference. A kid listening to the radio doesn't know if you mixed on an SSL or a Mackie board. I have friends who aren't in the music industry who have Pro Tools in their homes just to experiment with because you can get it for under $800. Everybody wants to produce or make beats because it's so simple

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and cheap. Everyday people can make a record. I used to get a lot of noisy 4-track and 8-track demos. Now I get demos that sound like records, and they did them at home with Pro Tools.

What are you working on now?

I finished Destiny's Child, Kierra Sheard ["You Don't Know," from her Number One gospel debut, *I Owe You*] and I'm mixing *Versatility*, my instrumental album of hip hop, jazz, gospel, dance hall, pop and R&B. I'm playing all the instruments, and I'm doing it for the DJs, producers and samplers. Young producers want samples and they get cheesy sounds from sample CDs. I know, I was one of those kids. Now they'll have something to sample, and it's a way for DJs and the film industry to license music for film, commercials and clubs. People can sing or rap on it. It's something I plan to do every year.

I'm working on stuff for J-Lo and Toni Braxton, and a rapper/hip hop artist named Asia Lee. I'm writing a song for Carlos Santana. I'm working from 8 a.m. to 1 a.m. every day.

Tell me about your studio Grind Factory and your label Darkchild Records.

Darkchild is an imprint distributed by Bungalo/Universal. Grind Factory is my West Coast studio. I call it Grind Factory because grind means work hard and don't rest. Don't expect to lounge out and watch TV there. It's been open since June 2003. Darkchild is in New Jersey, but I do a lot of work out of L.A. I tap into a lot of film projects and that's the main reason that I needed my own place. I spend maybe half the year in Florida, off and on.

You have accomplished so much at such a young age. What makes this possible?

God gets all the glory. I can't take the credit. I was born with a gift from God, and I know it's a gift because not everyone has it, so it has to be God. I feel I have only accomplished one-tenth of what I'm going to accomplish. I have so much more to do. I feel I'm just starting, but starting with the experience of a veteran who has been doing it for over 10 years.

It's no secret that you have cars, mansions, plenty of material possessions. Based upon your background—you were raised a strict Pentecostal, your father is a Reverend—how do you balance this with your beliefs?

My background keeps me humble. A great family reminds you of where you came from. Things are just things. I serve God, and if I'm constantly on my knees, praying daily and worshipping God, I seek Him. Houses and cars are just extra blessings. God blesses me because I have not ignored Him, I have only adored Him. I'm in His will, and no music industry can take that away from me.

When you work with me, there's no drinking, no smoking, no cursing, and if you don't like it, don't work with me. I serve God, who created all this and can give it or take it away. A lot of men work to get rich. I'm happy to be rich in Christ first.

As a songwriter, producer and musician, how do you keep from overstepping your boundaries in the studio?

When I produce, I'm there to make the best thing happen for that artist and give them all I can. Even if they can't sing a lick, I have to make it happen. I've worked with some of the worst singers in the world, but we've had success with them, and at the end of the day, the record company is like, "Wow! How did you get these vocals out of them?" A lot of Pro Tools and [Antares] Auto-Tune. You've got to have a lot of patience. I want the artist to sweat and be mad and say things about me under their breath. Nothing comes easy to get to greatness. My name is going on that record, and I want people to listen to it and say, "Did you hear that song?" It's about hard work and discipline.

How did you get into production?

My brother [Fred, a writer/producer who now works with Jerkins and independently] produced a lot of stuff locally when I was 10. I started asking him questions and he'd teach me. I fell in love with Teddy Riley's sound, the New Jack Swing. I wasn't a whiz kid, but I believed in myself and that I could accomplish anything if I put my mind to it. I never gave up on my dream.

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What is your definition of a producer?

It's being able to coach the vocals, know the board and equipment and tell the engineer what I want. So many people say they're producers just because they can make a beat. Don't call yourself a producer if you're not one. A music producer knows which note is flat or sharp, what to sustain, what should be staccato or legato, how to record and mix a record. A real producer can be left alone in the studio with the equipment and come out with a hit record.

Tell me about your working relationship with your engineer, Jeff Villaneuva.

He's the greatest thing that ever happened to me. Even with a Grammy or a Number One hit on *Billboard*, you need a team, and for two years I had the wrong team. I met Jeff at a conference where I was speaking. I had him come over to assist on a session and the first thing that caught me was his spirit. He's more than an engineer; he's a friend. I'm going to push him to be one of the best engineers in the world.

How did you establish yourself as a producer?

I had a Number 12 R&B song with Gina Thompson and the phone rang. Then I had a Number 2 single with Mary J. Blige, Number 4 with Joe—I was about 18 years old. But when I had a Number One across the board with Brandy and Monica ["The Boy Is Mine"], 14 weeks at Number One, the phone would not stop ringing. That's what a hit does. God bless people who just want to make records, but I'm not excited unless I have a single or a hit. It excites me to know I gave a hit to someone. It gets my blood pumping. That's what I call your own personal standard, what you accomplish. I try to keep the bar at a high level. I want to be top-notch every time I set foot in the studio. It's not just a record or a song—it's part of my legacy.

How is it different producing someone like Vanessa Williams vs., say, an artist who is all about beats and effects and whose vocal ability is almost secondary?

I mix the beauty with the funk. It's as simple as that. A perfect combination is the Beauty and the Beast. For Toni Braxton and Vanessa Williams, I do beautiful vocals with a beast track and the combination is perfect. It's something else, some grit, some dirt underneath—and I take it to a whole new level. It mixes beautifully. I can't do something light—that's nothing, especially if they've done it throughout their career. I've got to bring something new, some edge.

How did you become involved with the

—CONTINUED ON PAGE 119

Engineer Jeff Villaneuva on Working With Rodney Jerkins

Only six years after completing his associate's degree from Full Sail, the multimedia, engineering and music production school in Winter Park, Fla., Orlando native Jeff Villaneuva became the right-hand man to superproducer Rodney Jerkins, joining him a year ago as Pro Tools engineer. It started with a chance meeting at an ASCAP event in Orlando, where Villaneuva boldly introduced himself, followed by an invitation to work on a recording session at Jerkins' home studio and culminated in Villaneuva's personal manager, Rick Adams of Image 3 Management, negotiating a hiring deal between Villaneuva and Jerkins.

Prior to becoming part of the Darkchild family, Villaneuva interned at Crescent Moon Studio in Miami and then at Crawford Communications, a post-production house in Atlanta. He returned to Florida to intern for Soundarama, was hired by an upcoming studio called Underdog and later worked with Lauryn Hill in Miami. Now he works exclusively with Jerkins.

"I'm one of Rodney's engineers," says Villaneuva. "He also has a staff in New Jersey. I travel with him everywhere and I also do a lot of research on equipment and new technology, samplers, staying on top of Pro Tools systems and making sure, technically, that everything is possible for him and everything is smooth any time he can create.

"We work as a tag-team. I'm with him as much as possible through the actual creation of any track. A lot of times, I'm on the Tascam GigaStudio, which is their newest sampler, looking for sounds and getting them ready to go. Once the music is created, we automatically go to Pro Tools and do rough mixes on the track before the artist gets there. At that point, we start recording and Rodney gives me a lot of freedom for miking techniques. I used AKG C-12 mics for vocals on Destiny's Child.

"I like to keep outboard gear very simple; less is definitely better. I use a Neve 1081 preamp into a Tube-Tech compressor, directly into Pro Tools|HD Accel 6.4, bypassing the SSL 9000 J Series console. I'm there throughout the recording to do editing, pasting and tuning vocals. We strive to get as close as possible to a final mix without even starting the mixing process so that it's almost complete."

Villaneuva admits that he lives, eats and breathes Pro Tools. "The trend in the industry for people my age is to not work a lot with tape machines," he says, "so digital is my way to go, but I also use a lot of analog outboard gear—mainly tube compressors.

"I strive for speed and efficiency on edits, keeping the artist moving with minimal time between punching in tracks. I often set up a template with 20 tracks for backgrounds, so I'm editing at the same time as we're recording to keep waiting time minimal for Rodney and the artist. It helps me out, because at the end of the session, all I have to do is back up after a long day."

Villaneuva was involved in three Destiny's Child tracks on the new album: "Cater to You," "Lose My Breath" and "Gots My Own." "Lose My Breath" came together at 3:30 a.m. and despite the unusual hour, Villaneuva thoroughly enjoyed the project. "When we were actually doing the song with the girls, everything was done on the fly—from creating the music to writing the lyrics," he says. "Rodney is a melody king and a producer who can pick melodies and riffs, so a lot of times, we'd go in and lay down quick ideas. He'd say, 'I like that, let's take this part.' Just by doing everything spontaneously, he already has a vision of how it should sound, which makes my job easier.

"The girls were very involved, too. They collaborate a lot with Rodney and there is a chemistry going on. They were very relaxed and trusted him with their sound. When each one came in to do their parts, they had a feel for the song and were able to interpret it without having to worry about a bad mix or vocal paste since it was already done. They're very professional. They do their thing in one or two takes and work very quickly. They're perfectionists. Beyoncé would cut a take, we'd hold it and she'd want to do it again. She'd top the one we were holding and would just floor everyone in the studio."

—Elianne Halbersberg

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BY BREEAN LINGLE

Dave Harris

Studio B Mastering Takes Charlotte From Bankers to Punks

Welcome to Charlotte, N.C., a traditional Southern town that has made its name as one of the nation's banking centers, a locus for Big Tobacco "where the Bible Belt buckles." Amid the air of conservatism, a community of recording artists continues to thrive and build careers on a national level. While North Carolina–based band Southern Culture on the Skids, perennially touring alt/country group Cast Iron Filter and local country outfits Two Dollar Pistols and Trailer Bride keep the country/rock scene going, it's the recent surge in the popularity of punk, a local devotion to a wide range of genres from gospel to melodic hardcore and indie label support that now define the region's music.

A steady force in Charlotte's recording community with an eye and spirit for independently minded projects, engineer Dave Harris opened Studio B (Mastering, www.studiobmastering.com) some 14 years ago and has watched the changes take place in his city. "These days, I don't have to say Charlotte, North Carolina. I can just say Charlotte," he notes. A healthy flow of mastering clients, ranging from local to international artists, was the catalyst for him to grow and improve his facility, which opened in September 2003 across the street from the smaller original location. Russ Berger of Russ Berger Design Group, who had consulted with Harris about his plans five years before the actual re-design, worked alongside Harris for the duration of the project.

The new space, a "4,600-square-foot, '60s-style, barrel-roofed warehouse" borders the city's retail and industrial districts. "My goal was to build, from scratch inside an existing space, something that was specifically made to be the ultimate monitoring environment," Harris says. "I wanted something that sounded great, but that was also great-looking [with] a very relaxed atmosphere. I wanted a fun place to work in every day. And it turns out that the things I like, my clients do, too." That existing space also includes several offices in the front of the building (rented out to a studio tech, a small record label and a local music producer, among others) and 2,800 square feet of open space in back.

Measuring 19x26x12 feet (WxDxH), the mastering suite itself was constructed with heavy-duty bass traps in the corners and pyramid diffusers that double as architectural and lighting accents; RBDG also provided sound isolation on the walls and ceiling. Harris outfitted the suite with a Crookwood custom mastering console, which was built to spec four years ago and has been in use at Harris' place ever since. "It has some routing capabilities I really like," Harris explains. "It's very transparent-sounding and it doesn't get in the way—the best thing about it is that you don't know it's there."

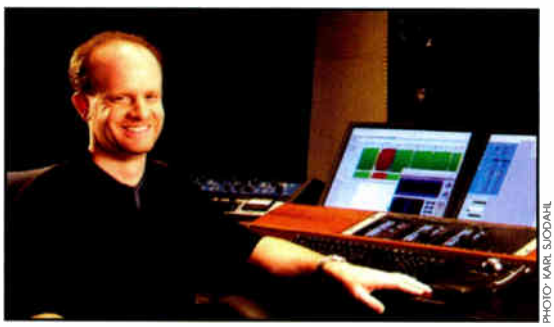

PHOTO: KARL SJODAHL

Master of Studio B, Dave Harris

The suite is further equipped with a Pro Tools MIX system and a SADiE 5 workstation, with Dunlavy SC V monitors powered by Cello Performance II amps. Harris admits to having expensive taste in outboard gear, collecting such items as Apogee AD-8000 SE A/D and D/A converters, Manley Variable MU Tube and Tube-Tech LCA 2B tube compressor/limiters, Millennia Media NSEQ-2 Twin Topology parametric equalizer, Manley Massive Passive parametric tube equalizer, Waves L2 digital limiter, Crane Song HEDD 192 digital signal processor and an Ampex ATR-102 ½-inch analog tape recorder, which was recently restored and serviced by Mike Spitz at ATR Services.

Surrounding the mastering room, RBDG plotted out a centrally located machine room, a lounge, a kitchen and support spaces for client comfort. As Harris says, "Everyone wants to be treated a little bit like a rock star, whether they are or not."

Harris, who started his career as a musician and moved into the recording side after attending Berklee College of Music, has worked as a mixing and tracking engineer, producer and MIDI programmer. Now he's a mastering engineer with a healthy list of credits—from projects with members of '90s main-streamers Hootie & The Blowfish to irrepressible rockers Southern Culture on the Skids and Reverend Horton Heat. Other clients include respected indie labels Yep Roc (Graham, N.C.), Trust Kill (Tinton Falls, N.J.) and Victory Records (Chicago); producers Bill Szymczyk (The Eagles), Brian Paulson (Two Dollar Pistols) and Steve Haigler (Hopesfall); and mixers Ed Stasium (Reverend Horton Heat) and Mark Williams (Catch 22, Cast Iron Filter).

Harris plans to stay with mastering, saying, "There's something about the completion [of these projects] and the excitement that is there during the last day or two of the process. To experience that several times a week is fun. That type of listening to the overall picture just suits me." ■

Breean Lingle is an assistant editor at Mix.

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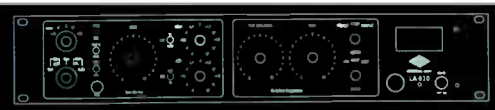

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World Radio History

BY DAVID WEISS

The Hidden Sony Masters

In-House Collaboration at the Mix Level

It's hard to hide when you're a music industry giant, but Sony Mastering has done a great job of just that for at least a decade. As with the other divisions of Sony Music Studios residing on Manhattan's West Side, there's been precious little public information about one of New York City's most highly advanced facilities, where the rooms are labeled from Studio A to Studio Z and keep on going from there.

But Sony is lifting the veil that surrounded its audio powerhouse for so long and is giving *Mix* an exclusive first look at the people, philosophies and technology that make up Sony Mastering. When you consider the collection of brains, ears and gear that make this place hum, it's a look well worth taking.

Occupying an entire floor of Sony's complex, Sony Mastering is a heavyweight of a mastering facility. Featuring six distinctive suites and intense networking that connects them to four of Sony's mix studios for two-way transfer of audio via analog, digital and Ethernet runs, the rooms are set up to be an integral component throughout the production process—not just the final stop. The result is an uncommonly fluid music production atmosphere that keeps mixing and mastering as closely linked as possible, whether the format is DSD, 5.1 or just plain stereo.

The fluid workflow springs from the senior mastering engineers themselves: Vic Anesini, James Cruz, Vlado Mellor, Joe Palmaccio, Darcy Proper and Mark Wilder. Along with resident audio expert David Smith, VP of Sony Music Engineering, they form a highly familial staff, as evidenced in a roundtable discussion that the busy group gathered for.

Sixteen-year Sony vet, Vic Anesini (Aerosmith, Bob Dylan, OutKast, Johnny Cash) works on a GML/Sony analog transfer console. His room also hosts numerous pieces of outboard gear and Dunlavy and Sherwood amps.

Vlado Mellor joined CBS Records more than 30 years ago, with multi-Platinum credits for Celine Dion, Julio Iglesias and the Red Hot Chili Peppers. At Sony, Mellor works on a Neve digital transfer board with Neve and Prism parametric EQ, while his mixes are heard through PMC monitors and subwoofers.

Palmaccio kicked off the conversation. "Mastering is paralleling the music business in that it's a challenging time right now," he points out. "You have the same hurdles: Budgets are smaller, there are fewer releases now than 10 years ago, and because of the technology, there's more people doing it with more mastering studios. So it's always a challenge to differentiate yourself. One thing that's different about this group is the years of experience here. This is an amazingly talented and diverse group of people, and it's not just that we have experience, but we have *varied* experience."

"I think the concept of a major label–sponsored project is going the way of the dinosaur," Proper says bluntly. "It's people putting out small releases, and the people putting the projects together aren't aware of the needs for mastering. They're creating things in their home studios and they don't know there's an additional layer of polishing that needs to be done."

"These are rooms for someone with 25 or 30 years' worth of listening experience," Anesini explains. "With the amplifiers and speakers that are here, that's my home away from home. It's not like a mix engineer who will go from New York to L.A. and room to room. We don't have that variable. I know what it's supposed to sound like."

The most senior member of the group, Mellor, agreed that re-education is necessary for the mastering industry to continue to grow. "There's a whole new generation of engineers who grew up on PlayStations and workstations," he says. "They now understand it's a very impor-

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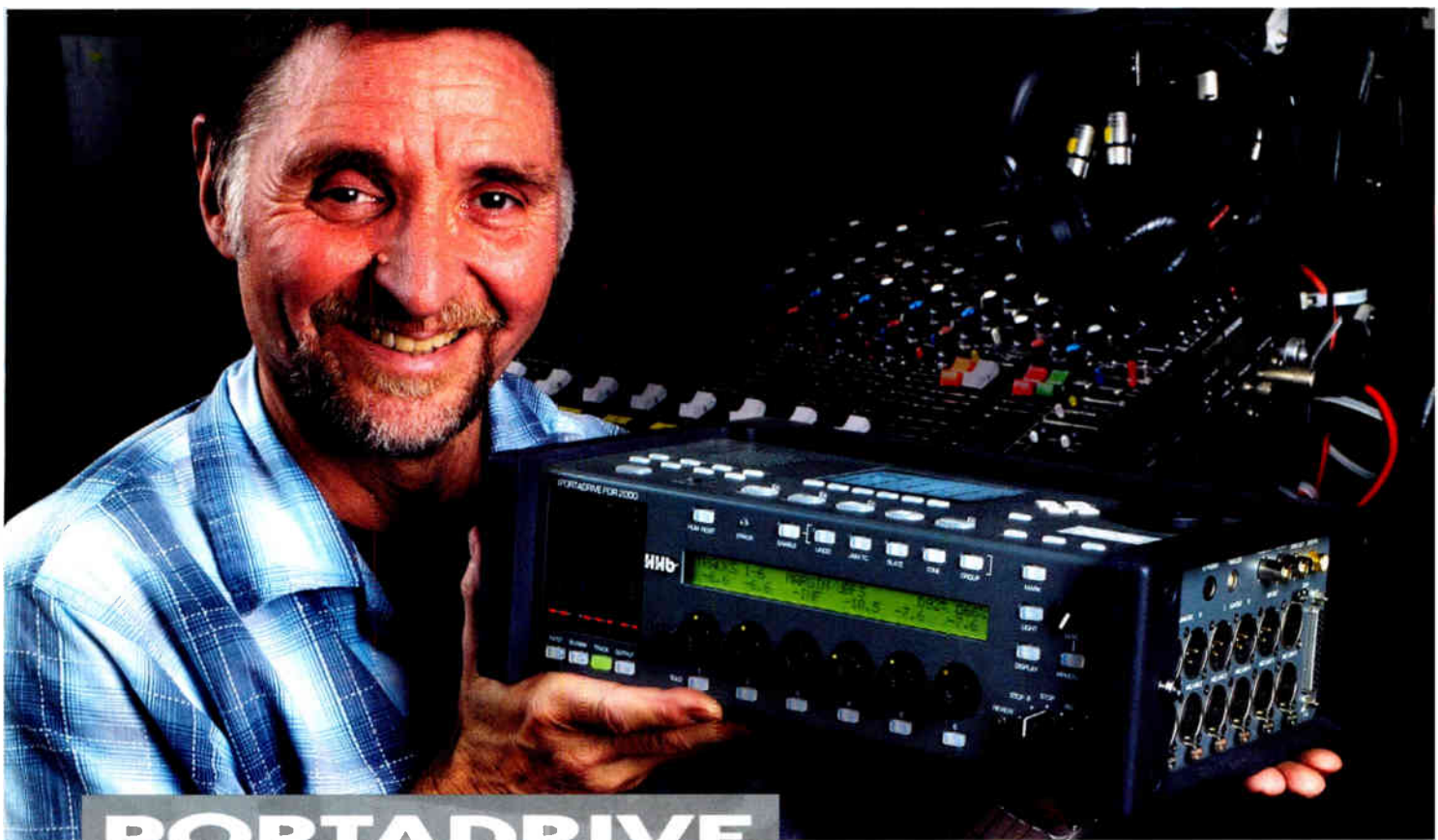

With movies including Troy, About a Boy, Sleepy Hollow and Star Wars (Episode VI) to his credit, award-winning sound recordist Tony Dawe is at the forefront of production sound mixing for film and TV.

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FIRST WE LISTEN

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Lacquer cutting expert who came to Sony from The Hit Factory Mastering, James Cruz (Wu Tang Clan, Juvenile, Montell Jordan) works on a Prism DREAM, with Lavery Engineering D/A, Z-Systems EQ and a Neumann lathe.

Former editor/engineer at Sony Classical Productions and 5.1 mastering engineer (Porcupine Tree's In Absentia, *Steely Dan's* Everything Must Go *DVD-As), Darcy Proper's room includes custom Sony Music Engineering/George Massenburg console, Dunlavy SC-IV loudspeakers powered by Krell amplifiers and numerous outboard gear.*

Three-time Grammy winner—who has mastered LPs for James Brown, Hank Williams and Parliament Funkadelic and SACDs for Norah Jones and Miles Davis—Mark Wilder relies on an SPL-proprietary console. Other gear of note includes Mastering Lab tube line amps, ATR-102 2-track with tube option and Duntech Princess monitors with Spectral amplification.

tant process—they can finalize everything on their DAWs—but they come to a mastering room and they're totally blown away by what can be done. Producers know what mastering is, but there's a whole new generation coming in who think they can do everything with their plug-ins."

The Sony plant is the opposite mindset. With the mastering facility built at virtually the same time as the other 55 rooms at Sony Music Studios, there is an extreme amount of connectivity, allowing many of the engineers to see and talk to each other. The result is a highly flexible mastering system that can be individually tailored from engineer to engineer and project to project.

"Every one of our rooms is unique in that it's set up for the individuals who work there," Palmaccio notes. "When I dream up something and I need a different workflow or system, I can make it happen with the resources of this facility. We have custom consoles, proprietary clocking systems, power conditioning—all of these things that go into what makes systems. It's not just having a Weiss EQ or whatever; it doesn't work like that."

and compression, but a lot more of my signature in the mix."

Although each member of the team can handle virtually any job in the facility, each also has different approaches. "Everyone here has their own style," Cruz observes. "They go through different ways to get the final result, but there aren't seven different islands here—there's one big island and we're all sharing. We all compare notes on what's going on. I do a lot of lacquer cutting for records, while Vic does a lot of EQ'ing for lacquers that need to be cut. We talk about what EQs work best for that because they don't all translate well, and we'll make EQ fixes on the vinyl cutting."

"What makes this group special," says Palmaccio, "is that they've set up an environment where this is a non-competitive group. We really care for each other and [our] careers, and we share information. I'll say to someone else here, 'I want to try this procedure,' and I become aware of the pitfalls. This place allows us the latitude to do that, and that's the reason we can go from gospel to hip hop or metal to classical."

Whether you're talking about sharing

Album remastering guru (Grammys for The Complete Hank Williams *and* Martin Scorsese Presents the Blues, *as well as surround work for Alicia Keys, Luther Vandross, G3 and Chevelle) Joseph M. Palmaccio's suite is outfitted with a David Smith custom analog board, numerous pieces of both analog and digital processing, a Sequoia DAW, an Ampex ATR-102 and Dunlavy speakers with Classe amps.*

According to Wilder, the maximum networking approach is paying off. "I have a client who loves the concept of mixing and mastering simultaneously," he confirms. "He really enjoys sitting in a room he's familiar with with someone that he trusts—me. We'll take a mix and I'll start playing with it trying to get the right sound. At that point, maybe I'll say, 'We need to bring the horns up,' or, 'The drums need to be re-EQ'd.' Then we get the mix room on the phone and tell them what we want. This way, we can bring the mix and master along simultaneously. There's much less of my signature with EQ

files, mixes or wisdom, Sony Mastering has taken advantage of its deep resources to create an extremely powerful mastering environment. For the people who occupy the suites, it's a unique opportunity to work with music in a way that's academic and aesthetic at the same time. "We hold an envious position," Wilder concludes. "It's six or seven rooms here, whereas most facilities are one room, so who do they share with? There's a collective vocabulary here that everyone shares and it's beautiful." ■

David Weiss is Mix*'s New York editor.*

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BY BARBARA SCHULTZ

Airshow Mastering

Sister Studios Combine Friendship With Top-Notch Audio

You've probably seen Airshow Mastering in the pages of *Mix* before. Glamour shots of the company's freshly designed studios showcase cutting-edge gear and the elegant, state-of-the-art-surround design work of acoustician Sam Berkow of SIA Acoustics. But the pictures belie a down-to-earth approach to mastering—and to music in general.

The brainchild of engineer David Glasser, Airshow made its debut in 1983 in Springfield, Va. Glasser's career in audio has been long and varied, including years of live recording and broadcast work for National Public Radio. He began working with Charlie Pilzer—now chief engineer of the Springfield studio—when musician/technician Pilzer focused more on producing and used Glasser's services to master his clients' projects. When one of those projects exhausted its budget, Glasser generously taught Pilzer to edit and master his own recordings and made his studio available to Pilzer during off-hours. The two became partners, growing their business.

Together, they earned Grammys for their mastering/restoration of the Smithsonian's *Anthology of American Folk Music* (1997). Also in that year, Glasser informed Pilzer that he was planning to move and build a new studio in Boulder, Colo.

"By then, I knew that the studio was more than just me," Glasser says. "We had a lot of really great loyal clients who came to Airshow in Springfield, whether or not I was there. Some clients followed me to Boulder, but Charlie has his own clients."

Pilzer was surprised by Glasser's decision, but he says he soon came to understand. "The big decision at that point was whether to keep the business together or split it up and be two companies. We both realized that, having worked together, it's really hard to be a one-person shop. There are still a lot of projects that David and I work on together, where part may be done in Colorado and part will be done in Springfield. And a big part of it is I don't want to be in competition with David. It's much better for us to work together."

Glasser built the Boulder facility in part of an existing building, and two years ago doubled the area by leasing an adjacent space. The new rooms were designed by Berkow, and the existing ones were redesigned, resulting in an integrated, state-of-the-art suite of rooms. "The goal," says Glasser, "was to build a new large mastering room that was designed from the ground up for surround. We also wanted to broaden the services we were offering, so we added two control rooms and a small overdub booth. One of the control rooms is now rented full-time to a local producer, Scott Smith; the other we called the 'Home Away From Home Room,' and it's basically a great-sounding little control room with a 5.1 monitoring system. An engineer or producer can rent it by the day or week and bring in their own stuff."

PHOTO: TIM MURPHY/FOTOIMAGERY

Airshow Mastering's family at their "Home Away From Home Room," clockwise from left: David Glasser, general manager Ann Blonston, James Tuttle, Dominick Maita, Charlie Pilzer and Matt Sandowski

Since moving to Boulder, Airshow has been seriously involved with SACD mastering. "Since the introduction of the format, we've mastered more than 100 stereo and multichannel SACDs," Glasser says. "This is an area we've worked hard to develop. SACD and surround were the impetus behind building Studio C."

Glasser fitted himself beautifully into the local music scene. He masters new recordings for local rock acts such as Big Head Todd & The Monsters and Leftover Salmon, and groups that are selling their live shows on the Internet. "We've mastered about 120 shows for String Cheese Incident," he says, "and, recently, they moved from pressed CDs to making shows available for download."

Airshow also continues its significant work in audio restoration, including the recent Dust to Digital gospel compilation *Goodbye Babylon*, a six-CD set of recordings from the 1920s through the 1950s featuring performances by Mahalia Jackson, the Louvin Brothers, Hank Williams and more.

Glasser works with a number of other talented engineers: James Tuttle provides location recording services and assists with operations; Matt Sandowski, a local engineer and jazz guitarist who won a Grammy for his audio restoration work; and Dominick Maita, who left New York's Sterling Sound to join Glasser. "Sam [Berkow] redesigned one of our existing rooms here for Dominick," Glasser says, "and he just moved all of his equipment in, duplicating the setup he was using at Sterling."

"What we do is a mix," Pilzer says. "Probably two-thirds of what I do is new music. I do classical editing. I have a long-term relationship with several local artists. I do rock 'n' roll, acoustic music. It's something new every day."

MIX ONLINE EXTRAS

Barbara Schultz is a contributing editor to Mix.

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Sound Lounge

Racing Technology, Growing Its Business

By David Weiss

PHOTOS: TONY DAVID

Sound Lounge co-partner/sound designer Marshall Grupp in Peter Holcomb's Studio B

What's the key to being a successful audio post mix house in New York City? While there are a lot of facilities struggling to discover the answer, Sound Lounge (www.soundlounge.com) clearly figured it out some time ago: Envelop your clients in luxury, creature comforts and a fun atmosphere. While you're at it, develop great mixers and give them highly advanced rooms in which to work.

"We've maintained the same philosophy as when we started six years ago," says Marshall Grupp, co-partner and sound designer of Sound Lounge. "We wanted to keep this like a family environment—very personable. We thought four rooms was a way to achieve success and support ourselves, but as you become more successful, more people want to come to you and you have to start thinking about expansion. And because we had so many talented people—not just our mixers, but our machine room people and other staff—the growth was really because of demand."

That might sound like a lot of hype, but the fact is that since the company's inception in 1998, Sound Lounge has doubled in size to eight mix rooms and increased its staff from 12 employees to 40, while many other New York City audio post houses have been forced to downsize or go out of business. Besides having a good location in the Flatiron district, a huge lounge, in-house chefs and extremely attractive suites for mixing TV/film and radio, Sound Lounge has a firm grasp on its clientele's workflow, audio needs and expectations—assets that have won it clients like Pepsi, IBM, Nextel, Visa and 7-Up.

"Especially in the commercial business," says mixer Tom Jucarone, who is also president of Sound Lounge, "it's [about] being able to deal with people who have different opinions and different insights of the way a commercial should work and then put the music together in ways that meets that. In commercials, you're not just mixing, you're an editor, sound designer and mixer and you have to make all those elements work. It's a burst of energy because you're not just making music louder or softer. You could be making a new music track and making it all work together. Everything is planned out to tell a story."

Sound Lounge president Tom Jucarone at the Fairlight DREAM Station in his mix suite, Studio A

PICKING UP THE PACE

To accomplish these goals, Sound Lounge has to match the industry's current breakneck pace of technological development if they're going to keep mixers Jucarone, Peter Holcomb, Rob DiFondi, Rob Sayers, Philip Loeb and Glenn Landrum well-equipped and as future-proofed as possible. The job of overseeing two floors and all eight mix suites (four of which are 5.1-capable), the sound design suite, casting room, stock music room, two machine rooms and two Internet/Intranet file-transfer rooms falls to chief engineer John DeMaio, who has already seen a great deal of change since being hired as Sound Lounge's first official employee. "I'm not sure where audio post is going technically, but it's going there fast!" DeMaio states. "If you blink, you'll miss it. The technology to

—CONTINUED ON PAGE 60

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Crazy Cars and Man-Eating Leeches

Creating *Lemony Snicket's* Peculiar Sound

By Blair Jackson

If you've never heard of *A Series of Unfortunate Events*, chances are you don't have a young reader at home. The brainchild of San Francisco author Daniel Handler, writing under the *nom de plume* Lemony Snicket, the *Series of Unfortunate Events* books—currently numbering 11—have sold many millions around the world during the past five years and have inspired a rabid following of nearly *Potter*-ian proportions. The books follow the seemingly endless misfortunes of the orphaned Baudelaire children (a teen, a 'tween and a baby) as they try to survive in a world of cruel, greedy and quite stupid adults. Snicket narrates the Baudelaires' adventures with the mock gravity of some 19th-century British writer, but in fact, the books are quite clever and amusing. The simple black-and-white illustrations by Brett Helquist depict an undefined time—it could be the 1910s or '20s, yet there are machines and vehicles that are not of that time—or any time, for that matter.

It fell to Brad Silberling, director of *Casper*, *Moonlight Mile* and a slew of TV series from *Felicity* to *Judging Amy*, to bring *Lemony Snicket's A Series of Unfortunate Events* to life on the big screen. Drawing from the first three books of the series, Silberling opted to create the Baudelaires' universe completely from scratch: Instead of finding real locations that might be appropriate to the stories, he chose to shoot the film on sets. Using Helquist's illustrations as a jumping-off point, production designer Rick Heinrichs (who worked on the fanciful Tim Burton film *Sleepy Hollow*) and art directors John Dexter and Martin Whist have given the film an utterly unique look. Jim Carrey was cast in the role of the nefarious guardian of the orphans, Count Olaf, and Meryl Streep, of all people, was brought in to portray the protective Aunt Josephine.

PHOTO: PATRICIA LANZA

PHOTO: COURTESY PARAMOUNT

"The author has created a fully realized world, and I think Brad Silberling has really succeeded in making it his own and putting it on film," comments sound designer and supervising sound editor Richard King. "Brad has a great eye and there's a very cohesive look to the film. It's almost a throwback to classic Hollywood films like *The Wizard of Oz*, because it was shot entirely on soundstages using some forced-perspective sets to achieve a feeling of size and distance. Much of the film was shot in a mothballed Boeing facility in Downey [south of downtown L.A.]—the production crew built three of the larger sets in a gigantic hangar where the space shuttles were assembled. Brad was going for a particularly stylized look; obviously, it wasn't done to look totally convincing. The most difficult challenge with the sound was

Supervising sound editor/sound designer Richard King in his studio

World Radio History

striking the right balance between scary and fun, as it needs to be both to some degree."

King, who earned an Oscar last year for his sound work on Peter Weir's *Master and Commander* (see *Mix*, December 2003), notes that Silberling "had a lot of specific ideas as to the tone he wanted to set. He has a great ear and thinks a lot about sound even while he's shooting. That vision changes and evolves, of course, but he's quite good at seeing in his mind's eye the finished movie as he's shooting it, and that's one of the movie's strengths. It ultimately feels like the vision of one person who knew what he wanted."

The film was shot between October 2003 and May of this year, with Pud Cusack handling the production sound. Though one might think the soundstage would be a highly controllable environment, King says that Cusack had her work cut out for her: "There were a lot of fans running and a number of sound issues beyond Pud's control because the set in Downey was not a true soundstage so there was a lot of ambient noise. When you're in a scene in a rowboat in the middle of a lake and there are fans and generators running in the background, you have a problem. Still, we ultimately didn't have to do that much ADR. Most of the production sound proved to be usable."

On location in Downey, Calif., with one of A Series of Unfortunate Events' "oddball cars."

While the shoot was happening, King talked to Silberling about sound ideas for some of the film's unusual vehicles and for some of the more complex set pieces, such as one in which Aunt Josephine's house tumbles off a high cliff into Lake Lachrymose. "The Aunt Josephine character is obsessed with safety, yet she lives in a house perched over a lake that's filled with man-eating leeches," King says with a laugh. "This house eventually is blown away in a hurricane, so we wanted to record some new house demolition effects. In fact, we'd been looking for a suitable structure for months and we finally found one right down the road in Burbank, of all places, and we've spent the last week demolishing it. We placed mics all over the house and used large hydraulic jacks to lift the house up and drop it, popped up large sections of the floor, toppled walls, et cetera. We also chopped down a large dead tree in the backyard and let it fall on the house, giving us a huge crash and thud. There were a lot of other sounds connected to that [scene], too. The house sags over the cliff and all the house's contents—the refrigerator, stove and furniture—practically come to life, screech toward [the children] and try to knock them down, so we spent a day and a night rolling and crashing appliances around and recording that."

As for the carnivorous leeches, "We spent a day in a pool doing lots of little swimming and splashing sounds with fishing rods and other props, and then we tried [mixing in] some animal sounds and ended up doing a lot of human vocal sounds that we pitch-shifted and manipulated and twisted in Pro Tools. It may seem obvious, but you can often put more emotion into a sound if it's just performed by a human rather then painstakingly forged and shaped from other sounds."

King's principal effects recordists were Eric Potter and John Fasal (both of whom worked on *Master and Commander*). Michael Mitchell and Hamilton Sterling were the effects editors on the show. For this film, King and crew decided to use the new HHB Portadrive 8-channel hard disk recorder for effects, which allows for up to two hours of 8-track 24/96 recording and nine hours of 4-track 24/48 recording. "On *Master and Commander*, we used Devas and DATs and we were really happy with them," King says, "but the beauty of the HHB, which has only been on the market a few months, is that it's more channels and it's 96k, which allows us to record and subsequently manipulate the sounds at a higher sampling rate, which helps to maintain clarity."

Another challenge for King and his team were the unusual vehicles in the story: a pair of "oddball cars," as King puts it, a bizarre boat and a train. "They found these very strange cars for the shoot," he says. "One was a Tatra—a Czechoslovakian car from the early '60s—and the other was a heavily modified stretch Chrysler from the '60s. The cars used in the film were operable and they both sounded unique, so we ended up recording them and using them pretty much as-is for the film. When they show the movie in Czechoslovakia, everyone will probably say, 'Oh, it's a Tatra, what's so unusual about that?' But in America, they'll see that the car looks odd and the windows are a peculiar shape." Plus, they've been modified to have other gadgets in them: "One of the cars has an old mini-Nagra open-reel recorder in the dash. All the mechanisms and devices are created with a sort of Edward Gorey look—20th-century gothic. At the same time, some things are oddly familiar. There's a scene where Count Olaf locks the doors to his car and it beeps with the normal beep you'd hear on a modern car alarm. Brad loved the contrast of having this normal car alarm beep with the completely bizarre vehicle.

"There are places where the sound is oddly simple, where [Silberling] is going for a mood or feeling rather than going for the literal sound of the environment. And sometimes it's funnier if you've got a device or contraption and the sound is one or two clever sounds instead of a big complex mechanism. There's a scene in the film where [the children] are crossing Lake Lachrymose in a ferryboat. They're in a car that's on the ferryboat, and when we cut outside, we see that it's just a driver reading a newspaper who's peddling a gigantic paddle wheel. It's a guy on a stationary bike with this giant paddle wheel beside him, so

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Photography: Ed Freeman

World Radio History

we made the sounds very simple to accentuate the ludicrous image. It's meant to be a little magical and out of the realm of reality—it's a parallel universe."

As is the case with so many films today, the sound editors were hampered somewhat by having to work on scenes featuring CGI effects that were delivered late and in various stages of completion. King has been working with effects re-recording mixer Anna Behlmer, "pre-dubbing for weeks and weeks and weeks," he says. "It's a very complicated film on every level. A big visual effects show is a moving target as the effects shots change as they evolve toward the final version." If Behlmer is onboard, re-recording mixer Andy Nelson usually is, as well; he handled the dialog and music mixing. Additionally, Michael Magill and Hugo Weng were dialog editors, Chris Flick supervised the Foley and Linda Folk was the ADR supervisor. The film was mixed on a Neve DFC at the Howard Hawks stage at Fox Studios. Thomas Newman's score was recorded at Fox, as well.

And though the final mix was still a week away when King and I spoke in mid-October, he was quite impressed by the craftsmanship that had already gone into the film. "It's a cool movie for kids," he enthuses, "because it's scary—which they like—but through their own talent and cleverness, the kids ultimately prevail. The children are the wisest characters in the movie. The adults are either evil or stupid, which I think confirms a lot of kids' deepest suspicions about the world. And, of course, the door is also left open for a sequel."

Three books down, eight to go! Can you say "franchise"? ■

Blair Jackson is Mix*'s senior editor.*

Sound Lounge

—FROM PAGE 56

manipulate audio is amazing compared to five years ago. The systems we had five years ago are long-gone. When we're done with the next mix room, nothing here will be over two years old."

The fast-forward progress of production technology has led to a change in client expectations about the length of their sessions. "What they care about is speed," maintains Grupp. "Look at our schedule: Sessions are going two or three hours, whereas before, it took a day to do a 30-second commercial."

Thanks for the compliments, Eric Clapton & John Mayer

"I've kind of mucked around with that AdrenaLinn – the Roger Linn piece. I think that's a fabulous piece of equipment...it's got some great sounds."
– **Eric Clapton** from Vintage Guitar magazine, June 2004

"I started messing around with the AdrenaLinn and very soon found this combination of the beat and the arpeggiator. I've never heard a guitar do that before. I just stayed there in that room for like two or three hours...I remember thinking to myself, this is really strong, this really makes me feel good."
– **John Mayer** from UK's Guitarist magazine, November 2003, on creating his hit "Bigger Than My Body"

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"As the technology got faster and faster, so did the sessions," DeMaio says. "Using tape machines, you had to wait, but now you put the cursor there and you're editing. The speed of the computers is increasing and the result is the ability to play more and more tracks simultaneously and do more and more edits instantaneously. Now, all of the new systems run on the G5's 2.2GHz systems, the drives are now running on 60 Mbps and the speed of everything just keeps getting faster to the point that you're rarely waiting for a computer to do anything anymore, and they don't crash. So you want to be the fastest, but you also want to be good."

DeMaio wisely headed off a game of connectivity catch-up when he first wired Sound Lounge. "We were anticipating HD when the facilities were built and we wired for HD video," he says. "We looked 10 years into the future six years ago so we wouldn't have to rip out all the wiring that makes it work. Even in a year or two, the infrastructure is more than ready to handle all the HD stuff that's out there."

While Sound Lounge hasn't been overwhelmed with surround jobs, the 5.1 workload is slowly increasing. "Right now, it's coming from HDTV," Grupp observes. "As more and more HDTV comes out, the commercials are getting made, so that's another avenue we're starting to go down. We're getting more and more cinema spots, where the commercials are in the theaters."

The engineering staff has also kept pace with customers' media delivery preferences, which are strictly electronic. "So many of our clients are not bringing us 'things' anymore—we're getting files over the Internet. Before, everything was tapes, DATs and DA-88s, and the only reason we had Internet access before was so clients could surf the Web. But now, 90 percent of the stuff we use comes over the Internet. We have two networks running simultaneously and are isolated from each other. One is the Internet, where everything comes in and gets scanned for viruses, and then they go to the Intranet. We're almost tapeless here—the clients prefer it. When things are done here, we start FTP'ing or e-mailing QuickTime movies of our spots. So we're really using the Internet a lot now, although we haven't started using it for [uncompressed] video. We're seeing who comes up with a good way to move video. Those are huge files compared to audio."

Sound Lounge's networks also make it convenient for each mixer to share projects and sounds once they're on the Intranet. "It's on a server that every editor can see," DeMaio adds. "[An editor will] grab it and put it back, so we do a lot of file sharing around here, which we didn't do when we first started." SoundLounge has two terabyte databases: One is used for backup and archiving, and the other hosts a huge sound effects library with a Soundminer engine and mSoft database. "Every editor can sit while they're in a session, type in what they want, thousands of choices come up and they can drop it into Pro Tools," says DeMaio. "Before we went to a networked sound library, one sound effect could take 20 minutes, but now it takes under a minute."

LOOKING BEYOND POST

Residing on Sound Lounge's more recently developed downstairs floor is an unusual facility, Sound Lounge Radio. While radio is generally treated like a shameful outcast in media production, Sound Lounge has invested in a full-service center that includes mixing, concept, development, sound design, stock and original music, and voice casting. "I think it's a natural extension of any audio facility," says Grupp. "If you only do TV, that's not good. Radio is a logical choice of expansion for any audio facility. We believe it's even more challenging because you're painting pictures with sound. But we feel we brought in a whole team for the agency side—a really strong group of people who could bring the dream alive."

But even these guys want to get out of the studio once in a while. By adding location recording to their list of services, they've done just that for clients such as Coca-Cola and Nike, equipped with a remote Pro Tools|HD system run by a Mac titanium laptop.

"We're the only ones doing location," Grupp states, "but it was generated by a creative vision rather than a technical thing. This was about saying, 'This is a cool idea, why don't we go out and do it?' and then finding the clients that say the same thing."

By extending their creativity beyond simply how they mix and applying it to how they do business, Sound Lounge has emerged with bragging rights as one of the certifiable heavyweights in a town that chooses its champs carefully. "New York City is still the home of the advertising industry," Grupp says, "and hopefully the majority—and a lot of the great work being done in the country—is taking place here. When we started, there were nine or 10 other places out there. Now there's two or three. We supply a great service and we have a group of really talented people who are really dedicated and care about their craft. That's how you get to be big." ■

World Radio History

Top 10 Live Sound Picks from AES

By Mark Frink

AES isn't just a recording show. This year's convention was packed with goodies for the live engineer. Here's my Top 10 fave picks.

Allen & Heath (www.allen-heath.com) introduced the ML3000, a budget desk with unexpected features such as eight VCAs, eight mutes, eight auxes, LCR panning with an extra "depth-of-center" pot, a 7x4 matrix and highpass filters tunable to 400 Hz.

Aphex's (www.aphex.com) Model 230 Broadcast Talent Voice Processor (aka "kitchen sink") throws every trick in the book at a vocal mic. This single-channel unit includes the company's RPA tube mic pre, Easyrider compression, Logic-assisted gating, a threshold-adjustable de-esser, parametric EQ, and Aural Exciter and Big Bottom effects. Finishing it off are 24/96 A/D conversion and an insert point should you need a bit more analog mojo.

DiGiCo's (www.digiconsoles.com) new D1 Live digital console has the features of the D5 Live but in a smaller, lighter package with a 25-fader control surface and a 40-bus DSP engine. As a replacement for analog desks with copper snakes, 40- or 48-input versions come with a single DiGiRack at the mix position. The 48 "Dual Rack" model comes with a MADI card with a 100-meter coax digital link from stage and AES digital I/O ports. Both 48-input models have 16 extra insertable processors, each with six bands of parametric EQ, compression and up to a half-second of delay. Finally, the D1 Live 56EX is the fully enabled 56-input version connected to its stagebox via 150 meters of fiber-optic cable.

Digidesign (www.digidesign.com) dove into the live digital console fray with VENUE, its digital mixing system that supports up to 48 inputs and 48 outputs in each stage rack. The basic control surface has 8-input and 8-output banks on either side of a master control section that incorporates a super channel. Adding sidecars increases the surface to 56 input faders. In addition to onboard EQ and dynamics, plug-in software can be installed to employ almost any studio effect, controlled either onscreen with the trackball or using assignable encoders. A FireWire option allows 18 Pro Tools LE tracks to be recorded onto a Windows XP laptop, with plans for 32 LE tracks and a Pro Tools|HD link next year.

L-Acoustics' Kudo

Drawmer's (www.drawmer.com) DSL 424 2+2 provides two channels of frequency-conscious gating from its 404 and two channels of 441 comp/limiters in a single rackspace. Perfect for kick and snare inserts.

L-Acoustics' (www.l-acoustics.com) new Kudo speaker was the talk of the show. Combining the functionality of the company's V-DOSC and ARCS speakers, it can build either horizontal or vertical arrays. "Side vanes" provide out-of-array dispersion of 50° or 110°, and the vanes can be used single-sided or in a section of an array to create asymmetric coverage. Kudo's three-way design employs dual 12s crossed at 300 Hz to four 5-inch mids in the expected V-shaped center configuration crossed at 2 kHz to dual 1-inch compression drivers. Note: Kudo has no territory exclusivity.

Meyer Sound (www.meyersound.com) introduced the Galileo 616 digital loudspeaker-management system, the "missing link" for the company's self-powered speakers. The unit's 24/96, 32-bit floating DSP provides fixed low latency for functionality that includes CP-10 parametrics, up to two seconds of delay and a 4-band version of the VX-1 virtual crossover. In addition to atmospheric HF compensation and LD-3 subwoofer crossover, Galileo introduces LF Beam Steering to widen low-frequency coverage patterns. SIM-3 will interface with Galileo to automatically select source signals.

Meyer Sound Galileo

Sennheiser (www.sennheiserusa.com) added several "backline" mics to its Evolution 900 Series. The new e901 boundary-layer mic is contoured for kick drum, while the e902 dynamic kick mic is similar to the e602, but with its resonant frequency moved from 45 to 65 Hz for a powerful, more musical feel. The e904 is a compact dynamic mic for toms, and the e905 is a slightly larger dynamic instrument mic. The e906 is the familiar flat, squared dynamic for guitar amps, but now with a 3-position 4kHz presence filter that adjusts from flat to "Silver." The e914 pencil condenser has 3-position switches for pad and LF roll-off.

Whirlwind (www.whirlwindusa.com) added the E Desk to the E Snake digital snake and the E Beam wireless digital light snake family of CobraNet products. This digital mixer-in-a-box is a 32-channel CobraNet processor employing six SHARC chips and a Power PC processor, and works with standard Ethernet switches.

Yamaha (www.yamaha-afc.com) sponsored yet another trade show musical highlight with Take 6's a cappella performance at the Museum of Modern Art, accompanied by a demonstration of Yamaha's "Active Field Control" ambience enhancement system, which turned a brick-walled gallery into a concert hall. Amazing!

Mark Frink is Mix's sound reinforcement editor.

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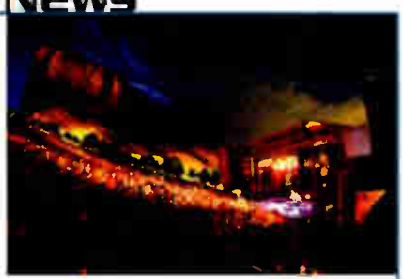
News



Red Rocks Amphitheatre (Colorado Springs, Colo.) installed its first permanent audio system, which included QSC's CX902s, CX502s and CX302s amps.

Lectrosonics contributed $10,000 to support the **NSCA Education Foundation**, including programs such as Project EST (training and certification for electronic systems installers, technicians and integrators) and student memberships. In other NSCA news, the association recently launched a new Grassroots Legislative Action Center for the 2005 legislative session. Go online to use it at www.nsca.org...**The Abbey Club** (West Hollywood) expanded its space to 16,000 square feet. **The Avalon Group's** (L.A.) **Jon Blanchard** installed **MacPherson** loudspeakers. Eight M2Xs and three Scholar 118 subs are flown and are driven by **QSC PL236** amps...**DiGiCo's** D5 Live console is in use at audio education facility **Full Sail** (Winterland Park, FL) to help teach Show Production & Touring Associate students. School program director **Dana Roun** says, "We have a responsibility to expose [students] to the low, mid and high level of audio consoles."...**The Atempo Group** (Istanbul, Ankara, Antalya) has been appointed as the exclusive distributor for **Midas** and **Klark Teknik** in Turkey; the group also handles distribution for **Electro-Voice** and **Dynacord**. Atempo's **Okan Akbay** says, "Both brands have the advantage of international recognition and reputations built over many decades because they both have an eye on the future."...**Dave Chapman** from **Blaydon Communications** (Newcastle, England) completed an installation for club **Halo** in Leeds. The site, a large 104-year-old deconsecrated Congregational Church, was built in the Gothic revival style and is located near Leeds University. Vaulted ceilings and monolithic stoneware presented unique acoustical challenges. To overcome them, a select and diverse mix of **KV2** (Woodinville, WA) products—EX10, EX2.2 and EX2.5m ES1.0 and ES2.5 and ES1.8 subwoofers—were installed and are controlled by EPAK2500 amplifiers.

Now Playing

Neal McCoy and Band

FOH Engineer/Console: Steve "Sonny" Taylor
Monitor Engineer/Console: Norm Sida
P.A./Amps: Matchless guitar amp
Microphones: Electro-Voice RE1 wireless, RE510 (all vocals), N/D468 (toms), RE200 (brass, overheads, cymbals, hi-hat), N/D868 (kick, bass cabinet, guitar cabinet), Cobalt Co4 (snare top), RE92L (snare, bottom), N/D478 (clav), N/D767a (talkback)

R.E.M.

Sound Company: Carlson Audio Systems (Seattle), Rat Sound (monitor system)
FOH Engineer/Console: Brett Eliason/Midas XL4 and Yamaha PM4000 for support
Monitor Engineer/Console: George Stuires/Yamaha PM5D
P.A./Amps: EAW KF760 (24), KF761 (8), EAW SB1000 subs (16), KF750 (4), KF755 (4), JFX260s (6)
Monitors: QSC PL6.0, 4.0
Outboard Gear: Klark-Teknik KTDN3600s, DN360; BSS Audio FDS-366 Omnidrives (3), DPR-404 (4); TC Electronic M2000 (2), 2290; Eventide H3000DSE; Lexicon PCM90, PCM60; Roland SDE3000; dbx 160A (8), Empirical Labs Distressors (9); Allan Smart compressor; Summit Audio DCL200; Manley Variable-Mu
Additional crew: Allan Bagley, Carlson Audio Systems crew chief, and Mike Scerra, Carlson Audio Systems system tech

Iridium Jazz Club Celebrates 10 Years

The Iridium Jazz Club (www.theiridiumjazzclub.com), the famed New York City venue that features Les Paul and his trio every Monday night, will kick off a 10-year anniversary celebration on December 6 with a new all-Meyer sound system, locale and recording studio.

According to club owner Ron Sturm, "We tried to address the sound issue—it was very, very important—as it's usually something that clubs put a backseat to. [The move to its new digs at Broadway and 51st] was an opportunity to do it right."

Meyer products from the previous facility were retained, and Carl Ferrugia (SI Tech) and John Monitto (Meyer Sound) specified the addition of a single CQ-1 (left and right) and three UPA-2P loudspeakers (center cluster). Delays are UPM-1; a UPA-2P is fill. Handling low frequencies are two 650-P subs. At front of house is a Yamaha 32x8x4 board located in the center of the room so the engineer hears what the audience hears.

The new recording studio offers a Mackie 32-channel 8-bus console, Mackie monitors, dbx compressor limiters and a Rean balanced TRS patchbay, among other gear.

PHOTO: EUGENE GOLDOURSKY

Frank Foster takes advantage of the jazz venue's new audio system during their live performance.

World Radio History

P.J. HARVEY

In what P.J. Harvey has described as one of her favorite cities and venues, her two-night stay at San Francisco's The Warfield at the end of October was spent before an adoring audience. This is her second time playing in the States this year (she played small clubs to kick off this tour and is now hitting the theater circuit) after playing in the UK, Europe and Australia.

FOH engineer Tom Marshall

Vocalist/guitarist P.J. Harvey sings through a Shure 57 and adjusts her own processing. "She uses Boss distortion and delay, which she does herself because she knows what she likes," says monitor engineer Nigel Fogg.

Front-of-house engineer Tom Marshall is using a Midas Heritage 3000, employing 34 inputs and another four stereo ins for effects returns. "We're not touring with a speaker system," Marshall says, "but I carry my own FOH effects and processing and a full monitoring system: desk [another H3000], processing, wedges and side-fills. We pick up the P.A. system in each city." For the Warfield date, Harvey and band were heard through a V-DOSC rig (eight per side: five hung and three floor) with Meyer 650 subs (four per side and two flown centrally).

In Marshall's outboard rig are Drawmer DS201 noise gates (two drum kits) and BSS DPR 404 compressors (kick, snare and bass channels). On Harvey and Josh Klinghoffer's guitars, Marshall uses dbx 160Xs to slightly compress the harsher end. "I also use a dbx 160X inserted on a group to handle the backing vocals," Marshall relates. "For P.J.'s extremely dynamic voice, I use a BSS DPR 901 to smooth out the high mids and then finish it off with an Avalon AD 2044 for overall vocal compression. For effects, I have two [Yamaha] SPX 990s [one for drum reverb and the other for vocal effects], a TC M2000 [for occasional instrument/background vocal reverb] and a Lexicon PCM 81 [on Harvey's vocal reverb].

"Most of Polly's songs are guitar-driven, so I mix with the guitars on top, followed by the bass and drums. Of course, I keep the drums as big and punchy as I can, but without it becoming a traditional drum-heavy 'rock' sound. Most importantly, I keep P.J.'s vocal on top. That's why you go to a gig: to hear an artist sing clearly and to be excited by the music without being hurt by the dB level or painful frequencies!

"What comes off the stage is very raw and intense, and my job is to create a big and exciting sound without taking any of that energy away. Everyone on this tour has been great, especially Nigel [Fogg, monitor engineer], who knows more about touring and P.A. systems than I could ever know."

Photos and text by Steve Jennings

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Dingo, bass/keyboards

Rob Ellis, drums/keyboards

Josh Klinghoffer, guitars/drums

Monitor engineer Nigel Fogg

Monitor engineer Nigel Fogg is also using a Midas Heritage 3000, using the desk's 36 inputs and 10 outputs. He doesn't employ much outboard gear—relying only on Klark Teknik digital EQs, BSS Audio compressors, Drawmer gates and a Yamaha SPX-990—to keep it simple.

"I've been working with P.J. for nine years, so I know the music very well," Fogg says. "She can mix things up a bit, but I'm familiar with it all. She's on wedges and Future Sonics in-ears so she can go back and forth during a show if she wants to."

Ellis' drum kit is miked with Shure 91 (kick), Beta 52 (kick), Beta 56 (snare top), SM98A (snare bottom, rack tom, floor tom, ride), SM81 (hi-hat), SM57 (floor tom) and SM31s (overheads).

Rob Ellis' keyboard setup, which includes a Yamaha SK20 and Roland RS-50, sits next to his drum kit to easily switch between the two rigs.

According to Fogg, the Yamaha QY20, which Harvey plays in "Reeling," is a little writing drum machine that she uses for beats and melody sounds. The QY20 goes through a Boss distortion pedal and a BSS direct box.

World Radio History

By Sarah Benzuly

The Pixies

THEY GOT THE BAND—AND THE ENGINEERS—BACK TOGETHER

Photos by Steve Jennings

In 1987, Ronald Reagan was president, the Soviet Union was still a communist world power and "pop" was the prevailing musical trend. But that was also the year that Boston-based The Pixies was formed. With their wildly eccentric lyrics, explosive guitar riffing and a solid back line, The Pixies helped usher in the alternative music movement that came to symbolize the most adventurous side of '90s rock. (Nirvana, who would receive more credit for spreading alternative music, started around the same time in Seattle.)

But after making four studio albums, creating a huge fan base and earning an opening slot on U2's 1992 Zoo TV tour, guitarist/vocalist Black Francis (aka Frank Black, real name Charles Thompson) announced the band's breakup. Now, 12 years later, the band (bassist Kim Deal—who went on to play with The Breeders, another '90s cult fave—drummer David Lovering, guitarist/vocalist Joey Santiago and Francis) reunited for a slew of sold-out tour dates—while many pop acts were canceling shows on their 2004 worldwide tours. *Mix* caught up with The Pixies and crew at Berkeley, Calif.'s Greek Theater at the end of September.

OLD FRIENDS KEEP IT SIMPLE

Front-of-house engineer Mathew Yelton is no stranger to Francis' sound. He has been touring with the vocalist's solo act for many years, as well as ensconced in Francis' studio, working on the artist's 1994 album, *The Cult of Ray*. Yelton is using a Midas Heritage 3000 at FOH, and is carrying everything but mains and amp racks for mains, which are provided by the venue or the promoter. "FOH will also have BSS EQ, which I barely use because I do it all in processing, whatever the house processing is, which is usually a SIA Smaart. Or the V-DOSC system in San Diego that Rat Sound has, we were using XTA," Yelton explains.

Yelton puts Francis' and Deal's vocals through Summit tube compressors and has various catch-alls so that the show doesn't sound too "polished" and processed. As for outboard gear, Yelton relies on Drawmer DS201 gates, Yamaha SPX-990s and SPX-3000 reverbs, TC Electronic D2s, dbx 160X compressors "for warmth" and Lexicon PCM70s. "When I talk to Charles [Black Francis] about the aesthetic, they have a particular sound," Yelton says. "They're not trying to emulate their albums because they have so many with such varying tones. I use no VCAs—I constantly have my fingers on the faders because there is so much bleed of hi-hat in the monitors that you can hear the reverb, so I'm constantly riding vocals, hats and snare reverb. I'm using lots of delay and reverb on the vocals as the quickest way to convey to the audience the sound of each particular al-

L-R: front-of-house engineer Mathew Yelton, production manager/lighting designer/audio recording Myles Mangino, monitor engineer Ben Mumphrey and systems tech Kevin "Spike" Maloney

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bum. It's a pretty simple process and simple processing."

While mixing during the show may be "simple," tuning the many venues The Pixies are playing in takes a bit more careful thought. "I take the lead vocal mic and tweak the P.A." Yelton says. "I take the oscillator on the Heritage and do rumble frequencies around the room." With such a mixed bag of P.A.s—from the outdoor amphitheater's V-DOSC, a newly installed JBL VerTec at the Greek in L.A., a Rat Sound system in San Diego, and various EAW and d&B models—Yelton is forced to work with whatever he has each day and contend with each venue's SPL limits. "For this band, you need that dynamic range, so I use a little bit of stage sound—it's just reinforcement," Yelton says. "I just make them sound loud and clear—and turn it up as loud as you can go without hitting the [local SPL] limit!"

MONITOR WORLD, SAME AS THE FIRST

Just like Yelton, monitor engineer Ben Mumphrey has long been familiar with Francis' sound—be it in the studio or onstage. As Mumphrey recalls, when The Pixies gig came up, he was "one of the guys" on Francis' list.

At stage left, Mumphrey is also working on a Heritage 3000 with d&b M2 wedges, d&b C7 sidefills and amps; the band doesn't rely on in-ears. "There are no effects at all, just inserts: gates on kick and snare and that's it," Mumphrey relates. "The mixes are sort of oddball; for instance, Kim doesn't take any vocals at all in any of her wedges or the sidefills and really just hi-hat is cranked, which is painful. The drummer, David, almost takes nothing, just the slightest hint of bass and kick drum and he'll occasionally ask for a vocal. Charles and Joe want nice, loud clear vocals. With the Midas board and d&b wedges, it's certainly the best-sounding system that I've come across. It's loud and clear, and if anything, they ask us to turn things down." Mumphrey notes one unusual aspect on the position of the wedges: They're behind

Mic List

Drums: Shure 91 in the kick, SM81 (overheads), Beta 57 (snares); Beta 52 outside the kick, under the floor tom; MXL 603 for hi-hat to pick up the sticks: "It's kind of like the Neumann KLM 127: They sound old-school," says Yelton; Sennheiser E604 for toms

Guitars: Beta 57, Sennheiser Evolution 609 on each cabinet

Bass: Sennheiser 421

Vocals: Shure Beta 58s

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the band rather than in front. "Charles just thinks that it makes for a cleaner stage. I think he told me that he saw Danzig do it once and said, 'Hey, I want to do that.'"

Par for the tour, Mumphrey's mixing techniques are straightforward and clean: "I just ride the snares during fast songs. With the system we have now, it pretty much stays the same every night. With Black's vocal, you're trying to get it loud enough to not feed back, but right in his ear. He doesn't wear earplugs, so you get it loud enough so that he can feel it."

With minimal outboard gear—save Drawmer DS201B gates—no keyboards, no sampling and no instrument-switching, Mumphrey finds mixing for The Pixies a breeze: "They don't even move the microphones at all—they hardly move onstage at all as a band."

FROM DISCLIVE TO MUSICTODAY

While The Pixies are rocking out onstage—albeit at a visual standstill—production manager/lighting designer Myles Mangino is recording each show to upload to Internet music site MusicToday.com. During the spring tour, The Pixies employed DiscLive (see "On-the-Spot CD Release," May 2004 *Mix* for more info on DiscLive) to record each night's show, burn the audio files to CD and sell to eagerly waiting fans 15 minutes after the show closes. According to Mangino, DiscLive has been sold to an unnamed company and no longer exists; sources at DiscLive could not be reached for comment. "Unfortunately," Mangino says, "[DiscLive] had a great thing going on: They were selling lots of CDs at the end of the show, they had a great package—everything about it was excellent. Even after all of the shows that we've done since, I've probably had 50 people come up to me asking, 'Where are the CDs?' They can't even *believe* they're not for sale. They think I'm not telling the truth.

"Even before the tour started and being a Pro Tools engineer," he continues, "I really wanted to have a portable rig to play with demos, and when The [Pixies'] management asked me to start recording the show, they said, 'Oh, you already have a rig.' I walk out to the [FOH] board, set it up during the opening acts and it only takes 10 minutes. The whole rig fits into a laptop briefcase."

During the show, Mangino records to Digidesign Mbox on his PowerBook into Pro Tools. Audio is provided by 2-track board mixes, which go straight into the Mbox. Mumphrey then takes the tracks to edit and EQ. "To me, it's a more realistic sound—it sounds like you're at the show. It's more live, you don't have to worry about strange levels happening as the engineer is moving faders. So far, everyone's liked the way it sounds." Post-show, Mangino does a bit of mastering to the *one* audio file (although he does employ FireWire for backup), divides the files, puts phase in the beginning and end of each track, converts down to MP3 and uploads it to the site, where fans can download the whole show as one package.

While recording only one file may seem a bit risky, Mangino relies on his history with the band (he was with them in their original years, too) and as a producer/recording engineer to capture each nuance. "I've been a record producer/recording engineer for the past 10 years," he relates, "so I kind of came out of retirement from the studio to do this tour. They really wanted me back as one of their original people and they are a very loyal band. So it was kind of bringing back the show that they had 13 years ago."

MIX ONLINE EXTRAS

Sarah Benzuly is Mix's senior associate editor.

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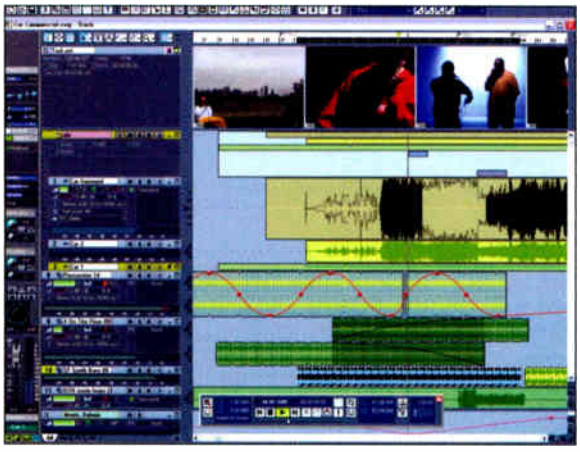
Tools of the Trade



SONAR 4 PRODUCER EDITION

With a feature list as long as your arm, Cakewalk's (www.cakewalk.com) Sonar 4 Producer Edition grows ever closer to being your "everything" audio production tool. Features include multiformat surround mixing/editing (30 configurations supported), intuitive surround panning, Lexicon Pantheon Surround Reverb, Sonitus Surround Compressor and FX Suite processors, SurroundBridge (for using stereo plug-ins in multichannel environments), Video Thumbnail track, POW-r dithering and more. Price: $959 (new), with upgrades available from previous Sonar products.

WAVES L3

In the wake of the L1 and L2 limiters, Waves (www.waves.com) releases the L3 peak limiter. The new plug-in divides program material into five bands using a user-definable crossover. Waves Peak Limiter Mixer then maxes headroom by analyzing the attenuation needs of each band. The mixer also controls the gain relationship between the bands, eliminating the need for an overall wideband limiter to catch overshoots. Other features include a priority control to adjust the relative amount of limiting in each band and 12dB boost per band that effectively turns the L3 into a linear phase EQ. Two versions of the L3 are packaged together: The Multimaximizer offers full functionality and the Ultramaximizer has a more basic feature set. Prices: $1,200, TDM; $600, native. Diamond Bundle users covered by the Waves Update Plan will receive both Ultramaximizer and Multimaximizer free of charge; registered Platinum Bundle users on the plan get the L3 Ultramaximizer at no charge.

VOXENGO TRANSMODDER

Voxengo's (www.voxengo.com, $59) Transmodder PC VST plug-in is a transient-driven filtering system that processes narrow or broadband program material with 64-bit internal precision and then controls transients via five dynamic filters. The plug supports numerous sample rates and will work in either mono-to-stereo or stereo-to-stereo modes. Other features include mid-side channel processing, transient detection meters, a real-time spectrum analyzer and a library of factory presets.

URS BLT EQ

Winning this month's *Mix* Acronym Award (MAA), the URS BLT EQ from Unique Recording Software (www.urs plugins.com) was originally designed as an entry-level EQ for Digidesign's Mbox, Digi 002, Digi 002R and Digi 001 users, but quickly became a requested item at the TDM level because of its easy-on-the-system footprint. The plug offers fixed low- and high-shelving bands at 100 Hz and 5 kHz, overall level control, input and output meters, in/out button and polarity reverse. OS 9, OS X and Windows XP are supported (HD, HD Accel and 24|Mix) at up to 192 kHz, as are the ProControl and ICON controllers. Prices: $199 (TDM, RTAS, AudioSuite) and $99 (Native, RTAS, AudioSuite).

NT INSTRUMENTS ACOUSTILYZER

The latest techie box from NT (www.nt-instruments.com, $904) is a palm-sized unit that can be purchased as a separate instrument (AL1) or as a firmware upgrade for current ML1 owners. New features include sound level metering with LEQ, SEL and short-time LEQ; real-time frequency analysis in 1/1, ⅓-octave bands; FFT analysis down to 1Hz resolution; reverberation time measurements (RT60); delay measurements; and complete STI-PA speech-intelligibility implementation.

PRO TOOLS SMACK!

Never has a resounding Smack! ever sounded so good. Digidesign's (www.digidesign.com) striking compressor/limiter plug-in for Pro Tools features three compression modes, unique compression ratios and harmonic distortion suited for achieving a wide variety of sonic variations. The new plug operates at the full range of Pro Tools sample rates in AudioSuite, RTAS and TDM plug-in formats. A "lighter" version, Smack! LE, includes AudioSuite and RTAS versions and supports Pro Tools LE and Avid software. Prices: $595 (TDM) and $395 (LE).

REALTRAPS MONDOTRAPS

Got low frequencies to conquer? MondoTraps boom-tamers are nearly twice as effective below 100 Hz as RealTraps' (www.

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realtraps.com, $279) MiniTraps and are only 24x57x4 inches. The easy-install baffles are made of rigid Fiberglas and metal, are Class-A fire-rated and hang easily with standard picture frame wire or on a microphone stand. MondoTraps are available factory-direct from RealTraps.

A-DESIGNS REDDI

The red-hot REDDI all-tube direct box from A Designs (www.adesignsaudio.com, $850) features a combo XLR and ¼-inch input, balanced XLR output, LED power indicator, level control knob, ground lift, EIN power connector, Toroid power transformer, custom output transformer and a 6N1P tube.

ORPHAN AUDIO 925 KITS

Who says there's nothing new? Orphan Audio's (www.orphanaudio.com) 925 Kits are aimed at D.I.Y. audio hobbyists by letting them convert a wide range of modules from classic recording consoles to pro-quality mic preamps using factory designs and original parts. The first release converts Quad Eight CA Series modules from classic recording and film consoles to the CA-227 mic pre. All necessary parts are provided, including front panel, schematics and complete assembly, application and use instructions. The kit comes with the QE line amp board ($299) and without the board ($199).

DRAWMER DSL424

A mad audio scientist's dream, this combo box from Drawmer (distributed by TransAudio Group, www.transaudiogroup.com, $1,365) combines the gate design of the company's DS404 with the compressor/limiters of the DL441 into a single rackspace. Features include hard- and soft-knee operation, Program Adaptive circuitry, zero overshoot mode and frequency-dependent gating. The unit is configurable as four separate processors or twin-chained compressor/limiter/gates. I/O is provided on balanced XLRs with ¼-inch key inputs. A high-resolution bar graph displays meter gain reduction and output level simultaneously.

DYNAUDIO ACOUSTICS BM 5A

Dynaudio's (www.dynaudioacoustics.com, $1,250) compact, mid-priced monitor is a two-way active speaker powered by two 50W amps. Drivers comprise a 6.7-inch woofer and 1-inch soft-dome tweeter. Its small footprint makes it well-suited for project studios, edit suites, broadcast trucks and other situations where space is an issue. The BM 5A can be successfully grouped with the BM 10S and BM 12S subwoofers for 5.1 setups.

POPLESS VAC-S3.5/VAC-S6

Popless Voice Screens (www.popfilter.com, $63) has come up with a new twist on an old filter. The new VAC-s3.5 and VAC-s6 (3.5 and 6 inches, respectively) attach to a microphone's shock-mount using an adjustable clamp that opens up to 4 inches wide. This ensures that the filter will fit even the most daunting spider-type shock-mounts. The new models feature Popless' Variable Acoustic Compression, providing user-adjustable control of pop and sibilance filtering through twin adjustable screens that can be set up at varying distances from each other.

LITTLE LABS STD

With Mercenary Audio, Little Labs (www.littlelabs.com, $140) has created the STD (Signal Transmission Device), a studio/live problem-solver. This guitar/instrument cable line driver lets users extend guitar or instrument cables using long mic cables or tielines without losing tone or adding noise. STD has two outputs for splitting between amps or amp/DI and a selectable ground lift on one output. A single-transistor unity gain buffer circuit is mounted inside a special copper-tipped phone plug and loads the instrument pickup properly for a natural frequency response regardless of cable length. With regular use, two 9VDC batteries will power the base unit for more than one year.

Correction

The Princeton Digital SP2016 plug-in version of the legendary Eventide SP2016 reverb was inadvertantly left out of the "Are You Plugged In" new reverb plug-ins article in our October issue. Now available in V. 1.3, the $699 plug-in bundle includes the stereo room, room reverb and high-density plate algorithms from the original hardware unit. The set requires a Pro Tools|HD or Accel system running under Mac OS 10.2 or newer, and supports 44.1/48/96kHz sample rates. A functional 30-day demo version is available at www.princetondigital.com.

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TASCAM VL-S21

This low-profile and extremely affordable monitoring solution from Tascam (www.tascam.com, $129) offers two NXT flat-panel speakers and a ported, powered subwoofer (15W). The resonant modes of the panels, which are powered through the subwoofer (5W/side), are each excited by a single transducer and offer a diffuse soundfield over a wide audio frequency bandwidth. According to NXT, the design reduces destructive interaction with the boundaries of the listening space and lessens fall-off in sound pressure with distance.

ROAD READY RRDRC

Aimed at those who take their digital recording studios/multitrack CD recorders on the road, the RRDRC from Road Ready Cases (www.roadreadycases.com, $159) features double-anchor industrial rivets, recessed latches/handles, ¾-inch vinyl-laminated plywood, tongue-and-groove locking fit and a lifetime limited warranty. It's designed to accommodate any piece of gear that measures 23x16x7 inches (LxWxH) and comes with Pick & Fit foam, allowing users to create custom storage space for their gear.

NEUMANN N248 POWER SUPPLY

This 2-channel power supply from Neumann (www.neumannusa.com, $850) supplies one stereo microphone or two mono condenser microphones with 48V phantom power.

In addition, it also pulls double-duty by allowing the remote control of the TLM127 and TLM170R's five directional patterns by varying the nominal 48V phantom voltage over a range of ±3V. Mixed operation is possible, with one channel controlling patterns while the second supplies a conventional mic. Cable runs up to 900 feet are permissible.

Upgrades and Updates

George Massenburg Labs is shipping the GML 2032 mic preamp/parametric EQ. The Class-A unit can be purchased from www.transaudiogroup.com...**Acoustics Systems Tassman FX Pack** is a collection of effect patches, presets and performances designed to expand Tassman's arsenal of sound design tools. It is available for free to registered Tassman 4 users at www.applied-acoustics.com...**PreSonus** (www.presonus.com) is **shipping FIREPOD**, a 10-in/10-out, 24-bit/96k FireWire recording system. FIREPOD features eight PreSonus Class-A custom mic pre's and Cubase LE, a 48 audio/96 MIDI track recording software...**SSL** (www.solid-state-logic.com) intros **V. 2 software upgrade for its C200** digital console. The upgrade extends the possible total channels to 128, and adds support for new sampling rates and new busing/panning options...**Edirol** (www.edirol.com) is **shipping its UA-25** USB audio/MIDI interface. The bus-powered UA-25 offers phantom-powered mic pre's and hi-Z inputs, and transports audio and MIDI signals to/from the

computer via a single USB connection...**Phonic** (www.phonic.com) has **upgraded the PAA2**, its handheld audio analyzer. New features include quick-touch shut-down, simplified scroll menu, improved battery life (up to seven hours) and a soft-start on low batteries...**Universal Audio** has released the **Cambridge EQ and V. 1.3 TDM update for Digidesign TDM** systems. The update can be downloaded free to existing TDM customers at www.uaudio.com...**Great River Electronics** (www.greatriverelectronics.com) is **shipping the EQ-2NV**, the companion EQ to NV Series mic preamps. The 2NV is Class-A, discrete and loosely based on the vintage 1081/1083 model EQs...**Pro Drum Works Volume One** ($249) from **Smart Loops** (www.smartloops.com) is a six-CD collection of drum loops for use with ACID and compatible music and audio software. The entire collection includes more than 3,000 grooves and fills, each performed on all three kits, for a total of more than 9,000 loops and samples...The $138 **MDPBP** is a robust NiMH battery pack that powers the **HHB Portadisk** for approximately three-and-a-half hours. The ASC110 ($125) is a microprocessor-controlled charger providing intelligent monitoring and quick three-hour charging. The ACS110 features a discharge function and comprehensive LED metering of the charging functions. Distributed by Sennheiser at www.sennheiserusa.com...**Native Instruments'** online **Absynth 2 Library** features a category system, convenient search/sorting, a user-rating system, automatic e-mail notification and more. The tools let Absynth 2 users swap their own sonic creations, individual oscillator channels and complex envelopes and effects settings. The collection is free to registered Absynth users at www.ni-absynth.com. ■

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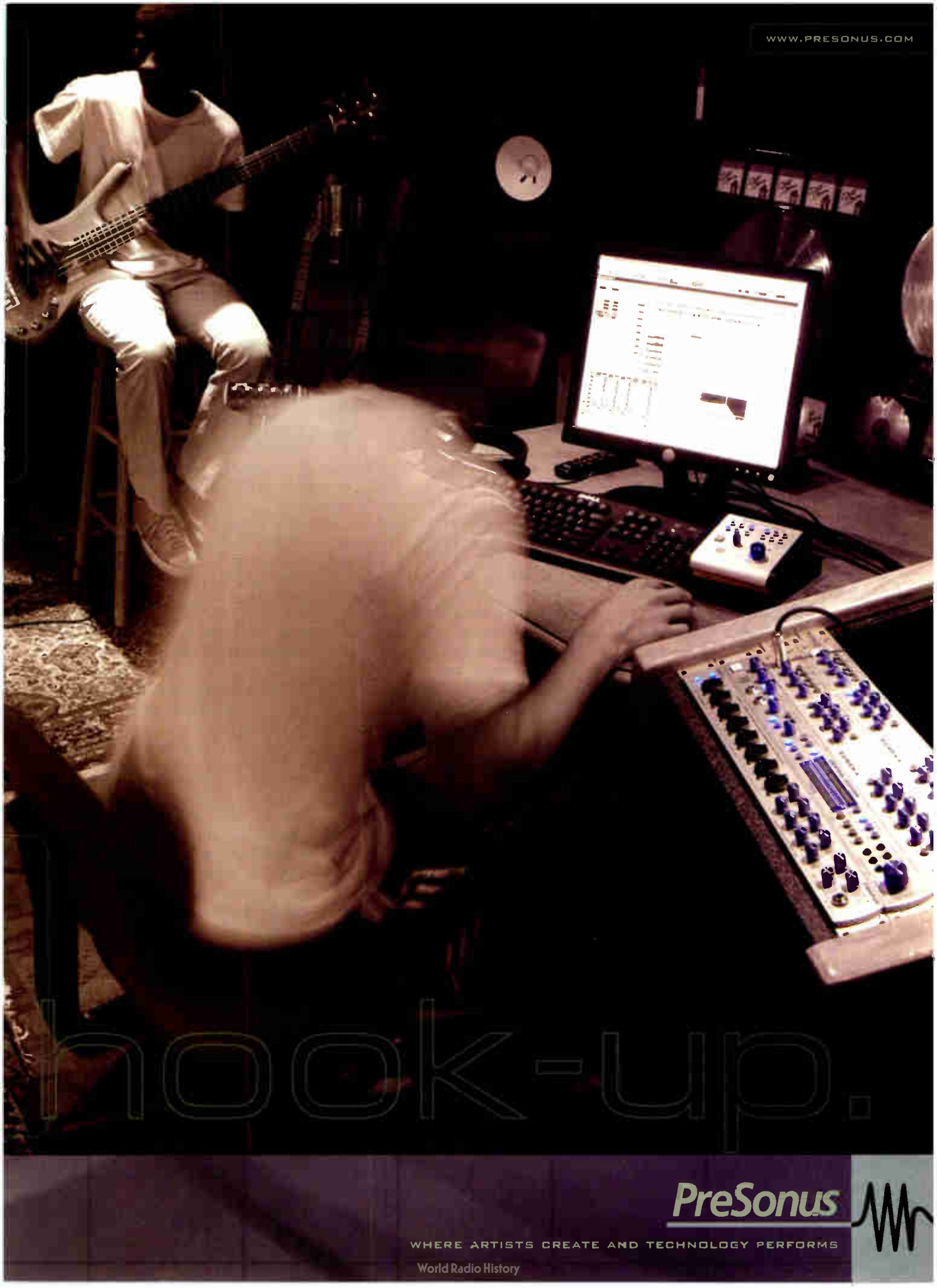

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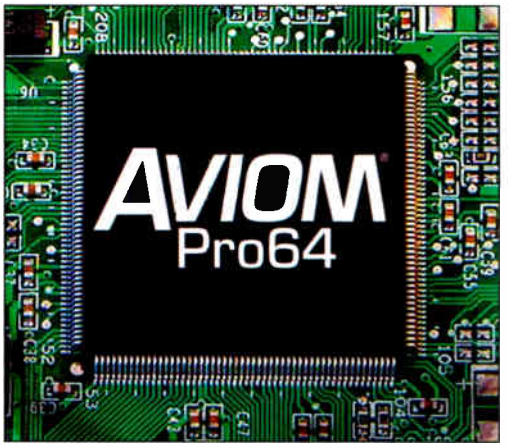
Aviom A-Net Pro

A Simple Solution to Audio Networking



Aviom's custom Pro64 ASIC provides the core of the A-Net Pro network protocol, handling up to 128 channels.

Whether moving audio files around in a studio complex or offering shared access to stage feeds for front-of-house/monitors/recording/broadcast duties during a live performance, using networked audio makes a great deal of sense. Unfortunately, the process can be daunting. Dealing with a maze of hubs, routers, switchers, interconnects and servers might seem so simple to computer techs, but the process can baffle many pro audio users.

Formed by a number of ex-Ensoniq engineers, Aviom appeared on the scene in 2002 with its A-16 Personal Monitor Mixing System, which distributed 16 channels of audio over A-Net, a proprietary, Ethernet-style protocol. Offering a simple system of distributing channel feeds and submixes to individual mixing stations—thus allowing musicians to create their own cue mixes—the A-16 won acclaim with the pro audio community and is now used in studios, tours, symphonies and houses of worship worldwide.

The A-16 is a 16-channel, single-direction system, so it only uses one pair of the four pairs on a standard Cat-5 cable. Aviom expanded the technology with its 64-channel AN Series of digital snake products, which use all four of Cat-5's wire pairs. The system can be set up as single or bi-directional, but send/returns are allocated in 16-channel blocks, offering 64x0, 48x16 and 32x32 (or smaller) configurations.

At AES in San Francisco, Aviom announced A-Net Pro, a more robust version of the original A-Net protocol. The first-generation A-Net has the power that many users and systems require, and the company will continue to support and create new products based on this version of the protocol. However, A-Net can't do everything, and A-Net Pro was developed to support larger, more complex and more varied audio networks than first-generation A-Net, while still offering uncompressed, low-latency audio in an easy-to-use, plug-and-play network.

"A-Net Pro features significantly increased capacity: up to 64 24-bit/48kHz audio channels on a single-wire pair, which on Cat-5 means up to 256 channels on a single cable," explains Aviom's Chandler Collison, while adding that "the protocol is not typically designed to run with 256 channels. Its two main modes of operation are 64 channels distributed throughout the network, regardless of the location of an input or output module, so there are no upstream and downstream signal flow limitations in that mode. The other major mode is bi-directional with 128 channels. With 64 channels in each direction, audio can be loaded into or out of the streams at any module. There's no limitation on the number of audio sources in your installation. The only restriction is you can't have more than 64 in either direction at any one point."

A-Net Pro is based around an Aviom-designed custom Pro64 ASIC chip that can handle up to 128 channels, and the company has been talking to numerous pro audio companies about incorporating A-Net Pro into their products. "To reach the maximum 256 channels, or 128 channels bi-directionally, each [I/O] module would need a second A-Net Pro ASIC," says Collison. The 24-bit system supports variable sample rates, with a 1x mode for 44.1/48 kHz, and 2x and 4x modes handling up to 192 kHz, with a corresponding reduction in channel count.

Another A-Net Pro feature is its dedicated bandwidth provision for what Aviom calls "virtual data cables," serial data slots that can be used for a combination of RS-232, MIDI and GPIO (general purpose inputs/outputs). The information is distributed and available throughout the network, and would be ideal for applications such as system control, lighting controllers or MIDI. In fact, with the latter, A-Net Pro overcomes MIDI's short cable limitation and expands it to A-Net's 500-foot maximum. A-Net Pro is a hybrid data/audio network, but its first priority remains audio: The non-audio data fits around the audio and not vice-versa.

The Pro64 ASIC offers routing flexibility. "There's a full crosspoint switch on both input and output, and the A-Net Pro protocol supports single-channel granularity so you don't have to pull down a 16-channel packet like the original A-Net system," says Collison. This way, the system can support digital patchbay functions or operate as a traditional matrix on a large console, providing the equivalent of two virtual 64x64 console matrices on each chip.

A-Net Pro can also be managed or controlled via a PC. "We're designing our modules to be as plug-and-play as possible, but there's a balance here," Collison adds. "Because A-Net Pro has so much power and versatility, it's difficult to design a control interface that fits on a single-rackspace chassis. That's really where the PC interface comes in, especially for managing routings and system presets."

The routing possibilities are formidable. Users could control whether input sources connected to A-Net Pro hardware modules are loaded into an A-Net Pro stream or not. With no limit on the number of audio sources that can be connected to the network, the user decides which 64 signals (or 128 in a snake) are distributed. Any audio not loaded into an A-Net stream is still live audio and can be monitored and processed locally. For example, a band could be working in Studio A, connected to the network but not loaded into the A-Net stream, while a band in another room uses the network space. For the next set of sessions, Studio A could use the network without re-patching, and the same scenario would apply equally well to multiple band setups in a live situation.

The first deliveries of the Pro64 ASIC will be available to third-party companies in mid-2005, and Aviom will unveil its first A-Net Pro hardware products in the third quarter of 2005. For more information, visit Aviom at www.aviom.com. ■

George Petersen is Mix*'s editorial director.*

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Focusrite The Liquid Channel Processor

Emulating Vintage Gear in a Modern Package

If imitation is the most sincere form of flattery, then the new 2U, split-personality processor from Focusrite is a downright apple polisher. The Liquid Channel emulates the sonic characteristics of dozens of modern and vintage mic preamps and compressors, combining one preamp and one compressor replica of your choice across the signal path. To accomplish its mimicry, the unit uses dynamic convolution, a DSP process in which the captured impulse responses of the original units are applied mathematically in real time and on a level-dependent basis to The Liquid Channel's audio input signal at single sample intervals. Worst-case latency for throughput is better than 2 ms.

To account for impedance loading and differing input topologies in various mic and preamp combinations, The Liquid Channel also switches capacitors and resistors and alternates between transformer- and electronically balanced input stages as needed to emulate a specific preamp. When you recall a specific mic preamp replica in The Liquid Channel, the analog circuit path changes at the same time that the convolved replica of the pre is being loaded in the digital domain. All compressor replicas, on the other hand, exist solely as convolution data in the digital domain. The unit also includes a *modeled* (not convolved) 3-band digital equalizer loosely based on the company's ISA 110.

SIGNAL FLOW

The Liquid Channel offers mic, line and AES/EBU inputs on rear panel XLR connectors selected in turn from the unit's front panel. Mic input signals go through the analog mic pre stage, A/D (an AKM 5394 chip), digital preamp convolution section, and compressor and EQ sections (in that order, unless the EQ is placed pre-compressor by a front panel switch), and exits the unit via AES/EBU or analog line-level XLR output. Analog line input signals go straight to the A/D and bypass all mic preamp circuitry (including, unfortunately, digital replicas), but otherwise follow the same path as mic input signals. Digital input signals that access a transformer-balanced preamp replica are first routed out the unit's D/A and then follow the same signal path as mic input signals (from analog mic pre stage and A/D through to output). Digital input signals that access an electronically balanced preamp replica go straight to the digital preamp convolution section, then follow the same signal path as analog line input signals.

The Liquid Channel processes audio at 24-bit depth and at any standard sampling rate from 44.1 to 192 kHz. A-weighted dynamic range specifications for the A/D and D/A are 120 and 116 dB, respectively, and maximum I/O levels are +22 dBu. The unit can lock to internal crystal, AES/EBU input or word clock—the latter via a rear panel BNC input connector. Multiple units can be linked for stereo or surround operation using rear panel RCA connectors.

UP FRONT

The Liquid Channel's front panel controls are beautifully laid out and intuitive. All dials are rotary encoders that—with the exception of a data wheel that scrolls through and selects preamp and compressor replicas—are surrounded by LED rings indicating their approximate level settings. An LCD shows more exact numerical parameter readouts, replica names and operational prompts in two rows of characters.

A gain dial adjusts gain for mic input signals from +6 to +80 dB or for line or digital inputs from -10 dB to +10 dB (in 1dB steps). The gain is digitally controlled, except in the analog domain for mic and line input signals and in the digital domain for digital input signals. A nicely resolved LED bargraph meter shows input level (mic, line or digital) post-A/D from -20 to 0 dBFS, but it lacks peak-hold functionality. Strangely, I found that the accompanying digital clip LED sometimes lit at levels as low as -8 dBFS on percussive sources and didn't work at all on digital input signals.

Mic inputs have access to defeatable +48-volt phantom power. Mic, line and digital inputs all have access to polarity inversion, a highpass filter (the latter switchable between 75 and 120Hz corner frequencies with a 12dB per octave slope) and a special Session Saver function. Session Saver automatically turns down the input gain (without using compression) in 1dB steps to a maximum cut of -3 dB when the input signal starts to clip.

If you don't want to use a preamp replica, The Liquid Channel lets you select a flat, electronically balanced input. Conversely, a Harmonics dial incrementally adds second, third and fifth-order harmonics in amounts that are dependent on both input level and the specific mic preamp replica selected. Because no two vintage units sound exactly alike, the Harmonics dial lets you further tailor a replica's sound to approximate (or intentionally depart from) a particular hardware unit's sound. I found that Harmonics added beautiful, analog-sounding coloration in easily managed amounts ranging from subtle to extreme.

The Liquid Channel has two parameter modes to tweak its compressor replicas: One limits parameter ranges to those found on original hardware units (although I found this to not always be the case) and the other provides more freely assignable values. In the latter mode, you can adjust threshold range from -40 dB to +20 dB in 1dB steps, ratio from 1:1 to limiting, attack and release times each from 0.1 ms to 2.5 seconds, and makeup gain from -20 dB to +20 dB in 0.5dB steps. An LED bargraph meter shows gain reduction from -0.1 to -15 dB. The compressor can be independently bypassed.

The Liquid Channel's 3-band EQ provides high- and low-shelving bands and a parametric midrange band. The low-shelf's

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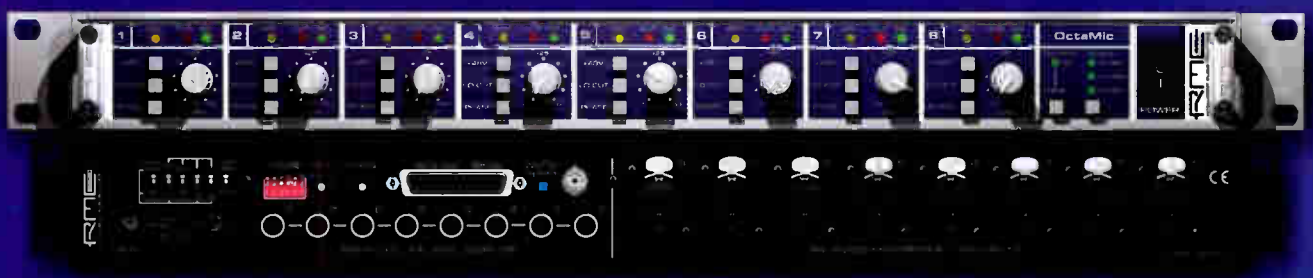

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range covers 10 to 1k Hz, mids go from 100 to 10k Hz and highs can be shelved anywhere between 200 and 20k Hz. All bands provide ±18dB gain. The middle band's Q is adjustable from 0.8 to 2.5. Although the EQ can be globally bypassed, independent bypasses for each band are not provided. The EQ can be routed to the compressor section's sidechain, and a Sidechain Listen function is provided. The Liquid Channel's EQ sounded wonderfully smooth, full-bodied and responsive.

GET WITH THE PROGRAM

Users can name, save, recall and edit The Liquid Channel's current "program," which comprises all front panel controls. One hundred program memory slots are on board, and the unit ships with 40 replicas each of preamps and compressors. (A complete list can be found at www.ffliquid.com/replicalist.html.) Additionally, Focusrite's free LiquidControl computer software lets you store an unlimited number of programs on a Mac (OS 10.2.8 or later) or PC (under Windows XP) equipped with a USB 1.1 port and download the programs to The Liquid Channel via the unit's rear panel USB connector. LiquidControl can also remotely control The Liquid Channel's various parameters. Compare and Revert parameter editing functions facilitate A/B comparisons and reversions to original programs, respectively.

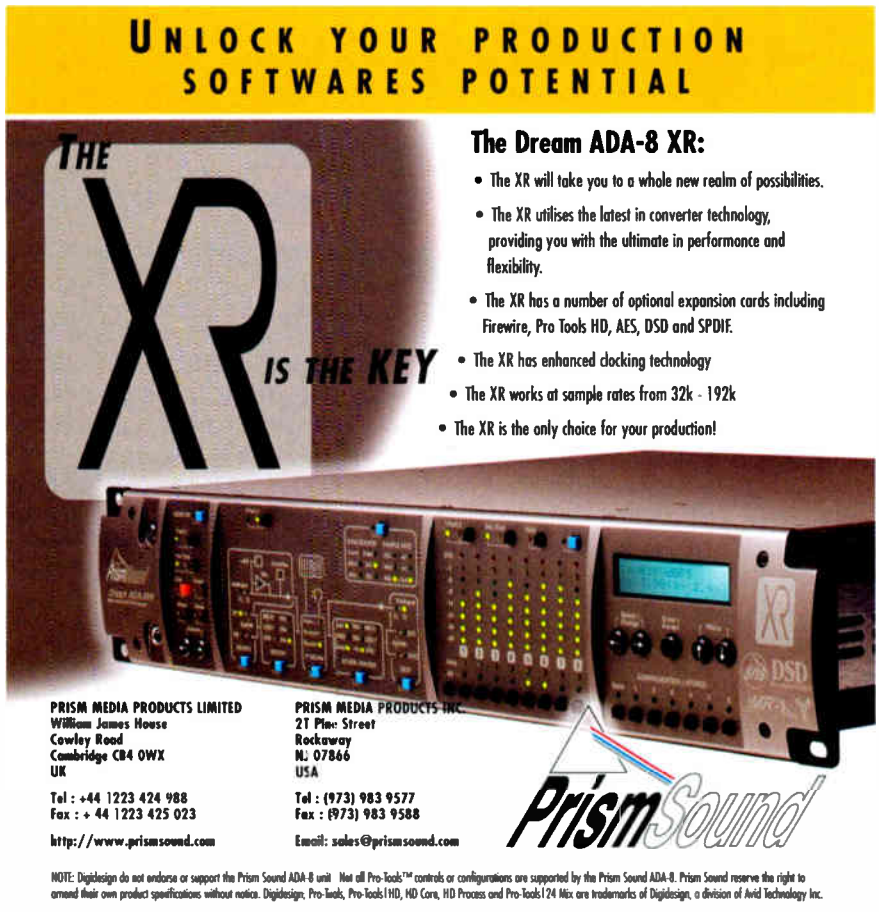
DOES IT DELIVER?

With the caveat that no two aging preamps or compressors sound exactly alike, I found The Liquid Channel to be spotty in its emulation of real preamp and compressor models. Some of the replicas were pretty far off the mark, but others were uncannily accurate. The Liquid Channel fared poorly in its emulation of the Millennia HV-3B/D and Tube-Tech LCA2B. It did better approximating the sound of a Universal Audio 1176LN at moderate settings and amazed me with how closely it emulated Universal Audio's LA-2A and M610. Unfortunately, the unit often made sharp popping sounds when switching replicas.

The Liquid Channel's success in imitating every favorite mic pre and compressor is only part of the story. The Liquid Channel provides a huge variety of preamps, compressors and excellent EQ in a single unit. Even at $3,495, such versatility is hard to beat.

Focusrite (dist. by Digidesign), 866/FOCUSRITE, www.focusrite.com ■

Mix contributing editor Michael Cooper is the owner of Michael Cooper Recording.



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BY ERIK ZOBLER

Waves IR-1 Parametric Convolution Reverb Plug-In

Impulse Responses From Outstanding Spaces

When I first heard about Waves' IR Parametric Convolution Reverb, the letters IR and the word "convolution" puzzled me. After some research, I figured out what was under the hood in this powerful new plug-in.

Convolution, simply stated, is a mathematical operation in which a source signal is processed by passing it through an FIR (Finite Impulse Response) filter, which then generates a third signal. IR (Impulse Response) plays a central role in all digital reverbs. Impulse Response convolution means taking a sound and multiplying it with an impulse response sound file of an aural space (natural or synthetic) so that the signal sounds as if it were played in that aural space.

The IR-1 is a sampled-acoustics convolution reverb plug-in that uses sampled Impulse Response files to generate output. These IR files are responsible for the reverb's sound signature. Waves ships more than a Gigabyte of meticulously recorded IR files with the plug-in. Traditionally, convolution reverbs haven't allowed much control over parameters, but Waves has figured it out and has delivered a very useful, highly adjustable, excellent-sounding reverb plug-in.

The IR-1 provides complex, incredibly smooth sampled-acoustic reverbs and allows total control of all familiar reverb settings plus a few new controls. Familiar controls include Reverb Time, Size, Reverb Density, Independent Gain and Pre-Delay of the three components of the IR's output (Direct, Early Reflections and Reverb Tail), Wet/Dry, Reverb Damping and EQ. The gain and pre-delay controls can be linked so that they can be adjusted as a group, and the EQ (4-band) and Damping settings are the same click-and-drag type found in Waves' Renaissance plug-ins. Unfamiliar controls include Convolution Length, Reverb Resonance, Decorrelation Control, Direct Control, ER/TR-X Control and some unusual Pre-Delay settings. The Convolution Length parameter controls the length of the process filter. This means that the IR-1 will provide up to six seconds of reverb based on the Impulse Response file. Most of the supplied IRs are less than four seconds, but if an IR is longer than six seconds, it will be cut off. This results in a "gated" reverb sound, which can be smoothed out by using the Envelope Gain. Setting the convolution length shorter than the RT60 Reverb time will save some CPU load.

IR-1's Ryman Auditorium reverb; note both traditional parameters and convolution settings.

Reverb Resonance magnifies or reduces resonances in the original IR while Decorrelation Control is a stereo-widening control. The IR-1's "direct" signal is not the same as a "direct" signal on most other reverb units. In the IR-1, the direct signal is actually a convolved signal (like the other reverb components), but it is convolved with the first reflection from the impulse response. In other words, if you were sitting in the 10th row of a hall, it would be the very first sound you would hear coming directly off the stage without any reflections. If you want your recording to sound as if it were coming from that 10th row (or wherever the IR was recorded), then you would turn this control on and set the Wet/Dry slider to fully wet. This setting defaults to off as most of the time you would be using the IR-1 as a reverb and the "direct" is not reverb.

The ER/TR-X control allows you to move the point where the early reflections stop and the tail reverb begins. Pre-Delay settings in the IR-1 are unusual because they can be set as high as 500 ms and the Reverb Tail pre-delay can be set to -100 ms. I found this minus predelay setting useful when I encountered some latency issues on a particularly distant-sounding impulse response.

LET'S GET LOADED

The ability to shape the sound of the IR-1 is the engine of this reverb. Equally important is the gas that you put into the engine, and Waves' gas is high-octane. Waves partnered with Angelo Farina at the University of Parma, Italy, to create a set of extended-frequency, extremely low-noise 32-bit impulse responses. The 2-CD library offers more than 120 IRs that range from huge to small, with lots of in-between spaces. Some of the more famous acoustic spaces include the Sydney Opera House, Ryman Auditorium and St. Johns Church, while some of the less-famous small spaces include car interiors and the Waves bathroom. In addition to real acoustic spaces, Waves also created IRs from classic hardware devices including multiple IR samples of a Lexicon 480L. One of the strengths of IR reverbs is that they are not limited to a finite number of IR files. In fact, Waves offers a Website for sharing IR files at www.acoustics.net. Waves IRs are in a proprietary format (i.e., can't be read by other processors), but the IR-1 does allow you to import third party IRs in .WAV format, many of which can be found for free on the Internet.

CPU LOAD

Most IR convolution reverbs are very computation-intensive. When I received my evaluation copy of the IR-1, I found that I didn't have enough horsepower in any of my computers to run the plug-in. To reme-

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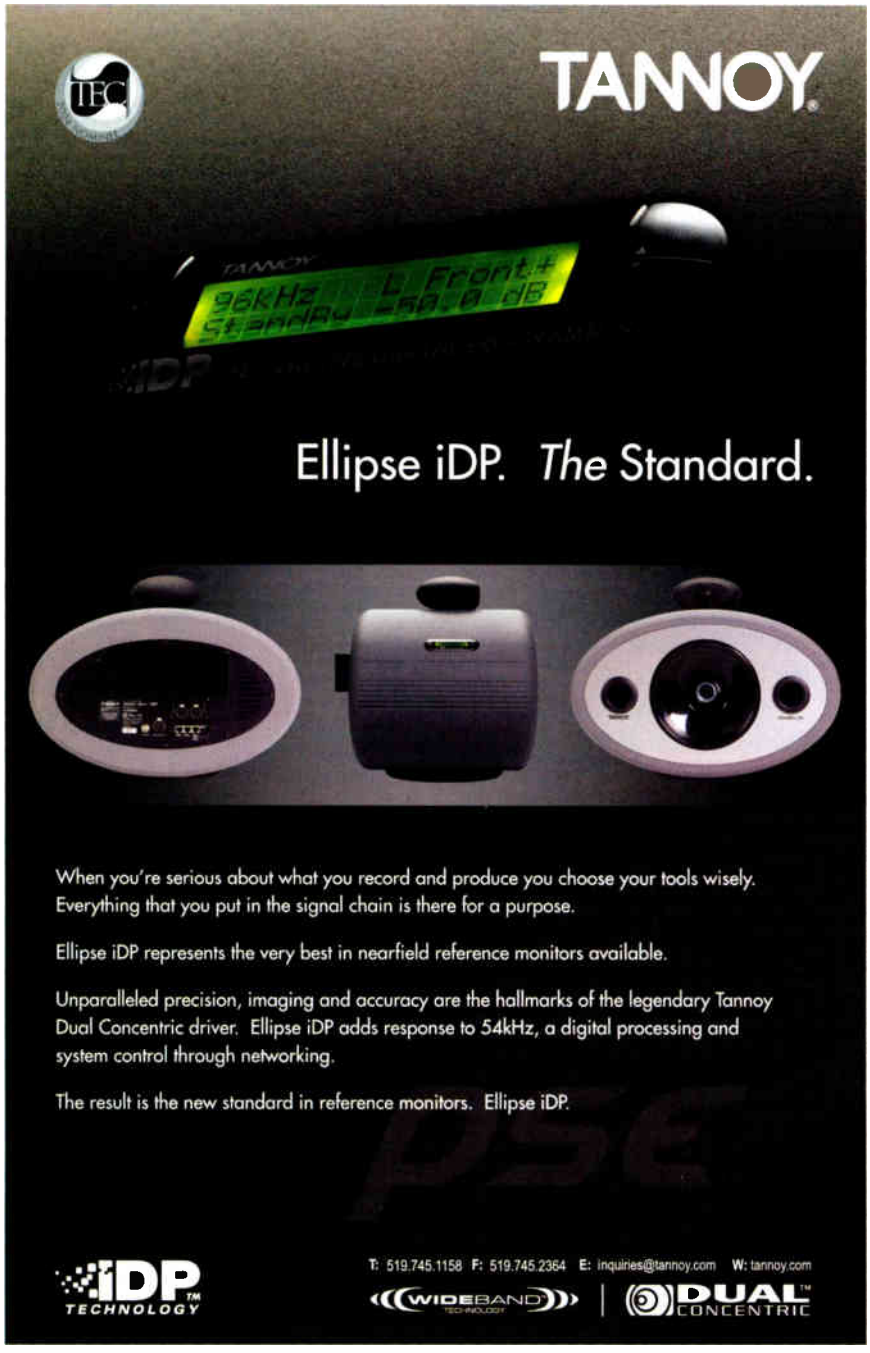
dy this, I purchased a Powerbook 1.5GHz laptop, and for I/O and a host, I used a Metric Halo Mobile I/O 2882 and Apple Logic Pro. I set up this rig as an external reverb processor so that the only task on the laptop's CPU was the IR-1 reverb.

IR-1 has many ways of dealing with CPU demands. When you instantiate the plug-in, there are four choices: mono, mono-to-stereo, efficient stereo and full stereo. Full stereo uses four convolution engines, while mono-to-stereo and efficient both use two and mono uses one. Increasing host buffer size can reduce CPU consumption, but higher buffer settings also have more latency. A CPU mode switch offers settings: Low can save up to 45 percent of the CPU cycles, with a slight reduction in convolution resolution. Shortening the convolution length will free up some CPU power. Higher sampling rates also create more CPU demands.

IN THE MIX

I set up the IR-1 on a stereo aux send while mixing George Duke's latest album. Most of the time, I was looking for reverb with some length, rather than short ambient spaces such as bars and rooms. I tried it on drums, vocals, strings, keyboards and guitars. It sounded smooth and detailed, with one exception: I couldn't get it to feel right on a vintage Rhodes. The Rhodes had a bright "bell-y" sound that was accentuated in the reverb's reflections. I was using one of the seven Santa Cecelia Concert Hall IRs. Turning down the early reflections and setting the tail pre-delay to -100 ms helped, but I was already committed to using it on other instruments in the mix so I didn't want to change it much. In that case, a Yamaha REV5 did the trick. If I had enough processing power, I would have instantiated the IR-1 once more with a different IR and dedicated it to the Rhodes. One of the IRs that I particularly liked was the Todd/AO Scoring stage. I had recently cut some tracks there for Disney's *Mr. 3000* film, so the room sound was still fresh in my memory. Adding IR-1 to my tracks suddenly put them on that scoring stage. The IR-1 could be a very useful tool when you want your tracks to sound as if they were actually recorded in a particular environment. I didn't have time to audition all of the IRs, but I must say that I fell in love with the Sydney Opera House. One of the interesting effects of using the IR-1 was that it sounded so good, I found myself pushing the reverb more than normal. Trimming the returns brought the mix back into perspective.



LOTS GOOD, LITTLE BAD

There were a few minor drawbacks: When you make a parameter change in IR-1, the output mutes and the display shows "calculating..." The calculations usually take less than a second, but it is still a bit annoying. Also, you can't automate its parameters. You aren't able to use decay times longer than six seconds. And the IR-1 is pricey—$800 for RTAS/HTDM/MAS/AudioUnits/AudioSuite/VST/DirectX and $1,200 for TDM. But the biggest issue to keep in mind is processing power. Naturally, the first thing I tried to do was redline the software by setting up Logic and the Mobile I/O to run at 96k. I loaded a four-convolution engine set to Hi CPU. At 96k, the IR-1 absolutely sings. However, on my external laptop system, the IR-1 sometimes hiccupped, especially if I increased the reverb time. Adjusting Logic's buffer size helped a little. Using fewer convolution engines or switching the CPU mode from Hi to Low did slightly degrade the reverb quality, but I want to emphasize the word slightly. At 48k, everything worked fine. What this means is that the IR-1 is a CPU-eating beast. With enough processing power, however, it works and sounds great. Bottom line: As long as you have the CPU horsepower, you will love this plug-in.

Waves, 865/909-9200, www.waves.com.■

Erik Zobler is an L.A.-based mixer.

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BY KEVIN BECKA

SE Electronics SE1A, SE2 and SE3 Mics

Versatile Small-Capsule Condensers From China

I have a friend, a self-proclaimed audio snob, who swears that if he ever heard a *great*-sounding Chinese microphone, it would be one of the signs of the Apocalypse. After reviewing three small-capsule mics from SE Electronics, I told him to cash out his 401k, buy the Ferrari and 100 gallons of ice cream, and wait for the flash.

As of this writing, SE Electronics, based in Shanghai, China, makes eight models of condenser microphones. The three mics tested for this review are all front-address, phantom-powered models with varying features, all from the same family of origin.

The SE1A ($199), an improvement on the company's original SE1, is a solidly constructed, no-frills fixed-pattern condenser. It also comes as a factory-matched pair—including a stereo bar—in a wooden box for $449. Equivalent noise for this mic is 17 dB (A-weighted), the output impedance is 300 ohms and it will take up to 137dB SPL at 1k (0.5% THD). The SE2 ($399) carries the same electronics and specs as the SE1A, but has a slightly different body and comes with a shock-mount and three screw-on capsules (cardioid, hypercardioid, omni).

The stand-out of the trio is the fixed-cardioid SE3 ($349). It is broader and heavier than the other two, has a unique capsule and electronics and, like the SE2, ships with a shock-mount. Other SE3 features include a switchable low-end roll-off (-10 dB per octave starting at 120 Hz), a -10dB pad, the ability to take 135 dB at 1k (0.5% THD), an output impedance of 200 ohms and the same noise spec as the SE1 and SE2.

IN SESSION

I started off using all three mics around a drum kit. Two of the SE1As, used with the stereo bar, were pressed into duty as room mics, while a pair of SE3s were used as a spaced pair of overheads. This combo was wonderful. The SE1A and SE2 were on the bright side—too bright for my tastes—but with a bit of judicious placement, they worked very well. For this reason, I tried the SE2 on hi-hat and wasn't disappointed. It sounded bright, as expected, but worked well for the purpose, needing no EQ to bring up the shine of the hat on the left side of my mix. The only improvement I'd make to the stereo bar would be to add a spacer under one of the clips to help make an easier over/under array when using it in X/Y. The SE3s sounded gorgeous when used as overheads. The ping of the stick hitting the cymbal was up front without being overly bright, and the rest of the cymbals never sounded trashy. The stereo picture was balanced and the kit sounded like you were in the room.

Next, I heard the SE2 used on a less-than-inspiring acoustic guitar. This particular guitar had a dull top end that was flattered by the SE2's boosted high end. In another session, the SE3 worked perfectly when used to record a different acoustic guitar. The flat nature rendered a nice top and was never boomy.

The SE3s worked very well on a Yamaha C3 piano. This particular piano is brand-new and, like most Yamahas, a bit on the bright side. The flatness of the SE3 tamed it without making it sound dull. When compared to a competitor's more expensive fixed-cardioid condenser, the SE3 beat it hands-down. I heard the mics in this application a few times and was pleasantly surprised at how well it sat the piano down in the mix when heard with a full drum kit, bass and guitar.

While I prefer a ribbon mic on tenor saxophone, the SE3 worked quite well; however, the SE1A and SE2 were too bright for this application.

SO IS IT REALLY THE END OF THE WORLD?

While the SE1A and SE2 sounded good, the SE3 was an unexpected surprise. It sounded excellent on a variety of sources, imparting a lot of detail without being brash. Most importantly, almost everything I heard recorded with it sat nicely in the mix with minimal need for EQ.

The SE1A and SE2 have a lot of added top end, while the SE3 sounds relatively flat. I wouldn't call any of the mics "warm," but with the SE3, the words "balanced" and "accurate" come to mind. The SE3, in particular, is great at rendering transients.

All in all, no matter what I threw at them, the trio handled it well. For drums, these mics are a lot of fun to use. The SE1A and SE2 seemed to work better in the room because of their natural high-end bump, while the SE3s excelled as overheads. On piano, sax and acoustic guitar, these mics did their job admirably.

All three models reviewed ship in nice, red-lacquered wooden boxes with hard foam inserts. (A single SE1A comes in a card carton with foam insert.) The spring-clip shock-mount (offered with the SE2 and SE3), while basic, is sturdy and offers a decent amount of isolation from stand noise. If you want to try these out, SE offers a try-before-you-buy program. (See Website for details.) These mics, especially the SE3s, are perfect for anyone on a limited budget looking for a high-quality condenser priced well under $500.

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Kevin Becka is Mix's technical editor.

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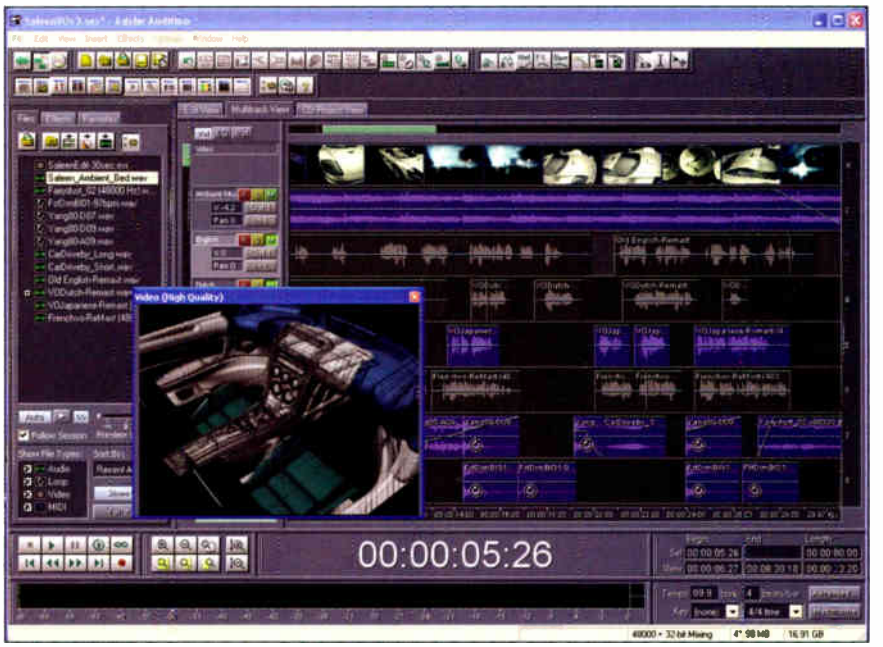
Adobe Audition Version 1.5 PC-Based DAW

Low-Priced Application Packed With Pro Features

Recent acquisitions of audio companies by much larger video companies have made some unusual bedfellows. Arguably, the company that has done the most with the least is Adobe. It took Cool Edit Pro—a very cool, inexpensive and fairly intuitive DAW that introduced a lot of entry-level audio enthusiasts to digital recording—and turned it into Adobe Audition. The latest version, Adobe Audition 1.5 (PC-only), is an improved, all-around recording, editing and mixing environment for audio and film post-production. It is capable of 128 tracks and supports standard sampling rates including 192 kHz. The best part is that, at $299, it is still accessible to those with even modest budgets.



Adobe Audition 1.5 allows video file import and integrates with Premiere, After Effects and Encore DVD.

EFFORTLESS INSTALL

For the test, I used a 2.4GHz Pentium 4 with 512 MB of RAM running Windows XP Pro. After an easy and glitch-free install, I instantly noticed how well-organized the interface was. If you don't like the layout, just about every panel can be resized and has docking capabilities—an excellent feature for setups with dual monitors.

At first, I was planning on using a Digidesign 002R for I/O, but that quickly changed as Audition 1.5 couldn't detect my 002R hardware. After a quick read of the manual, I was disappointed to find that Audition 1.5 does not support ASIO drivers. Plan B was to ask MOTU to lend us its excellent 828mkII for the review, which worked wonderfully.

NEW FEATURES FOR 1.5

An impressive new feature in Audition 1.5 is the introduction of frequency space editing. With Adobe's Marquee Selection tool, you can make frequency-specific selections within Audition's Spectral View. (Instead of your usual time vs. amplitude graph, it's time vs. frequency.) This enables the user to apply any effect or dynamic processing on any or multiple bands of frequencies while leaving others unaffected.

I used this approach on a live string ensemble where there was some coughing in the audience. Once in Spectral View, the coughing was quite obvious to the eye: Spectral View has a dark purple background with the program material ranging from a bright orange to a pinkish display. I made a quick selection of the obtrusive coughs with the Marquee Selection tool. Then, under Favorites, I selected Repair Transient, applied a little amplify/fade tweak and the coughing was gone. Audition 1.5 was able to remove about 90 percent of the interfering sound. Audition 1.5 also provides access to frequency and phase analysis windows, which is helpful. I spent much of my time within the Spectral View as it was functional and a very creative tool.

RESTORATION AND PITCH-FIXING

Audition 1.5 provides you with a complete set of restoration tools right out of the box. A new Auto Click/Pop Eliminator offers a speedy option to the Standard Click/Pop Eliminator that's been around since V.1.0. By just using the presets, I was able to easily clean up DV camera noises, a live recording and noisy vinyl transfers. I also tried it on an older recording that had a bad digital clocking tick and it worked without changing any of the dynamics. Fully tweakable restoration tools that are available include manual Click/Pop Eliminator, Clip Restoration, Noise Reduction and Hiss Reduction.

A pitch-correction tool comes standard in 1.5. The interface is broken down into a user-friendly automatic mode and a more in-depth manual mode. In auto mode, you define the key, adjust the sensitivity and the attack time, and Audition 1.5 analyzes and adjusts the pitch. In manual mode, you can make precise adjustments, note by note. You can easily draw in the pitch corrections along a timeline with a graphical view of the waveform.

For this review, Adobe provided Propellerheads Reason to demo the new ReWire support in 1.5. ReWire allows multiple programs to communicate with one another and stream full-resolution data in real time. There is a new ReWire tab under Device Properties that, once enabled, feeds the outputs of ReWire to an input in Audition 1.5. During my ReWire session, synchronization was constant between Reason and Audition 1.5, regardless of which transport I used.

VIDEO-READY

Adobe has built some impressive video ability into Audition. Easily integrating Audition 1.5 with Adobe's Premiere, After Ef-

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fects and Encore DVD gives anyone the ability to complete any A/V project from start to finish. By importing video files such as .AVI, DV and .MPEG and taking advantage of the timecode capabilities, you can easily create an impressive soundtrack. The Clip Time-Stretching button works perfectly in this situation, providing time compression/expansion of the audio and making it fit nicely with the picture, all without changing pitch. Keep in mind that Audition 1.5 doesn't recognize the ASIO-2 sample-accurate sync protocol, but that was no problem when I added a MOTU MTP-AV.

MIDI AND LOOPING

Version 1.5 is limited to importing and playback of MIDI information. It does not support MIDI recording and editing. This will prove to be a weak link for the MIDI-dependant musician. However, loopers will feel right at home with Audition 1.5 as it provides more than 5,000 royalty-free loops. All loops are native 32-bit recordings that have dynamic, musical characteristics. If freeze-dried loops aren't your cuppa tea, it's easy to take an analog recording, transfer it into 1.5 and create your own library of loops. To do so, I turned to "Defining Loops" in the user-friendly manual and followed a few steps.

I started by defining a region with beats and marks, calculated the tempo and had permanent loops in no time. Other looping software had no problem detecting and using the loops fabricated within 1.5. Advanced features let you have complete control over tempo, time signature and the session's key. I imported a trumpet loop into a few sessions, and 1.5 was able to transpose the loop to match the different keys.

YOU'RE SURROUNDED

For multichannel surround sessions, Audition 1.5 provides all of the tracks with Multichannel Encoder. A well-laid-out Encoder window provides you with a list of tracks and a Surround Panner that you can either click and drag into any surround position or use panning assignments with a bus mentality. For automation, you can use a graphic envelope to draw your panning movements or click on the Panner Point and position it anywhere. The only downside is that you can't make any changes while the mix is running: I had to stop and draw the envelope automation or use the Panner Point.

While exporting the files, I could process them as six individual mono .WAV files or as one interleaved, 6-channel .WAV file. Encoding to Windows Media 9 Pro (WMA9) is also available. (You must have Windows Media 9 runtime installed, also provided by Adobe.) This is treading into DVD authoring, and it would be nice if Adobe provided encoding for industry standards such as AC-3 or DTS formats.

THE VERDICT?

The biggest letdown in this test was the lack of support for ASIO drivers, which would not let me work with traditional auto-input monitoring. Also, not having full support of MIDI operations will be an issue for some. While these are major flaws in my estimation, there are workarounds. On the upside, Adobe has packed some fantastic features and tools into 1.5, making it a real contender in its price range. Add that to integrated CD burning, a bundle of 50 plug-ins, VST support and more than 5,000 royalty-free loops and you've got a real can-do audio production tool.

If you are in the market for a PC-based software for your audio needs that costs less than $300, then Adobe's Audition 1.5 should be at the top of your list. Adobe Audition 1.5 retails for $299 or $69 as an upgrade from Cool Edit Pro 2.x or Audition 1.0.

Adobe Systems Inc., 408/536-6000, www.adobe.com/audition.

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Sound On Sound review July 2004

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BY MICHAEL COOPER

Native Instruments Guitar Rig

A Virtual Truckload of Guitar Amps, Cabs and Effects

Who needs yet another guitar amp simulator/multi-effects box? When it's done this well, the answer is—we do! Native Instruments' Guitar Rig is both stand-alone and plug-in software that chains together numerous virtual guitar stomp boxes, amps, cabinets, mics and studio effects in any order you wish. Applications include rehearsing, live performances, real-time recording and re-amping existing tracks. Version 1.1.2 (reviewed here) included emulations of four tube amplifiers, most of them offering multiple preamp channels; 14 cabinets; five mics (with a choice of five virtual mic positions); and 23 effects units. Guitar Rig's interface affords real-time parameter control using the included Rig Kontrol hardware or any MIDI controller. At the 2004 AES convention, I heard four great-sounding distortion units planned for V. 1.2.

Guitar Rig ships in VST, AudioUnits, RTAS and DXi formats. The software requires a 733 MHz PowerMac G4 or faster running Mac OS 10.2.6 or higher (a 1GHz G4 running Panther is recommended) or a 700MHz Pentium III or 1.33GHz Athlon XP processor (1.5GHz processor recommended) running Windows XP. You'll also need at least 128 MB of RAM (256 and 512 MB recommended for PC and Mac users, respectively). I reviewed Guitar Rig primarily as a plug-in in Digital Performer (DP) V. 4.12 using a dual-processor 867MHz G4 running OS 10.2.8 and 1.8 GB of RAM.

Guitar Rig uses component modeling to emulate tube amplifiers and effects units, as well as filters designed from analyzed impulse responses to emulate various cabinet and microphone combinations. The software requires low-latency ASIO or Core Audio drivers to avoid audible delays on throughput. With DP's buffer set to 128 samples, I couldn't hear any latency while playing my Strat through Guitar Rig.

SPLIT PERSONALITY

Guitar Rig's GUI is essentially divided into two side-by-side frames. The right frame is a virtual rack, in which the various components (amps, cabinets, mics and effects) that make up the current preset are displayed and their parameters edited. The left frame shows a list of banks and presets (up to 128 presets per bank), a search facility for presets, controller assignments for the current preset's parameters, preference settings and lists of components that you can assemble to create/modify a preset.

A few of Guitar Rig's "stomp boxes" and other effects

Guitar Rig's available components include amps, cabinets and mics; distortion boxes; modulation effects (including sub-octave generator and tempo-syncable tremolo, phaser, chorus, flange and rotating speaker simulator); filters (equalizers and wah-wah pedals); dynamics processors (compressor, limiter, noise gate and volume pedal); and miscellaneous processors. Simply drag and drop components into Guitar Rig's rack—and rearrange their order as desired—to create your own preset or modify an existing preset. The signal splitter can be used to chain components in parallel signal paths. All components have adjustable controls for their numerous parameters, and each component's parameter settings can be saved as a template for later recall. Guitar Rig allows 20 levels of undo/redo, but there is no Compare function.

Guitar Rig's rack also includes master input and output level modules, a tuner, a metronome (which can sync to the host's tempo and import percussive audio files) and two "Tapedecks." The latter can play imported .WAV, .AIFF, .AIF or MP3 files (including supplied loops) and perform 16-bit sound-on-sound overdubs (unlooped only) of your live playing. Mostly useful in Guitar Rig's stand-alone application, the Tapedecks cannot sync their playback to a host DAW's transport.

PUTTING YOUR FOOT DOWN

Rig Kontrol can operate as a DI without foot controllers for two guitars, each having its own discrete signal path in Guitar Rig. (Guitar Rig can accept either mono or stereo input and always outputs in stereo.) Alternatively, Rig Kontrol can function as a DI *with* foot controllers for *one* guitar. In the latter case, the control signals from the unit's four footswitches and one footpedal get recorded to one side of a stereo track in your DAW. (Recording the control signal thus provides one method—in lieu of recording MIDI controllers or automation envelopes—to automate Guitar Rig.) Each controller can be assigned to one parameter in any preset. Parameter ranges can be scaled.

Rig Kontrol can be powered by a 9-volt battery or a user-supplied AC adaptor. Unfortunately, the unit provides only enough output level to provide 0dBFS input to -10dBV nominal A/D converters and I/O boxes; all I/O are unbalanced phone jacks.

I set up Rig Kontrol so that two footswitches advanced and retrograded, respectively, through consecutive presets in a loaded bank. The two remaining footswitches switched between clean and gritty amplifier modes. I used the footpedal to modulate either volume pedal level or wah-wah frequency.

CONCLUSIONS

Although many of Guitar Rig's tones are somewhat crispy when the input source is Rig Kontrol, they can be warmed up by using a tube preamp's DI or a miked speaker as input source. Aside from a couple of minor bugs in V. 1.1.2 (which should be fixed in V. 1.2), operation was user-friendly. Most importantly, latency is not an issue and Guitar Rig's countless tonal variations give guitar tracks multiple personalities that would make Sybil swoon. At $499, Guitar Rig rocks!

Native Instruments, 866/556-6487, www.native-instruments.com. ■

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Blue Sky MediaDesk 2.1 Monitoring System

Expandable and Affordable Desktop Speaker Solution

Is the world ready for a diminutive speaker system that is articulate, affordable, basically sounds great and is expandable to 5.1? Blue Sky has created exactly that in the MediaDesk™ 2.1 Monitoring™ System.

The MediaDesk ($599) comprises two satellite speakers and a subwoofer. Both of the satellites (SATs) and the sub have a brushed faux-pewter finish with contoured edges, giving them a modern look that truly sets them apart—they're not just another computer speaker. And, unlike off-the-shelf computer speakers, Blue Sky wants your set to be calibrated. The manual includes extensive guides to set up the system; test files must first be downloaded from the Blue Sky Website (www.abluesky.com). Blue Sky is definitely on the right track here.

COME ON, COME ON, NOW TECH ME

Both the sub and SATs are fully video-shielded. The SATs comprise a 4-inch cast-frame neodymium hemispherical woofer and a 1-inch fabric-dome neodymium tweeter. Using the amplifier that resides in the subwoofer, the frequency response is rated at 110 Hz to 20 kHz, ±3 dB. Everything below 110 Hz goes to the subwoofer, with crossover duties happening in the amplifier and I/O section housed in the sub. The tweeter is locally crossed over at 2 kHz. All boxes are manufactured using solid ¾-inch medium-density fiberboard (MDF).

The subwoofer comprises an 8-inch, coated nonresonance paper-cone driver with a foam surround and vented motor. Isolation and spiked feet are provided to de-couple the unit from the floor. The baffle comprises a dense, 1-inch MDF construction. Anechoic frequency response is rated at 35 Hz to 110 Hz, ±3 dB, with in-room response at 20 Hz to 200 Hz based on a 3,000-cubic-foot room. Short-term power output for two channels driven is 55 watts x2 @ <0.05% THD into 4 ohms @ 1 kHz. Subwoofer power is 65W x1 @ <0.05% THD into 4 ohms @ 50 Hz. Mains voltage is 115/230V, 50/60Hz switchable.

THE SETUP

The I/O section on the sub provides XLR and RCA connections for +4dBu and -10dBV input levels, respectively. The XLR input can handle up to +24 dBu of signal level. There is a 2.1 Overall Gain knob and associated 2.1/5.1 mode selector switch. An Input Attenuator switch matches the XLR input level to the output of your source (+12 dBu or +24 dBu). A Subwoofer Gain knob controls the relative level of the subwoofer compared to the overall system output. There is an additional XLR subwoofer out to feed other subs. The speaker outputs are the familiar binding posts that accept bare/stranded wire, spades and banana plugs. Blue Sky conveniently supplies two 10-foot pairs of copper speaker cable, pretinned—a nice touch to get you up and running immediately.

SOUND ON, I'LL SOUND OFF

I A/B'd the MediaDesk against a set of Alesis M1 actives, which were located on the bridge of the KK Audio desk. Now this is *not* a shootout, but I felt it necessary to listen to something in close proximity to the 2.1's price range that I was familiar with. I used both Red Book CDs and original Pro Tools files.

On first listen, I thought the speaker to be slightly crispy. As the drivers warmed up, this was not the case. As with all speakers, there is a break-in period that varies from product to product. After listening for a short time, I noticed the articulation: You can hear back *into* the mix. The reverb was represented with much more detail and separation than I expected in a speaker of this size and price point. The critical midrange was accurate, although the 125 to 250Hz range was slightly lower in amplitude on some tracks.

Various sources reveal some very nice results. Vocals on every source were virtually identical. Electric and acoustic guitars on the 2.1s were also extremely accurate. Snares and piano came slightly forward on certain cuts. Rhodes tracks were ever so thin in the mid-bass region, but the low bass was stellar due to the inclusion of the subwoofer. Electric jazz guitar sounded "woody," true to the original tone. Cymbals were open and airy—right where they should be and not splattery as you might expect from a little speaker such as this. The clean midrange signal made background vocals sound great. Slide guitar tracks produced nice harmonics, making them seem more alive. Synth parts were well-defined, producing clean upper harmonics. Overall, the 2.1s were the more "open" speaker in every instance.

Higher SPL can produce a bit of splatter that is not generally evident at lower levels. Lovers of low end will appreciate MediaDesk's punchy sub. While mixing "Don't Talk to Me" by the New Hampshire–based group Thinline, I found everything to be right where it should—synths, background vocals and guitars, with the low bass obviously represented in the range that the M1s lack.

GET SURROUNDED

The 5.1 upgrade adds a 3-channel amplifier module to the back of the subwoofer, three additional SATs, a wired remote calibration and volume control, and three sets of speaker wire for $599. Anyone whose sights are set on mixing in surround should not make their speaker decision—in this price range—until they hear the Blue Sky MediaDesk. Definitely a must-listen.

Blue Sky, 516/249-1399, www.abluesky.com. ■

Bobby Frasier is a digital audio product specialist, professional audio consultant and educator based out of Phoenix.

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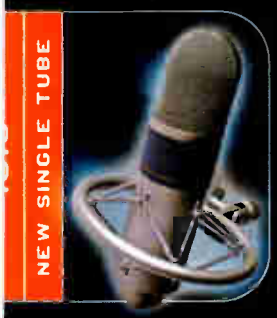
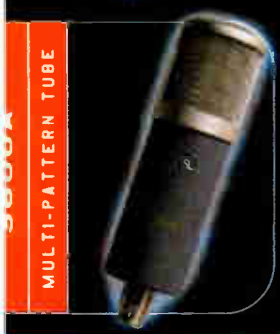
WHAT IS IT THAT MAKES sE MICS THE PROFESSIONALS CHOICE?





Rob Kelly

'We have used the SE Gemini on various sessions at Strongroom Studios, and they stand up to the best valve mics in our collection. They are clear, full and detailed sounding. We bought two for Strongroom, and several of our clients who got to use them have put orders in for their own mics without hesitation.'

Strongroom Studios

Geoff Dugmore

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Sidh Solanki

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Outkast

Steve Levine

'The Gemini studio tube microphone is a very unusual microphone as it combines both the traditional warmth, expected of a high quality studio tube condenser microphone, along with an exceptional transparent high end, normally only available with solid state designs.'

Culture Club, The Creatures, The Beach Boys, Westworld

Paul Borg

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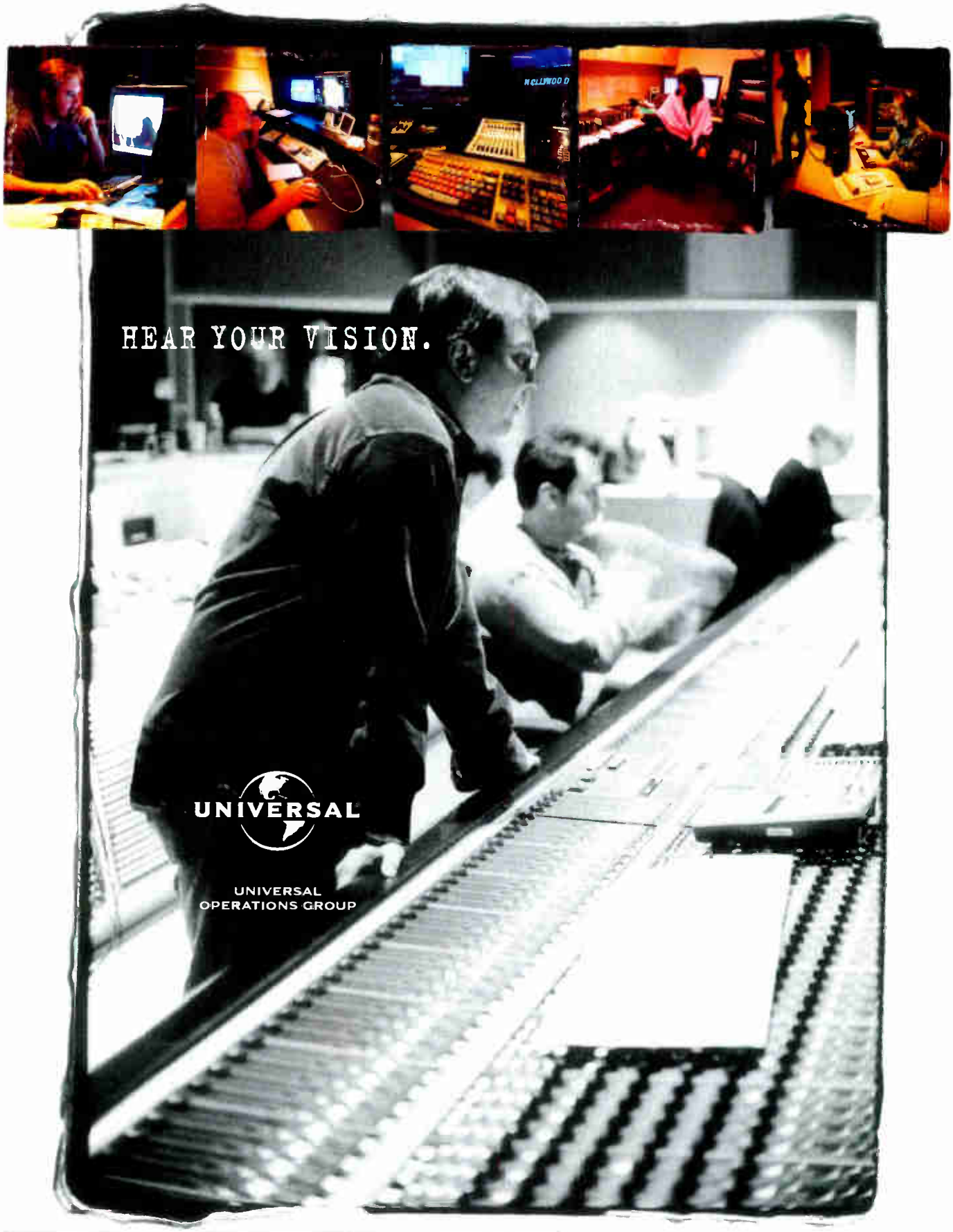

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BY EDDIE CILETTI

The Sound of Vacuum Tubes, Part I

The 12AX7/AU7/AY7 Series of Dual-Triode Preamps

This is the season to snuggle up to a warm ampli-fire with a good book (or this magazine). Amplification is the topic this time—specifically, the sound of vacuum tubes. I must have been a good boy this year because thermionic specialists Groove Tubes (GT) and Electro-Harmonix (EHX) filled my stocking with goodies. Preamp tubes will be evaluated this month; we'll look at power tubes next time. Researching and writing about this subject is like trying to control a volcano, so expect to see continued reports throughout the year and expanded online versions at www.tangible-technology.com and www.mixonline.com.

SONIC DISCIPLINE

A triode vacuum tube and a single transistor are the most basic forms of amplification. The initial difference is obvious: Size! Tubes are "big" on many levels, but in the most literal sense, real estate dictates population density. This form of sonic discipline, an enforced minimalism, is generally responsible for the color we associate with tubes, especially guitar amps. Neither color nor the lack of sameness is exclusive to vacuum tubes. (Think API and Neve modules.) It's quite possible to design a tube circuit that is more linear and less like the expected signature by using—for example—a combination of less-aggressive–sounding tubes, more gain stages and some negative feedback.

Miniaturization (in the form of the transistor and followed by the integrated circuit) ultimately increased the number of gain stages that can be squeezed into ever-smaller spaces. The resulting performance "improvements" have reduced distortion in the window between nominal levels all the way up to clipping (guitar levels). When done right, linear amplification—the proverbial wire with gain or "neutral" sound—has its place in every facet of the recording—especially the monitoring process—so long as we can still play with our crayons.

LABEL, LABEL, LABEL

Because more than 24 tubes were evaluated, to avoid potential mix-ups, shrink tubing was applied as a label. Each tube was cycled several times through a series of tests. Both the hardware and the test parameters were fine-tuned along the way to make the results as meaningful as possible. (I've included an extensive spec comparison chart online.)

The first step was measuring each triode section on a TV-7/U military-type tube tester; the resulting number is only significant relative to the minimum reading as stated in the operator's manual. Some applications require identical performance from each partner in a dual-triode, such as when driving a pair of power tubes. For a screaming-hot preamp, the gain becomes a priority, hence the use of the 12AX7, aka the 7025 and ECC83. High gain comes at a price, an increased potential for noise and microphonics, but there are alternatives.

GAIN, GAIN, GAIN

The preamp emulator is a versatile test circuit with three modes: high gain, low gain and variable treble boost; the latter was not used for these tests. For the 12AX7, the difference between high- and low-gain options was about 6 dB and less for the other tube types.

Before attempting to measure distortion, it was necessary to determine the point just before the onset of asymmetrical hard clipping, which, at about +35 dBu, generated 10-percent distortion using the GT-ECC83 (selected for the V-1 guitar amp position) as reference. The level was then dropped until the high-gain and low-gain distortion readings saddled 1 percent. This turned out to be 18 dB and 12 dB down from +35 dBu—for the respective gain options—for the same GT-ECC83. Consider this window the nominal level region. Note: This tube is modeled after the European cousin to the 12AX7; hence, the name.

DISTORTION

From low gain to high gain—a mere 6dB change—the distortion increased two to four times, with one exception. For all tubes save one, the distortion was primarily second-order, an octave up from the 1kHz test frequency. Here's your big clue, folks: In music, octaves add richness to an arrangement. In an audio circuit, harmonic enrichment makes things sound bigger. When the Groove Tubes 12AX7M was scrutinized for the reason it behaved differently than all of the others, it was found to have about as much third-order harmonic distortion as second-order.

In the test circuit, adding a cathode bypass capacitor increases gain (and distortion) by eliminating a form of negative feedback. This simple circuit variation is the cause

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of the distortion and not the 6dB level change. Without the bypass capacitor, the distortion at +35 dBu is cut in half.

JUDGMENT DAY

Even without listening, the distortion and circuit variations clearly demonstrate that the "big magic" most often attributed to tubes is primarily circuit-related—but, of course, the tubes help! This is not simply due to tubes providing 100 to 1,000 times more distortion than an op amp, but from tubes' broad window of "harmonic embellishment" from nominal to just before clipping. An op amp at the threshold of visible symmetrical clipping generates about 0.5-percent distortion, comprising mostly odd-order harmonics.

Lest you become fearful that *all* tube circuits have this much distortion, note that with the exception of guitar preamps, most hi-fi/preamp designs employ more finesse along with a bit of negative feedback to lower distortion. For example, total harmonic distortion plus noise (THD+N) for the D.W. Fearn mic preamp is 0.2 percent, and this is after passing through two transformers, two gain stages and an impedance converter—that's two or three tubes' worth, none of which are of the 12AX7 variety. The 12AY7 has 3 to 5 dB less gain, depending on the circuit, and about one-third the distortion even in the high-gain mode.

NOISES

I ran two tests for noise (measured and by ear) for spectral (hiss and "rocks") and microphonics. All low-noise metal-film resistors were used in the test preamp as a way of minimizing the color and noise variables. From a guitar-o-phile's perspective, the carbon variety may be preferred, and I am told that modern carbon types perform better over time than their 40-year-old predecessors. The "spectral" noises, when present, were generally constant. Very few of the tubes had major noise issues, partly because several had been pre-selected. Noise measurements and audio samples are provided online.

Microphonic describes a mechanical sensitivity that can be tested by tapping on the tube and listening. Ideally, the response to such stimulus should be a muted "thunk." A resonant "ding" is a sure sign that the tube will "sing along" if located in the same space as the speaker. Microphonic tubes have a greater potential to feedback and squeal.

IT'S ALL IN THE GENES

There are many issues and opinions about the sound of tubes, not the least of which are the design variations of supposedly identical types such as the 12AX7/7025 and ECC83 family. While the critical stuff is h den to the eye, the plate structures are most obviously visible part of any tube. my samples, Mullard, RCA and Telefunk'n look similar, but never identical, as what I believe to be earlier Sylvania v sions. Later Sylvania/ECG/Phillips ty look like elongated versions of GE's st There are black plates and gray pla smooth plates and corrugated plates, l plates and short plates, and some Euro v ations that look like other tube types s as the 6DJ8 and 6GH8. The point of this tour is that these are all models for toda versions and it is obvious that everyone experimenting.

If you'd like to know more about history of these tubes and how mod tubes are selected, the large-format *Tu Amp Book* (from Groove Tubes) is a w derful resource. It might surprise you learn that GT reveals the sources for all its tubes. On the opposite coast, look clo ly at the tubes that have come through Sovtek/EHX pipeline (via New Sen Corp.) and you'll see their heritage, as well. All pay homage to their forebears. I believe you can still get good tubes by paying tra for the pre-tested versions. Buy untested, off-the-shelf tubes is a crapsho

IN SUMMARY

Recording, audiophile and guitar enthusia may appear to have dissimilar needs a preferences, but it's not as if tubes we made specifically for guitarists, then or no The 12AX7 was a consumer-grade tu then, and while the 7025 was its low-noi "select" version, in both cases, it was d signed to minimize the tube count by pr viding more gain than any other tube. A such, it tends to be wild and unruly, so your guitar amp (V-1 or V-2 position), mi preamp or Chinese tube mic is too noisy or microphonic, try a selected low-noise, lo microphonics version.

Conversely, replacing the 12AX7 with 12AY7 will chill things quite a bit. With the 12AX7/AU7/AY7 Series, you are free to experiment without fear of damage—even it's not a perfect circuit match. With know good tubes, performance is then in t hands of the designer. I certainly learne how circuit variations affect distortion. Next month, we'll examine power tubes.

MIX ONLINE EXTRAS

Eddie thanks Aspen Pitmann and Steve Good at Groove Tubes and Rick Stevenson at Electro-Harmonix for supplying the tubes, as well as D.W. Fearn for his assistance.

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World Radio History

The Fab Five, reunited and back on the charts (L to R): Roger Taylor, Nick Rhodes, Simon LeBon, Andy Taylor and John Taylor

DURAN DURAN

NEW WAVE KINGS RESUME THEIR PLACE ON THE DANCEFLOOR

By Heather Johnson

I confess: I am a former jazz shoe–wearing, button-collecting Durannie. From age 12 until my sophomore year of high school, I scoured my local mall record store for every album, single, 12-inch dance remix and picture disc I could find. Apparently, I share my obsession with good company. Dallas Austin—producer of chart-topping albums and singles for ABC (Another Bad Creation), Boyz II Men, TLC, Brandy, Monica, Fishbone and, most recently, Pink, Gwen Stefani and Janet Jackson—was also a self-described "Duran Duran nut." But instead of cutting out Fab Five pictures from *Bop* magazine, Austin ogled Nick Rhodes' keyboards.

Two decades later, Rhodes, Simon LeBon and John, Roger and Andy Taylor (no relation) tapped one giddy Austin, along with Don Gilmore (Good Charlotte, Linkin Park, Sugar Ray) and Nile Rodgers (Madonna, David Bowie) to co-produce *Astronaut*, the band's first studio album with all original members since their 1983 release, *Seven and the Ragged Tiger*.

After six sub-par, partially Duran albums, the original five got together to discuss a new album. It was the first time they had sat in a room together in 15 years. "Within five minutes, we were arguing about the same things we had the last time we were in a room together," recalls a slightly jetlagged Rhodes from his London home. "But it quickly turned to, '*How* are we going to do the album?' There wasn't really much question about anything else."

The initial plan was pretty straightforward: Record and release the album, then go on tour. In 2001, they rented a house near St. Tropez in the south of France, set up a Pro Tools studio and launched into a prolific period of songwriting and pre-production. "I knew from the moment we plugged in that there wasn't much apprehension," says Rhodes. "Everybody came in wanting it to work. Within minutes, we'd hit on something really great and finished a song the first evening."

During their first 12-day writing session, the group wrote three songs that ended up on *Astronaut*—"Bedroom Toys," "Taste the Summer" and "Nice"—along with the seeds for "Want You More." After a few more sporadic but fruitful writing sessions, the group had more than 30 songs in the works. Unfortunately, when they were ready to hit the studio, the record industry was in one of its worst slumps in years.

"Every time we'd start talking to a label, the CEO would get fired or, in some cases, the whole label had disappeared!" says Rhodes. "It was becoming like a comedy sketch. Then, somebody suggested, 'Let's play some shows. We can test the waters and get our live show up to speed.'"

Their first "test run," at the Budokan Arena in Japan, sold out in 30 minutes and was followed by a 25-city U.S. tour and a sold-out British tour that included five shows at London's Wembley Arena. The New Romantics were back and they had a record to finish—pronto.

—CONTINUED ON PAGE 105

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THE NEVILLE BROTHERS

STILL THE FIRST FAMILY OF FUNK

By Blair Jackson

It's been five years since New Orleans' Neville Brothers recorded an album in the studio. During that time, they've toured plenty, as they always have, ripping it up coast to coast with their incendiary funk, raucous Mardi Gras party anthems and socially conscious tunes that have been dipped in the group's deep reservoir of rock, R&B and gospel influences. Not surprisingly, their new album, *Walkin' in the Shadow of Life* (Backporch/EMI Records), is a family affair through and through. Besides the frontline of seemingly ageless brothers—heavenly voiced Aaron, keyboard funkster Art, reed titan Charles and singer/percussionist Cyril—the disc features Aaron's son Ivan on keys and Art's son Ian on guitar.

Most of the songs were either written or co-written by various Nevilles, and they reflect the brothers' commitment to family, community and spiritual nourishment. And the two cover songs chosen for the disc say much about where the Neville Brothers are coming from: Their gorgeous, mostly a capella version of "Rivers of Babylon," originally cut in 1969 by Jamaican group The

—CONTINUED ON PAGE 107

The Neville Brothers are (clockwise from bottom left) Art Neville, Aaron Neville, Cyril Neville and Charles Neville.

ALAN PARSONS

TALES OF ELECTRONIC IMAGINATION

By Blair Jackson

Over the course of a career that spans more than three decades, Alan Parsons has been a successful engineer, producer and recording artist—a true triple-threat. Following early engineering triumphs with the likes of The Beatles, Paul McCartney, Pink Floyd, Al Stewart and many others, he enjoyed popular acclaim with his ever-shifting eclectic band the Alan Parsons Project, even landing a passel of unlikely Top 20 hits, including "Games People Play," "Time," "Don't Answer Me" and the 1982 smash "Eye in the Sky." A top-flight keyboardist with a knack for creating adventurous-sounding albums, Parsons has dabbled in many styles through the years, including rock, progressive, electronic and symphonic, and turned out his share of ambitious "concept" albums. (Remember those?) All the while, he has established a reputation as a sonic guru of sorts—he has been a fixture at AES shows for years and is happy to share his recording secrets with anyone who's interested.

PHOTO: ED COLVER

Parsons' latest disc, *Valid Path* (Artemis/5.1 Entertainment), finds the Britturned-Santa Barbara, Calif., resident moving more toward electronic and computer-generated music. Certainly, there are still familiar touchstones here for his fans—from the warm keyboard textures, to the cool/cryptic Storm Thorgerson package design, to spirited remakes of two APP classics: "Mammagamma" (from *Eye in the Sky*) and "Recurring Dream With a Dream" (which combines two songs from *Tales of Mystery and Imagination*) spearheaded by his 26-year-old son, Jeremy. But most of Parsons' collaborators this time out are new, and they've pushed the music in some interesting directions. P.J. Olsson, who is the lead singer in Parsons' current touring band, had a hand in writing and programming several tracks on the album. Parsons also enlisted dance/DJ sensations Crystal Method (Ken Jordan and Scott Kirkland) to help on one track, Simon Posford of the British electronica act Shpongle on another and even Mexican computer group the Nortec Collective,

—CONTINUED ON PAGE 108

World Radio History

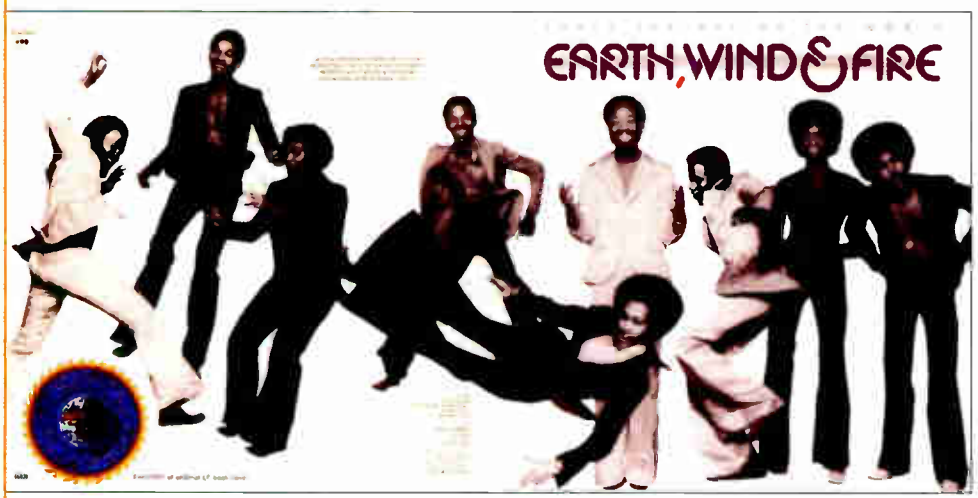
EARTH, WIND & FIRE'S "SHINING STAR"

By Robyn Flans

Maurice White took a walk one night early on in Earth, Wind & Fire's three-week stay at Caribou Ranch in rural Colorado for the recording of their landmark 1975 album, *That's the Way of the World*. When he looked up in the sky and saw the beauty of the stars, he says he was overwhelmed and inspired. "We are all shining stars in our essence," says White, who then took his ideas to the band. Both Philip Bailey and keyboardist Larry Dunn are listed as co-writers. Dunn came up with the chorus hook on his Rhodes. "Maurice would have these great rhythms and then he needed a chord structure for what he was coming up with and that's where I came in," says Dunn. "I came up with a lot of the music and then he and Philip got the lyrics."

"The chorus came first," Maurice White recalls. "It was one of those gifts that happens sometimes when you're making records." Despite the fact that they had two previous albums out, the band wasn't known to the masses until this album and particularly this song—their first Number One pop crossover.

"This was an important album—one that signaled whether we would go on and become a mainstream group or just be an R&B act," bassist Verdine White recalls. "At that particular time, which is different than radio today, they didn't really cross a lot of black acts over to mainstream radio. We already had two Gold albums—*Open Our Eyes* and *Head to the Sky*—but still, most of the mainstream didn't know who we were."



Everything changed after "Shining Star" broke the barrier. From then on, the hits continued through the end of the '70s until the mid-'80s—among them, "Sing a Song," "Getaway," "Serpentine Fire," "Fantasy," "Got to Get You Into My Life," "September," "Boogie Wonderland," "After the Love Has Gone" and "Let's Groove." The group, which got its start in Chicago in the late '60s, was even nominated for a Grammy last year for Best Traditional R&B Vocal Performance for "Hold Me," from their album *The Promise*, and still continues to perform onstage with three original members (Bailey, Verdine White and Ralph Johnson) and an occasional appearance by founder Maurice, who retired when he was diagnosed with Parkinson's disease in 2000. They also have a new CD that will be released in February.

But nearly 30 years ago, the group was struggling for acceptance and "Shining Star" was cut with pop success in mind. According to Maurice White, engineer George Massenburg masterminded the interesting texture of the track, which features an R&B-infused verse and a toned-down pop chorus.

"The verse is rockin' and the chorus is much smoother," states Maurice White. "That's what we were going for—the contrast between the chorus to the verse so it would give you a lift. To make the choruses smoother, we would add more reverb and a different EQ. We were working at Hollywood Sound, a small studio tucked in between Heider Recording and David Hassinger's Sound Factory. Up to the time we got there, they were home to Mac Davis and Glen Campbell and producers such as Jimmy Bowen—a very different vibe, to be sure. One of the best features of the studio was the two live echo chambers: one small, one large. I didn't know how good we had it until much later.

"George was so innovative," Maurice White says of Massenburg, who went on to work with the band on their subsequent release, *Gratitude*, and then helped put together their own studio, The Complex.

It's funny that he sings the praises of the legendary engineer, as Massenburg—who was hired by EW&F management after working with their other artists, Little Feat—recalls his first day on the job as pretty interesting: "After the first track we recorded, they had a band meeting in the studio hallway and voted to get rid of me," Massenburg explains, "because they couldn't dance to the playback." Maurice White stuck up for him, but for the next playback, Massenburg really cranked up the volume, which seemed to be what the band was missing.

For "Shining Star," the basics comprised drums, bass, guitar and piano, and according to Maurice White, he was the drummer on the track. Massenburg, however, remembers that it was Freddie White's snare drum overdub that seemed to center the track.

"There was a track with five people just raging—guitars, organ," Massenburg says. "Everything about the track was chaotic and noisy until Fred White put down a straight-down-the-middle kick and snare. There are hand claps in it, but everything is keyed off of the snare's backbeat and all those original crazy, wild guitars and the wild saturated organ appears for one pop every two bars. Key to the track were Larry Dunn's keyboards."

"The Rhodes has two ¼-inch plugs on the side so you don't have to mike it, and it's stereo," explains Dunn, who can be

World Radio History

heard on a recently released EW&F tribute album, *Devoted Spirit*, and will soon release his second solo album. "I had this little pedal thing I would run through it, which Massenburg hated, because it kind of compromises the integrity of the sound a little. I always used it live, so on *Gratitude*, he didn't have any choice, but on this one, he said, 'Can you please not use that and I'll put something on it.'"

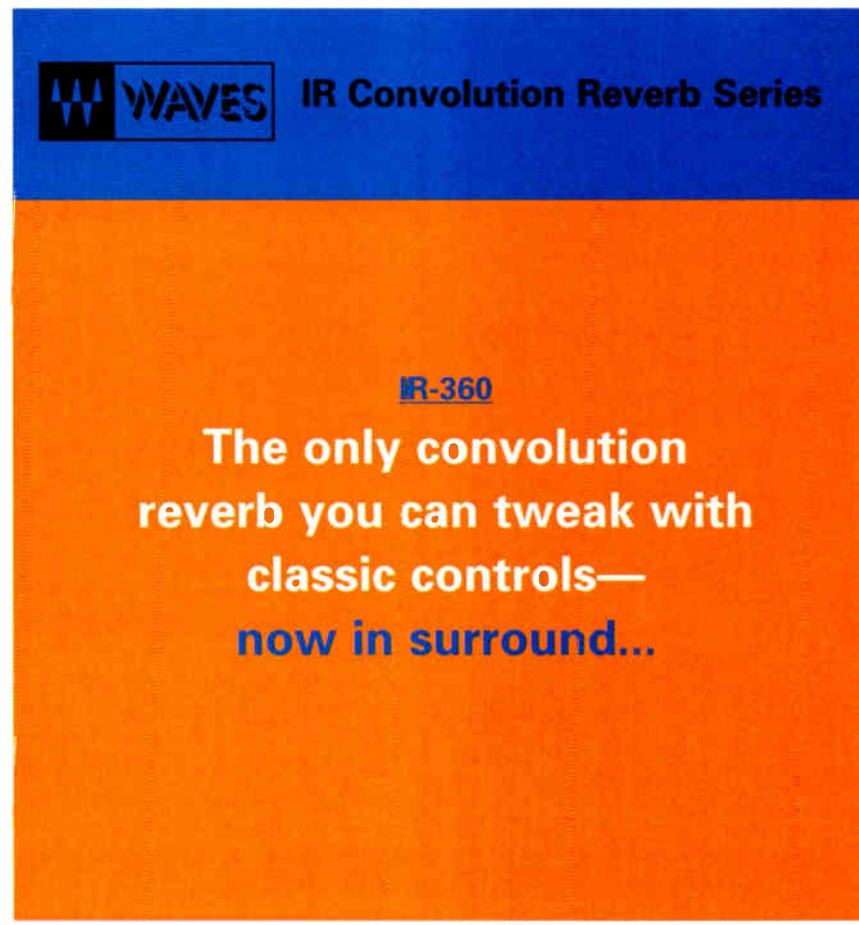
"If you listen to this track carefully, there's a tremendous amount of stuff going on in the backbeat," says Massenburg. "You hear a couple of musicians and horns and the singing, which I pieced together track by track. It was Maurice and Philip—multiple passes, each very carefully put together."

Maurice White says the vocals were indeed a "process." "Philip and I sang all the parts and we stacked the vocals. We'd record everything 20 times and stack them about 20 times to make them sound like a group of guys," he says, adding that he was very influenced by Sly and the Family Stone's vocals.

According to Maurice White, the stark a capella fade at the end of the song was his idea. "I wanted the sound to change on the vamp, so I told [Massenburg] to take all the echo off—all the reverb off the vocals—to see what would happen and we liked the sound."

"The end of 'Shining Star' was originally a *slow* fade where the instruments and the reverb gradually disappeared and the four main vocal tracks move right up until they are right in your face," says Massenburg. "The song was too long. We made three edits to pull out choruses—'Shining Star for you to see, what your life could truly be'—so that the song ended in three sections, which were like film 'jump cuts': three sections jumping closer and closer to you."

Massenburg says he was less than thrilled with the Caribou equipment—especially the Ampex 1000 24-track. "We were in there after Elton John, who, rumor had it, also had trouble with the machine. The word was that Elton John had offered [studio owner] James William Guercio a lot of money for the machine and Guercio thought he was saying it was such a valuable machine and he really hiked the price up, and said, 'By the way, what do you want the machine for?' and Elton said, 'I want to take it to the highest f***ing mountain on your f***ing ranch and push it over.' It was such a piece of crap. The studio was completely dead. I overdubbed as much as I could in this little live area right in front of the control room window, just to find some kind of life. You would do anything to put some kind of life in it. Then we overdubbed it at Hollywood



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Sound and Sunset Sound in Los Angeles and the strings were done on that great sound stage in Burbank, Warner's Music One."

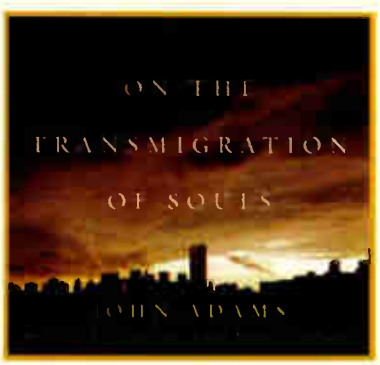
After overdubbing guitars and vocals at Hollywood Sound, the horns were cut at Sunset Sound. According to Massenburg, the horn charts were due, for the most part, to co-producer Charles Stepney, longtime associate of the band who died suddenly of a heart attack during the recording of EW&F's later 1976 effort, *Spirit*. "Charles Stepney was brilliant," Massenburg says. "If he had lived, he could have been one of the great film composers. He had original ideas and a great sense of music. Charles Stepney basically built that sound. He was a genius, a visionary. He did the horn charts and we recorded them in Studio 2 at Sunset Sound, a live room. Those horns were screaming."

"Charles was our George Martin," Verdine says. "We were very young at the time and learning about music, so he was a great father figure. He was able to harness all that sound we had and have it make sense, musically. He was able to take the raw talent and make it sound sophisticated. He worked with us a lot on parts and chords and things like that. If we had to overdub, he'd work with us individually, and in that process, he would explain the music and music history."

Massenburg recalls mixing the album

Cool Spins

The Mix Staff Members Pick Their Current Favorites



John Adams: *On the Transmigration of Souls* (Nonesuch)

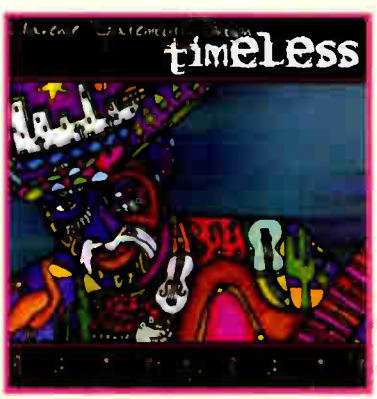
This stirring 25-minute opus by contemporary classical composer John Adams was commissioned by the New York Philharmonic and Lincoln Center as a tribute to those who lost their lives in the World Trade Center attack of 9/11/01. It rises out of an audio cityscape with a young boy repeating the word "missing," as other voices drift in an out reading names of some of the missing. A heavenly choir (the Brooklyn Youth Chorus) and the orchestra slowly enter the scene, somber yet beautiful, conveying both the numbness and sorrow we all felt in the immediate aftermath of the tragedy. As the piece progresses, the spoken track becomes more personal—the voices say things like "We will miss you" and "We love you, Louie, come home"—and the orchestra and choir gracefully build from a haunting, hymn-like plateau to a great, cacophonous *roar* that somehow captures the madness, confusion, rage and shattering grief of the event. Then, Adams gently drops us back in the sad aftermath: "My sister..." "My brother..." "It was a beautiful day..." and the sounds of the city are heard once again. It's a remarkable work that will affect every listener differently, but it's impossible not to be moved by its graceful arc.

Producers: John Adams and Lawrence Rock. Engineer: Rock. Soundscape engineering: Mark Grey. Recorded in concert at Avery Fisher Hall (NYC). Mixed by John Kilgore at Masque Sound (NYC). Mastering: Bob Ludwig/Gateway Mastering (Portland, ME). *—Blair Jackson*

Clarence "Gatemouth" Brown: *Timeless* (Hightone)

Gatemouth Brown has never felt restricted to any one musical idiom—rather, he embraces them all, and time and again, he's shown himself to be a master of most.

—CONTINUED ON PAGE 108



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"over and over again" over a three-week period. "There was all kinds of stuff on the track, but I don't remember it all," he says. "I had to put Maurice's original drums in a heavy Eventide Phaser and lay them well back in the mix. We used early digital delays—before good or even acceptable filtering was implemented—and they made the most horrendous sounds: squeaks and squeals. The reverbs were certainly the live chambers at Hollywood Sound. The processing was a lot my stuff, a mic pre I happened to be building, a compressor I happened to be building and one of my early EQs. That was in the days when I was using a hand-modified KM84 for vocals. There was always a rat's nest of wire and circuit boards on top of the console."

The song earned the band their first Grammy for Best R&B Vocal Performance By a Group, but according to Verdine, the climate for African-Americans was much different in the mid-'70s than it is now. "At the time, African-Americans didn't get their Grammys on television, so we didn't go. We didn't think too much about the awards. We just stayed focused on the music."

When Maurice White thinks about "Shining Star" today, he says, "I look back at that song as a move forward in the sense of recording. A lot of people tried to imitate it."

Massenburg adds, "Could you do that song today? And if you did, could you get it on the radio? Think about that. It was really innovative and I'm disappointed that we don't innovate strongly, clearly and independently today. And even if we did, we wouldn't be able to get it through Clear Channel." ■

DURAN DURAN

FROM PAGE 100

In 2003, Duran Duran inked a deal with Epic and hired producer/engineer Gilmore to work on two songs. The sessions went so well, he stayed for six weeks and co-produced and engineered eight of the album's 12 tracks. "Don chose very carefully what needed to be done, so we ended up with all the right parts in the end," Rhodes says. "And he was fun to have around, which is half the battle: finding [a producer] who fits the vibe and makes everyone feel good about what they are doing."

The group recorded on the 72-channel Neve 88R at London-based Sphere Studios' Studio One using a Pro Tools|HD workstation as a tape machine and editing tool. Designed by acoustic consultants Munro

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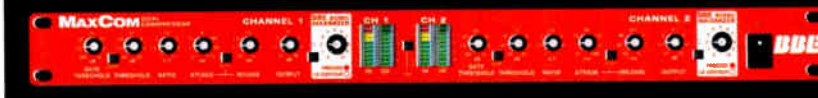

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Associates, Studio One offers 5.1 monitoring via Dynaudio M4 speakers, ISDN 2 capabilities and a live room large enough to accommodate up to 35 musicians, with four fully floated isolation booths and 6-meter-high ceilings.

The group also welcomed back Rodgers (*Notorious,* "Wild Boys") to co-produce "Point of No Return" and add vocal production to two tracks. "We all just love him, and we've worked with him before very successfully," Rhodes says. "In truth, we probably got him in a little too early because a lot of things changed. But 'Point of No Return' remains in its entirety. To me, it's one of the most beautiful moments on the album."

Austin, whom Rhodes likens to a young Rodgers, co-produced three songs, including two of the album's brightest spots: "Want You More" and "Astronaut." "[Dallas] said, 'I want to stack up the harmonies,'" recalls Rhodes. "'I want that uplifting sound that you always had in those big Duran Duran choruses.'" Austin adds, "I wanted to bring back that groove they had, but make them sound modern and hip at the same time."

Austin accomplished the task by not only using his Grammy-winning production skills, but by throwing a bash in their honor. "The lights were completely down, wine bottles were piling up and there was gear...*everywhere*! Mountains of gear," Rhodes recalls. "It was really party time for us, and I think that shows in the tracks we worked on with him."

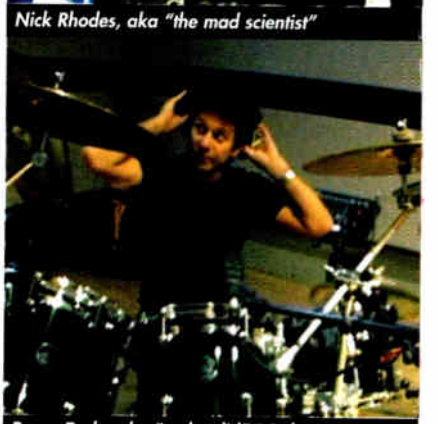
Rhodes' all-analog synth cache includes many used on Duran Duran's first albums, such as the Roland Jupiter8, Sequential Circuits Prophet-5 and the Memorymoog. He also uses the Minimoog and admits to "quite liking" the microKORG synthesizer/vocoder. "But I used the original Roland vocoder on 'Nice,'" he says, "and I process a lot of things through cheap, nasty pedals."

"He had so many things I'd never seen in my life before," Austin adds. "He'd pop in with a different keyboard and go, 'Look at this! What do you think about this!' He's like the mad scientist of analog keyboards!"

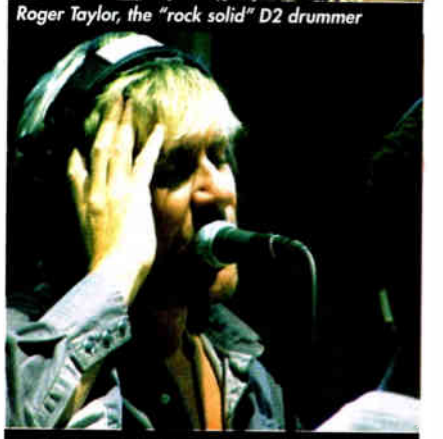
Austin usually brings his own keyboard collection to sessions; he and engineer Rick Sheppard have been known to travel with 7,800 pounds of gear stripped from Austin's DARP Studios in Atlanta. However, due to time and customs constraints, the duo brought only two laptops and two 250-gig hard drives loaded with Sheppard's entire library—sounds he's collected as Austin's programmer and engineer for the past 15 years.

With Austin onboard, "Astronaut" evolved from a ballad to an assured dance-pop hit. "I said, 'Can I just take it and put it on speed?'" recalls Austin. "They re-wrote the verses and took it in another direction. When they finished, we were like, 'Whoa!' It became the title track for the album."

Nick Rhodes, aka "the mad scientist"



Roger Taylor, the "rock solid" D2 drummer



Simon LeBon working the mic

Sheppard recorded the band through Sphere's Neve to a Pro Tools|HD4 with Logic Audio on the front end. They had rented Pro Tools|HD and HD3 units, but both lacked the processing power needed to handle Sheppard's massive library. "I use [Tascam] GigaStudio for my sample library," he says. "I run that on a PC and run Logic on the Mac, so I just use the PC as a sampler. I have a couple hundred thousand .WAV files and tons of Gig files—I pretty much own all the Gig libraries out there—plus I converted all my Akai libraries to CD-ROM."

Needless to say, Sheppard uses more plug-ins than outboard gear. Aside from the Neve's EQs and effects, an API 500-6B Lunchbox EQ and a Universal Audio 6176 for LeBon's vocals, Sheppard relied mainly on SoundToys, McDSP and Emagic's Logic plug-ins. LeBon sang through a Neumann TLM 103. "It sounded crisp and clear with the UA 6176," he says. "I put it on the One setting to give it color. I set a Mac flat screen on top of the 6176, so I have it right by my keyboard."

Andy Taylor's guitars were miked with a Shure SM57 through a Peavey amp. Other times, Taylor used Line 6's Variax guitar modeling tool, sent through Line 6's Vetta II tube amp and the PODxt.

Sheppard used a standard mic setup for Roger Taylor's drums, choosing Sennheiser 421s, AKG C 414s and a modified, custom-made Audix sub kick mic. "We take a [Yamaha] NS-10 subwoofer, lead it to an XLR and run it through an attenuator," says Sheppard. "It gives you a lot of low-end thump."

Rhodes, known as "the vampire" of the group because of his night owl tendencies and preference for dark control rooms, often spends several days going through sounds and layering keyboard parts with his technician, Mark Tinley. "I see what fits where, what melodies need to be doubled up or what snare drums need an extra little crack on top of them," Rhodes says. "Andy will see if he can double my parts, and I'll see if he needs chords under his rhythms. Then, once we've got a track we're really happy with, I'll work on detail again." Sheppard adds, "Nick is so into coming up with something different and innovative and spends the time to make a patch and not just use what's stock."

Rhodes and the rest of the group's tweaking continued well into mix mode, which was handled by Jeremy Wheatley (David Gahan, Sugarbabes, Dandy Warhols) at Sanctuary Town House Studios and Olympic Studios, both in London. "He really had an enormous input," Rhodes says of Wheatley. "He makes things sound so lush, and feel as though in cinemascope—very exciting, dynamic and warm all at the same time."

Wheatley had his work cut out for him; most songs contained more than 100 tracks, some of which dated back three years. To further complicate matters, the band had to listen to and approve mixes via edNET due to a series of U.S. radio promotions that took place in the middle of mixing. "We were running all over America, and in each city we

World Radio History

hooked up the satellite link and directly listened to the mixes live and tweaked everything like that," says Rhodes. "On some songs, we completely changed things at the last minute. John and I changed the whole vibe of verse two of 'Bedroom Toys' with Jeremy over the edNET system."

Astronaut dropped to Planet Earth on October 12, along with a limited-edition "deluxe" DVD. Based on the positive reviews and rapid-fire arena sellouts, Birmingham, England's pretty boys have got more than nostalgia on their side. "They're model is that they're only as strong as their weakest link, so if somebody doesn't like [a part], they work it out," says Austin. "Everybody had a goal to stand up to their legacy," Sheppard adds. "Besides the lack of sleep and 18 hour days, it was a really great experience."

MIX ONLINE EXTRAS

THE NEVILLE BROTHERS

FROM PAGE 101

Melodians (and popularized on the soundtrack of *The Harder They Come*) is about banding together to overcome adversity; and their swirling, high-octane, lyrically updated take on the 1970 Temptations hit "Ball of Confusion" captures the manic energy of a world seemingly spinning out of control.

Walkin' in the Shadow of Life marks the first Nevilles album to be recorded in their own studio, which is located on the second floor of a house in the heart of the French Quarter. "They took the upstairs of this house and completely gutted it," says engineer James Bevelle, who, along with album producer Milton Davis, hails from Alabama. "Then they built a control room, put in Pro Tools, a Control24, lots of outboard gear and, of course, a lot of plug-ins. We had mics all over the place, even in the bathroom—which *did* sound pretty good," he says with a laugh. When I ask Art Neville whether the studio reminds him of the old New Orleans house where the group had recorded their landmark late-'80s albums, *Yellow Moon* and *Brother's Keeper*, with Daniel Lanois and Malcolm Burn, he says, "Yeah, except this place is really *ours*. We still had to pay in that other place. This one really feels like home."

Producer/musician Davis and engineer Bevelle have worked on a number of projects together through the years, and they decided from the outset that they wanted the Neville's album to reflect the best of old and new technology. So there is some scratching, loops and other hip hop elements that

World Radio History

give the disc a contemporary sheen, but the bass lines—all by Davis—"are all reinforced with Arps and Moogs, the same Moog sub-bass is on just about every track," Davis notes. "It gives an extra kick to the funk; we wanted this to be a very funky album.

"You don't go in and work with the Neville Brothers and try to change what they're great at," he continues. "We knew from the beginning it was going to be Rhodes and B3 and Charles' saxophone and lots of percussion, and then all those great vocals. That's who they are. We spent a lot of time in the studio working on grooves, just jamming really, and a few songs came out of that." Besides playing bass, guitar, some keys, percussion and programming, Davis co-wrote a number of songs on the album; indeed, his strength as a writer is one reason he was chosen for the project.

You don't go in and work with the Neville Brothers and try to change what they're great at. We knew from the beginning it was going to be Rhodes and B3 and Charles' saxophone and lots of percussions, and then all those great vocals.

—*Producer Milton Davis*

"They were looking for a cohesive record where each song was like a chapter in a book and the lyrics and the sonics held it all together," he adds. "It's almost like an autobiography." Some tracks were worked from the rhythm up; others featured a number of musicians at once in the studio. A few are fragmentary jams showcasing one or more of the brothers. "They would come in and out as they were needed," Davis says, "but when it came to the vocals, most of those were done with everyone at the same time."

"It's amazing how they lock in on those harmonies," Bevelle adds. "They're so good at stacking." Bevelle did a lot of ghosting on vocal parts and also used outboard and plug-in delays to good effect on vocals and guitars.

"Man, James Bevelle is like Mr. Spock," marvels Art Neville. "He knows stuff with his eyes closed. Anything we wanted—*anything*—he was able to do it. Between him and Milton Davis, we really could really cover a lot of ground pretty fast. This was a fun record to work on for us. Everything felt great, everyone was involved."

Still, Art is completely upfront about his intentions for the album: "We want to reach people with our message," he says. "This album is talking to people—to the kids. Whether they'll listen or not, I don't know. Maybe some of our older fans will have to pass the lessons along. But the world is in turmoil right now so we had to say something. It's a message and a story. And, hopefully it's right on time. Check it out, man." ■

ALAN PARSONS

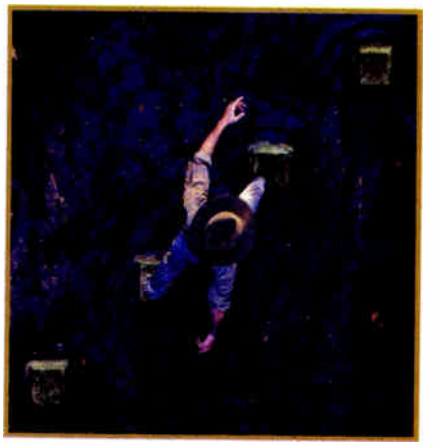
FROM PAGE 101

"who go out onstage in a group of varying sizes, sit side-by-side and play laptops," Parsons says. "It's quite amazing, really." There is this a nice bit of "old-school" magic, as well: Pink Floyd's David Gilmour contributes some inimitable guitar wailing on the album's first track, "Return to Tunguska."

"My whole approach to recording changed dramatically on this album because it's the first one I've done to disk, so all the approaches to everything were different," Parsons notes. "Not only did I not have a tape machine running, but I was using Nuendo for the first time and plug-ins for the first time. I have a long history with Steinberg [makers of Nuendo] and they've been very helpful along the way.

"Actually, when I started the album two years ago, I was still a bit paranoid [about using a workstation] and I said, 'We've got to back this up,' so we backed it up to Tascam 8-track [DA-88]. I was still thinking that everything had to be on separate tracks and controllable on a separate fader and all that, but I kind of grew up in the computer world as we progressed on the album and I started feeling okay about backing up on another drive. I'm just as paranoid about erasing something or a system crash as I am about earthquakes and fires. By the second year of the album, I had FireWire drives all over the place."

The album was mostly recorded at Parsons' Santa Barbara home studio, which he built in two bedrooms and connected with a window. He has eschewed a traditional console setup, opting to record and mix using Nuendo, HMI I/O units and various



plug-ins. "If I wanted to grab a fader every now and then, I had a Houston controller for Nuendo, which gives some of that tactile feel. I would have been curious to put some real analog outboard processing on it, but it's more of an electronic album and computer-generated, so I made the decision to go all-computer. That philosophy might not stick with me, but I like the way this one came out. I'm afraid my LA-2As are gathering dust, but I guess there's always eBay," he chuckles. "One big lesson I learned from this project is that it's possible to make albums in small spaces now."

Musically, he employed "quite a few soft synths, being controlled with the sequencer, but the real star of the show was the Yamaha Motif. Now I've got the SE and it's so much better than the original."

Parsons acknowledges that "it's hard for anyone who's been around as long as I have to get anything played on the radio, so in a way, making the electronic album was another deliberate move to try and go into a different area. That said, it wouldn't be the first time someone has said I was the 'godfather of electronica.' I feel more like the *grandfather*," he says with a laugh. "But I'm really enjoying it right now, and my [live] band has been playing the new material admirably. We're finding the new and the old blend really well." ■

Cool Spins, *FROM PAGE 104*

There aren't many players who could get away with an album that mixes jazz standards like "Soft Wind" and "Satin Doll" with Joe Zawinul's soulful "Mercy, Mercy, Mercy," gut-wrenching blues and jump blues, Cajun-influenced pieces and country songs. Gate tackles 'em all, unleashing that distinctive and highly expressive guitar on ballads and boppers alike, showing his supreme good taste and imagination as a player. (There's the requisite amount of Gatemouth fiddle on here, too.) Throughout this superb-

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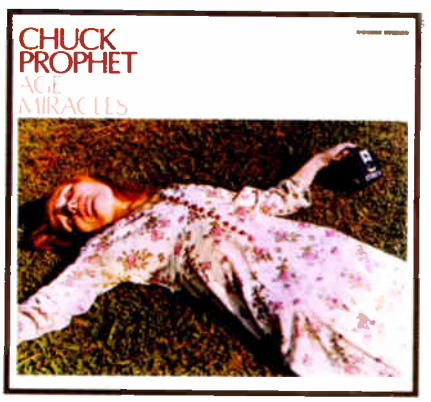
sounding disc, he's supported by a stunningly good band anchored by bassist Harold Floyd and drummer Lloyd Herman. Gate's comically bizarre spoken intro to "The Drifter" notwithstanding, this is an album of seriously beautiful and, at times, swinging music. My dark horse favorite: a lyrical reading of "Unchained Melody" featuring Gatemouth at his most delicate and lovely piano work by Don Matrazzo. Cool from top to bottom!

Producers: Clarence Brown and Jim Bateman. Recorded and mixed by David Farrell. Studio: Ultrasonic (New Orleans) and live on location. Mastering: Peter Dinkins/Master Digital (New Orleans). *Blair Jackson*

Chuck Prophet: *Age of Miracles* (New West Records)

Chuck Prophet's seventh album arrives after 12 years as a solo artist, peaking with his 2002 "adult alternative" single, "Summertime Thing." This go 'round promises to raise the



San Franciscan's profile even higher, as he raises the bar with a mix of blues ("Automatic Blues"), funk, psychedelic pop ("Age of Miracles") and country rock.

Prophet's signature drone tumbles out Lou Reed–ish poetic ramblings on "You Did (Bomp Shooby Dooby Bomp)," while wife Stephanie Finch lays down retro vintage keyboard parts. The combination is wistful, like someone mulling over the events of a long night in the city's dark watering holes while riding a near-empty late-night bus home. Players hail from Nashville, San Francisco and points between, creating an album that's crafted, modern and full of fine writing and melody, but not without its roots.

Producers: Chuck Prophet, Eric Drew Feldman. Engineers: Justin Phelps, Craig Schumacher, Dave Trumfio, Michael Krassner, Roger Moutenot. Studios: Roly's Pad, Hyde Street, The Plant (San Francisco), Wavelab (Tucson, Ariz.), Kingsize Sound Labs (L.A.), Studio 491 (Nashville). Mixed by Roger Moutenot at Studio 491 (NYC). Mastering: Gavin Lurssen, The Mastering Lab (L.A.) *—Heather Johnson* ■

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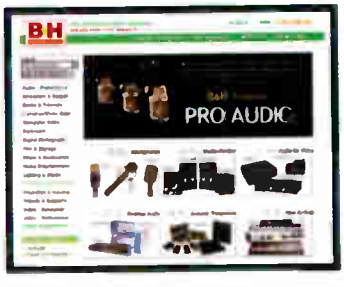


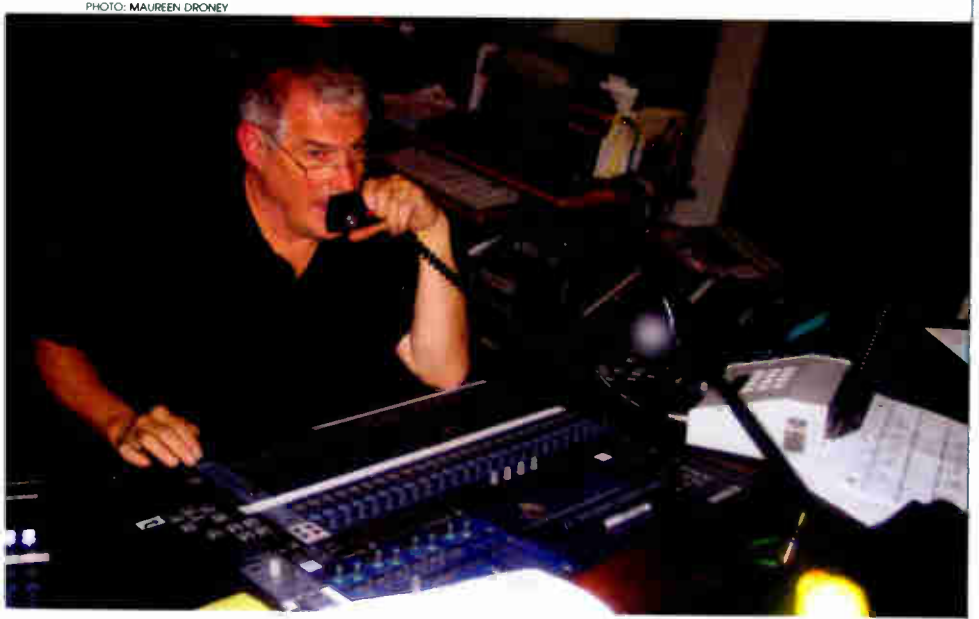
World Radio History

L.A. GRAPEVINE

by Maureen Droney

Hollywood Boulevard was typically crazy. At Mann's Chinese, tourists gawked over movie star footprints, a man with an antenna on his head held court among the souvenir sellers and *everybody* was snapping photos. Across the street, in the lobby of a converted Masonic Temple in the El Capitan Entertainment Center, *Jimmy Kimmel Live*'s crew was setting up for Slipknot's soundcheck. Through doors that opened onto the street, you could glimpse the action, but I went around back, checked in with the guard and was shown to the lair of *JKL*'s veteran music mixer, Bart Chiate.

PHOTO: MAUREEN DRONEY



Jimmy Kimmel Live's veteran music mixer and multitasker, Bart Chiate

Chiate mixes the house band and musical guest feeds for the broadcast mix, which is manned by production mixer Mark King. He's a master multitasker; when I arrived, he was watching the news, chatting on the phone with an equipment dealer and arranging 38 band inputs—including 16 for drums—all the while keeping an ear tuned to the backstage intercom chatter. It was an engineer's nightmare: a drum kit enhanced with two kick drums, two marching snares and two of Slipknot's signature beer keg toms. And the drum mics were patched into the console from the drummer's perspective—the opposite from how you see them looking at your TV screen.

"They use a lot of ear monitors," says Chiate. "It was more efficient to let the band use their own dialed-in monitor console. Slipknot's monitor engineer works from the drummer's perspective and didn't want to re-patch, so we moved things to fit our template. We don't have a patchbay, so it was extra work. But when you're mixing to picture, if everything is camera left to right, what you're reaching for is automatic. If it's not, it can get very interesting."

Set up comfortably to deal with the chaos, Chiate's neat control room, designed with the help of Bruce Maddox of Cups 'N Strings (L.A.), is decorated with Navajo rugs, an Ionic Breeze air purifier and framed Japanese *kanji*. Modular furniture by Bob Merritt houses a sound system designed by Paul Sandweiss.

The main Sandweiss package comprises three cascading Yamaha 02R consoles configured so that both house and guest bands are mixed from the same console.

—CONTINUED ON PAGE 116

NASHVILLE SKYLINE

by Rick Clark

I've always loved Christmas albums of just about any kind, but the ones that I return to are unusually durable statements that transcend the season and stand as true artistic accomplishments, inspiring any time of the year. Emmylou Harris' *Light of the Stable*, which was released in 1979, is one of those albums.

When Rhino Records elected to re-issue *Light of the Stable*, they contacted Brian Ahern, the album's producer, to work on several new tracks at his home studio. The new Ahern-produced tracks are "Cherry Tree Carol," "There Is a Light" and "Man Is an Island"—the last a magical song written by Kate and Anna McGarrigle, who also perform and sing on the new recordings.

"I love the new songs," enthuses Harris. "I knew 'Cherry Tree Carol' from the second Joan Baez album. I originally wanted to do 'There Is a Light' for *Wrecking Ball*. And when Brian mentioned the McGarrigles' 'Man Is an Island' and I heard it, I realized it would be a beautiful and unusual addition to the original album."

"Man Is an Island" was what Ahern termed a "packrat pay-off": "I had it in my cabinet for 10 years, trying to figure out what to do with it, so when Warner Bros. wanted Christmas bonus tracks, I thought, 'Man Is an Island'!" Ahern says, laughing.

While Ahern prepared to record the new tracks, he decided that it would be a great chance to do a shoot-out between two mics—the classic Neumann M50 and the BLUE Bottle with the B-4 capsule. Ahern has been frank in saying that he regards the M50 as the world's greatest microphone and owns a pair.

"There is a perspex ball sitting on a pedestal in this microphone, and on the surface of the ball is a small nickel diaphragm," says Ahern. "The microphone is very directional for high frequencies, but as the frequency range goes lower, the microphone becomes nondirectional, so it picks up a lot of low-frequency ambient information, which is the way our ears normally hear stuff. Most microphones are designed to be directional, even at low frequencies.

"I had heard that AIR Studios in Lon-

World Radio History

NEW YORK METRO

by David Weiss

don had abandoned their M50s for a re-creation of that concept by BLUE Microphones, who had designed the B-4 capsule to go with their big BLUE Bottle mic," continues Ahern. "I called up Tom Menrath at GC Pro, who I knew from his days at Monster Cable, and told him about my idea of a shootout around this Emmylou Harris session. He had one mic shipped from Florida and another mic I picked up from a local Guitar Center. I also got an extra B-4 capsule—that is the perspex imitation of the Neumann—directly from BLUE as a backup; all of the service was instantaneous and excellent."

Ahern found that the BLUEs with the B-4 were excellent on everything, but once he got out about eight feet, the M50 began to out-perform them. "I guess the M50 was built to record large orchestras, so it was designed to reach out and touch instruments at a distance and reproduce the ambience that comes from a full orchestra," Ahern points out, adding, "I can record an acoustic guitar 12 feet from the mic and it sounds like it's right in front of you. The difference is that you can hear all of the air around the instrument and the low frequencies rumbling across the floorboards to the microphone. It is a pretty extraordinary way to

—CONTINUED ON PAGE 116

PHOTO: DAVID WEISS

From left: Quad assistant engineer Stuart White, engineer Kamel Abdo and producer Harold Lilly

Love it or hate it, *American Idol* is a popular phenomenon, attracting millions of viewers and turning its winners into instant stars. Producer Harold Lilly and engineer Kamel Abdo are two music biz types who definitely do not despise *American Idol*. An experienced production team, Lilly and Abdo understand first-hand the high-speed pressures and rewards in creating a winning song for *Idol* winners—Ruben Studdard in 2003, and Fantasia Barrino this year—and their legendary label head, J Records' Clive Davis.

"New artists don't usually have fan bases," points out Lilly as he relaxes in one of his favorite studios, Quad Recording's Studio A in New York City. "But if you're working with *American Idol*, you're working with a celebrity who hasn't sold one record yet—that's the difference. As a producer, writer, engineer—whatever the case—you want to get on this project because it's going to sell albums—guaranteed. They have a fan base already, and J Records doesn't really have to do promotions: It's been done—20 million people a day are watching. You're going into the studio with someone who's guaranteed to go Platinum."

A busy freelance engineer constantly

—CONTINUED ON PAGE 117

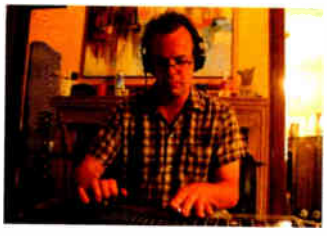
Emmylou Harris plays to an audience of Neumann and BLUE Bottle mics.

PHOTO: RICK CLARK

World Radio History

LOS SUPER SEVEN REGROUP
FOR SUPER THIRD

PHOTOS: RICK CLARK



The Grammy-winning pan-Latin project known as Los Super Seven reconvened for their third album, *Heard It on Border Radio*, which was coproduced by Rick Clark (*Mix*'s Nashville editor), Charlie Sexton and Dan Goodman and engineered by Dave McNair. Regulars such as Rick Trevino and Rubén Ramos performed alongside Tuscon, Ariz.–based band Calexico and new and returning guests such as Freddy Fender, Texas Tornadoes Flaco Jimenez and Augie Meyers, Clarence "Gatemouth" Brown and Joe Ely at Two Coves, an exclusive studio just outside of Austin, Texas, with a scenic view of the Colorado River, and outfitted with a Neve console, Pro Tools|HD and a "ridiculous amount of vintage gear to die for," according to Clark. McNair finished overdubs with Steve Earle, Delbert McClinton and Raul Malo and mixed at Ocean Way Nashville. "We've got everything from blues to Texas swing to straight-up rock 'n' roll to mariachi and even some pretty intense jazz horn-blowing," Clark enthuses, "all celebrating the spirit of border radio." Pictured clockwise from top left: Charlie Sexton (L), Jake Oddo and Clarence "Gatemouth" Brown (R); Calexico's Paul Niehaus; "Spot" of West Side Horns; and Sexton, Jim Vollentine, Olivia Trevino and Dave McNair

STUDIO SPOTLIGHT

AVATAR STUDIOS:
BROUGHT TO YOU BY THE LETTER G

Avatar's new rock room, Studio G

Adding to studios A, B, C, D, E and R, Avatar Studios (New York City, www.avatarstudios.net) recently opened Studio G, a mid-priced tracking room located on the third floor of the 33,000-square-foot facility, located on the west side of Manhattan. The studio's first major remodeling effort since 1998, Studio G was built by Vinny Sofia, carpenter of The Power Station Studios (former occupant of the Avatar building), and designed by Avatar chief engineer Roy Hendrickson.

The 400-square-foot control room is equipped with a modified SSL G+, ample outboard gear and Westlake BBSM-15 speakers, and was patterned after the historic Power Station room dimensions. "Tony Bongiovi had a great approach using good science, and the methodology has been refined over the years by various staff members of both The Power Station and Avatar," says Avatar president Kirk Imamura. "Our clients get the benefit of the accumulated knowledge of these efforts. The rooms are truly living history of the passion that goes into recording."

Avatar's budget-conscious "rock 'n' roll room" was built with organic pine, giving it a "ski lodge" feel, and includes a 323-square-foot live room, making it suitable for tracking, overdubbing or mixing for either major or independent projects. "We wanted to create a room that addressed the realities of production budgets today, but still provide the greatest value to our clients," Imamura says. "You only get to record once. You might as well record at a place where you can get better sound and better results."

World Radio History

INDIE BUZZ

LOG ON TO THE WEB
TO STARE AT THE SON (VOLT)

John Agnello (left) and Jay Farrar

Jay Farrar returned to his St. Louis studio to record the first Son Volt album since the 1998 release, *Wide Swing Tremolo*. For his fourth project (label to be determined), Farrar installed Web cameras in the main tracking room and iso booth, allowing fans to watch sessions live via his Website, www.jayfarrar.net. "The cameras shoot stills every five seconds," Farrar explains. John Agnello engineered the album, which features a new studio lineup of Brad Rice (guitar), Andrew Duplantis (bass), Eric Heywood (pedal steel) and Dave Bryson (drums). "This album is more up-tempo and melodic," says Farrar. "Definitely more so than [my 2001 solo album] *Sebastapol*."

EMANUEL
HEADS DOWNTOWN

From L to R: Emanuel's Mat Barber and Bryan Whiteman, engineer Brian Haulter, bandmembers Matt Breen and Anthony Brock, and engineer Chris Greenwell at Downtown Recording

Emo band Emanuel recorded and mixed two songs for a pre-release EP at Downtown Recording in Louisville, Ky. Their Vagrant Records debut drops in early 2005.

TRACK SHEET

SOUTHERN CALIFORNIA

Hillary Duff recorded new tracks at **The Village** (West L.A.) with producer **Julian Bunetta** and engineer **Eric Sarafin**; **PJ Harvey** stopped in for a KRCW *Morning Becomes Electric* performance; and, recording in both Studio D *and* the Auditorium, were 50-plus-member **daKAH Hip Hop Orchestra**, with producer **Double G** and engineer **Craig Burbidge**...**Mark Endert** mixed songs for Sony Music International artists **Delta Goodrem** and **Anastacia** at **Scream Studios** (Studio City). **Tom Morello** and **Serj Tankian** mixed **Axis of Justice**'s record with engineer **David Bianco**; **Rob Brill** mixed an album for indie band **Oceanic**; and **Tim O'Heir** mixed the 5.1 soundtrack for the Universal film, *Synergy*...**Threshold Sound + Vision** (West L.A.) handled editorial for a companion DVD for **Kanye West**'s Platinum-selling album, *College Dropout*, and music videos for **Josh Groban**'s "Gira Con Me Questa Notte" and **Trapt**'s "Headstrong." They welcome **Adam Ohl** as their new director of operations...**Westbeach Recorders** (Hollywood) owner/engineer **Donnell Cameron** finished mixing Fallen Angel Records artist **Cacti Widders**, while the "first punk mariachi band ever," **Carne Asada**, teamed with staff engineer **Ben Meyer** to record their full-length debut.

NORTHWEST

The Souvenirs started a new record at **Elliott Bay Recording Company** (Seattle) with studio owner **Scott Ross** co-producing and engineering... Singer/songwriter **Keith Varon** completed his debut with producer/engineer **Joey Muller** at **Totally Cool Productions** (San Anselmo, CA) and **Schacht Studios** (Oakland, CA). The project was mastered by **John Greenham** at **Paul Stubblebine Mastering** (San Francisco)...**Bay Records** (Oakland, CA) hosted 12-year-old **Chloe Pang**, who was in with engineer **Michael Cogan**, while the **Hot Club of San Francisco** recorded their latest with producer **Adam Levy** and engineer **Mark Orton**.

SOUTHWEST

ATO Records' **My Morning Jacket** prepared for their role in Cameron Crowe's upcoming feature, *Elizabethtown*, at **Downtown Recording** (Louisville, KY)...**JamSync** (Nashville) chief engineer **K.K. Proffitt** created menu music loops, remixed dialog and music tracks for the 5.1 soundtrack, and handled DVD authoring for *The Royal Academy*, a documentary from **Tony Cane-Honeysett**'s Vox Box Productions...**Masterfonics** (Nashville) engineer **Benny Quinn** recently teamed with producer **Billy Joe Walker** to finish **Travis Tritt**'s single, "What Say You," albums for metal band **Jackyl** and electronic pop act **Venus Hum**. **Tommy Dorsey** produced and mastered **Wynonna**'s UK pop/dance remix for "I Want to Know What Love Is," and mastered **Ryan Holladay**'s album, *New Kid In Town*...Producer **Butch Walker** and engineer **Russ T. Cobb** mixed two singles for **Yuji Oda** and tracked songs for Island/Def Jam's **Injected** at **ZAC Recording** (Atlanta). **Goodfella** tracked with producer **Neezy** and engineer **Kelly Liebel** and then mixed a single with producer **St. Nick**...Producer/engineer **Rob Wechsler** mixed and mastered four tracks for **Jack Ingram** at **WexTrax Mastering** (McKinney, TX). Also in were the **Vocal Majority** and **Bobby Pulido**, who mastered their new releases with Wechsler.

PHOTO DAVID GOGGIN

*Artist/actor Mos Def (left) mastered his new Geffen album, **The New Danger**, with Bernie Grundman at Bernie Grundman Mastering.*

MIDWEST

Alanis Morissette and **Sarah McLachlan** visited **Winterland Studios** (Minneapolis) to record acoustic performances for Cities 97 radio's CD sampler with engineer **Brian Johnson**. **Gavin Degraw** tracked a Christmas song with engineers **Zac Bates** and **Todd Fitzgerald**.

NORTHEAST

The L Word's music composer, **Elizabeth Ziff**, along with creator/writer/executive producer **Ilene Chaiken** and actress **Alyson Palmer**, were in **Dubway Studios** (NYC) tracking underscore with engineer **Julian McBrowne**... *American Idol* finalist **Jennifer Hudson** tracked vocals at the **Cutting Room** (NYC) with **Kay Slay** and engineer **Steve Schopp**; singer/songwriter **Cheryl Engelhardt** mixed her debut with **Dylan Margerum**, **Joe Nardone** and **Chris Griffen**; Nardone also engineered material for **Talib Kweli** and **De La Soul**...**Lauryn Hill** visited **Sound on Sound** (NYC) to track with engineer **Eric Butler**; **Nas** mixed with **Chucky Thompson** and **Kevin Crouse**...**The 5 Browns**, a brother/sister classical piano quintet, have finished their BMG Classics/RCA Red Seal debut at **Right Track** (NYC) with producer **Jay David Saks**...**studio .metronome** (Brookline, NH) hosted **Krumm Snatcha** and **Mysta DL**, who mixed their upcoming album with engineer **Pete Peloquin**. Also in: **June Babies** with producer/engineer **David Leonard**...Lastly, happy birthday to **Retromedia Sound Studios** (Red Bank, NJ), which celebrates its 20th anniversary this year. ■

Destiny's Child Kelly Rowland (center) came to Luminous Sound (Dallas) to track vocals for her upcoming release with engineer Chris Bell (right). Also pictured is Dallas Cowboy Roy Williams.

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L.A. GRAPEVINE FROM PAGE 112

Two 56-pair snakes feed it: one from the six-member house band and the other from the guest band set up in either the lobby, the back parking lot or a thrust off the main stage. The house band is hard-wired into 48 channels of True System Precision 8 mic pre's, which feed analog I/O cards in the 02Rs. The signal is then sent via a routing scene to the input faders. The guest band, called up when needed, is hard-wired to the mic pre's of the 02R and sent to the input path via another routing scene.

The show is recorded 24-bit/48k to 48 channels of Nuendo and Tascam DA-78. Program material leaves the console via AES to six Nuendo DD8 format converters and then via Lightpipe to Nuendo and TDIF to the DA-78s. AES output is returned to the console. "With the converters, I can send from the console to both recording devices simultaneously and monitor off either the system or the console return," notes Chiate. "Also, I can move 48 tracks from one device to another with the push of a button! Okay, actually six buttons, but it's pretty slick."

It's a lively scene all afternoon. Segment producers run in with requests for band prerecords for various show elements—such as a cue by the house band's guitarist—and a wall of sound enters from the lobby each time the door opens. "Jimmy doesn't see most of the video clips until about 5 p.m.," says Chiate, "so there may be a lot of changes."

Currently, Sony is sponsoring the *JKL* music stages, with selected bands' music—recorded on the set—available for download from Sony Connect (www.connect.com). It's an additional job for Chiate, who must immediately post-show make mixes of the performances ("Hopefully, with no fixes!" he says with a laugh) for transfer to the Sony Website. "Essentially, we use the broadcast two-mix," he comments, "but we also include a lot of off-air performances. I have to do some editing, removing voice-overs, et cetera, which I do in Steinberg's 2-channel WaveLab. It can be quite a task. Steinberg's Ted Rackley and Greg Ondo have been really helpful. Thanks to Nuendo and WaveLab, I can go pretty fast. It takes about an hour per song."

The Sony/*JKL* project is taking off: Korn, for example, recorded nine songs. When we spoke, all of next week's musical guests were booked for downloading, including Tears for Fears, Elvis Costello and Jimmy Eat World. "It's great fun mixing a live show and then, essentially, a live record," Chiate says, laughing. "But I expect to be a burnt unit by the end of next week!" ■

Got L.A. stories? E-mail MaureenDroney@aol.com.

NASHVILLE SKYLINE FROM PAGE 113

record a great guitar."

For recording at closer range, Ahern felt that the BLUE Bottles stood out: "If you are going for something at three feet or less, I would go with the BLUEs. When the Neumanns get in around three feet, they get brittle because they are reaching out for an orchestra. If they have a female voice right in front of them, they get messed up," Ahern says. "We started with the M50s on Emmy's vocal and it was then that we realized that they don't like to be up close, so we wound up using a BLUE Bottle on her voice, with the exception of one song, where we used my old AKG C-24.

"The BLUE mics have an interesting feature: Instead of having pads for loud recordings, they have a control over the voltage that is supplied to the capsule," explains Ahern. "So if you want to record something gentle, like an acoustic guitar being played with fingers, which we did, you would crank it up so that it would highly sensitize the capsule and then jump when it heard something. If you were recording a gnarly banjo, you would back the setting off a little so it wouldn't over-react to the harsh tones of the instrument. The BLUE also has interchangeable capsules, so we tried a few of those, too. We tried the BLUE B6 capsule on Ricky Skaggs' mandolin with an M50 looking over his shoulder. When he heard that back, he was pretty impressed."

One of Ahern's favorite instruments is his special Ernie Ball acoustic bass, which has the end of the body bored out and an adjustable cello peg installed so that he can play it upright between his knees. He also put "one of those chewing gum contact mics" under the lowest string to reinforce the lower register of the bottom string.

"When I recorded my Ernie Ball acoustic bass, I used the BLUE Bottle," Ahern reports. "That bass is a very quiet instrument, so I cranked that capsule excitement up all the way. I preferred that BLUE Bottle microphone over the M50 on two out of the three new songs recorded for the album."

Ahern brought in Glenn D. Hardin (the legendary keyboard player for many of the classic Harris recordings and one-time member of Elvis Presley's band) to play some unusual parts on some of the new tracks. "On 'Cherry Tree Carol,' I pictured a bizarre dance hall-on-a-riverboat sound. When you're on a riverboat, everyone is having a good time and people forget themselves, so I wanted the musicianship to reflect that idea," says Ahern. "I would say, 'Glenn D, pretend you are just a drunk guy who wanders in from the deck and sees what's going on and decides to sit down at the piano and join in. Play like you are not

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quite conscious.' He did and it turned out great. I wanted one of those out-of-tune upright piano sounds—what I called the 'Deadwood' sound, which is the name of that HBO series."

On one of the tracks, Kate McGarrigle worked out a great frailing banjo part, but was having difficulty reacting to the tempo information fed through the headphones. "That wasn't working out, so I ran up to my closet and got my old antique six-string banjo with an ebony guitar neck on it that I had built for me. It had the resonator removed and Kotex napkins stuffed into it," Ahern says. "I played that and sat right across from Kate and the other BLUE mic, and we got a great feel live and we built from that."

Concerning the new material for *Light of the Stable*, Harris states, "'There Is a Light' and 'Man Is an Island' have that spiritual quality going for them, but they are not really Christmas songs. The words to 'Man Is an Island' are amazing, and that song could be on a secular album. I love it when there is a song that can transcend a particular religion and go more into the realm of the spirit, bringing along our shared experiences as human beings—bringing heaven and earth together, so to speak.

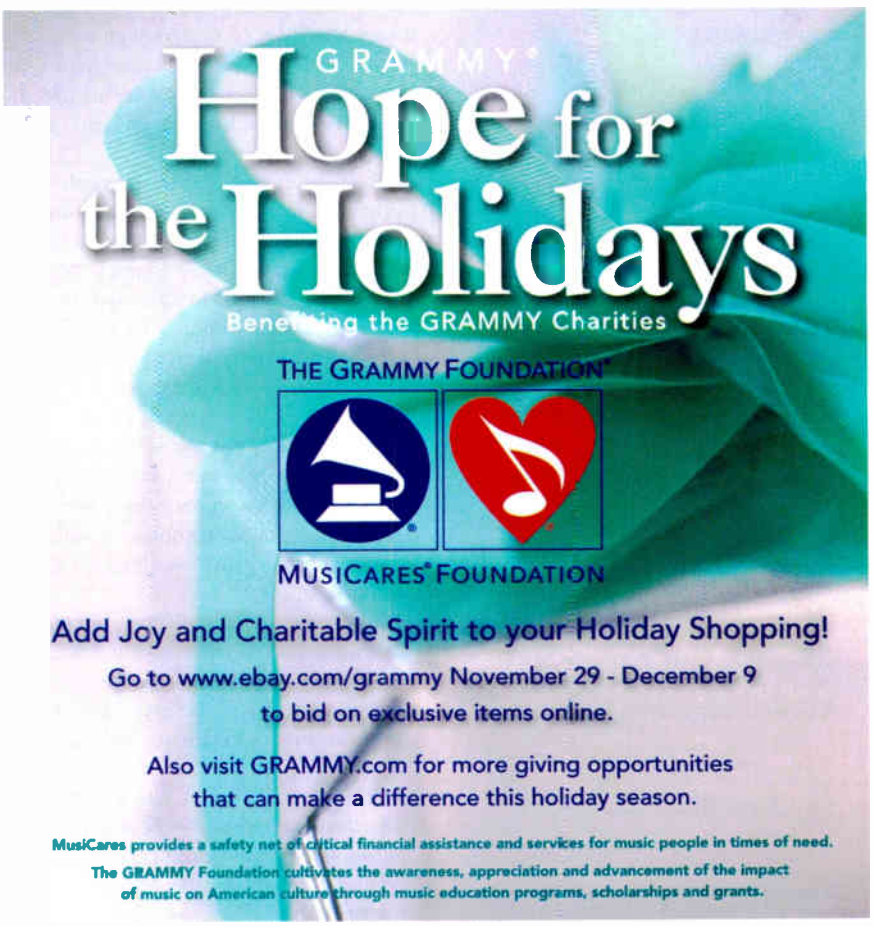
"'There Is a Light' could be more of an Easter song, but there isn't really a tradition of Easter albums," Harris says, laughing. "It's about the same person, in a sense, but it goes beyond any particular religion, which I like myself. 'Cherry Tree Carol' is a more traditional song, and I'm glad that we got it.

"I get into Christmas and I have favorite records," she adds. "I love the one by The Chieftains and John Fahey's Christmas record, which is just guitar. I love Eddie Arnold's and Gene Autry's Christmas records. It is nice to put on Booker T & The MGs' Christmas record, too, and I'm honored to be in that company." ■

Send your Nashville news to MrBlurge@mac.com.

NEW YORK METRO FROM PAGE 113

navigating the maze of New York City's hip hop and R&B scene, Abdo first linked up on a Studdard track with Lilly, a fast-emerging talent whose production/songwriting credits include Alicia Keys and Monica. The two quickly realized that together they could work with the particular blend of speed, quality and style needed to stand up to the massive expectations of an *Idol* winner. "We had chemistry," Abdo says. "When Harold comes to New York City, if he has a choice, he calls me. Since then, we have the same flow, same people, same vibe.



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"I like working with Kamel because most engineers don't have an opinion," Lilly adds. "They just do what you tell them to do. Kamel is like a second ear in the room, creatively."

The seeds for the three-day Quad record/mix session with Barrino were sown in Lilly's L.A. home base, where he successfully demo'd the track, a moving R&B song about young single mothers called "Baby Mama," to Davis. "I met with Clive, he heard it and loved it," says Lilly. "Fantasia's a single parent, and she told us she got a lot of flack for being a single parent. People told her that an American Idol shouldn't be a single mom, but in my community, there's a lot of single parents. Gay people have anthems, hustlers have their anthems, wives have their anthems, but this was an R&B version of a single mom anthem. She is one, and nobody else could have done this song.

"With Fantasia, seeing that she's a true artist and a true singer," Lilly continues, "I said, 'Instead of Pro Tools, let's do 2-inch.'"

With the instrumental tracks already completed from Lilly's L.A.-brewed demo, complete with ultra-soulful background vocals by his twin sister, Allison Lilly, Abdo could focus on printing Barrino's all-important lead vocal to tape. "For the vocal chain, I always use a Sony C800," he states. "It's a good pop mic. It's bright and it captures a lot of singers with a pristine amount of detail—you can capture a well-sung R&B vocal on it. We try to use the same mic on all these people we've recorded."

From the C800, Barrino's vocals went through a Neve 1073 module and on to a Tube-Tech CL 1B compressor before hitting Quad's Studer A827 24-track. "On the Tube-Tech," says Abdo, "I would just suggest a fast attack with a faster release, because I don't like to overcompress stuff on the way in. You try to control it without squashing it, and you get at most 5 dB in gain reduction. But most of the time, you're not compressing a lot. As the song progresses, the singer really belts and that's when you want to compress a little bit. Most of the time, however, you try not to overprocess."

According to Lilly, Barrino's voice is one thing you definitely don't want to over-process. "It's really passionate, it's raw, full of emotion," he says. "The reason I wanted to go to analog was because you've got perfection on one extreme and passion on the other. A lot of people go for perfection sonically—coming in on the right spots, singing the right notes—but the closer you go there, the further you get from passion.

"With analog, you're going on the passion end, and Fantasia's voice fit perfectly for that approach. What you hear is exactly what it is—like a mirror with the passion side of it. We set her up in a gobo booth. I didn't want her in an iso booth because I didn't want her to feel restricted. Sometimes, because you're in a booth and you've closed the door, the line of sight is gone. You can't see anybody and you're by yourself. I like being in an open space where I can see her. I think it's important to have eye contact when you're doing vocals."

Barrino's relative lack of experience in big studios was rendered a non-issue by her talent as she recorded the expressive lead for "Baby Mama" at Quad. "She's just a natural," Abdo says. "She takes incredible direction. The energy was great. Harold has a knack for connecting with people on a different level. J Records said they never had a performance like this yet. That's Harold and the chemistry—he spends hours just shooting the shit. He spoke to her to see what she's going through at that time, and that makes it easier for her to sing it, close her eyes and really belt, because she's going through that. If you do that, you can get a good vocal in an hour.

"It's a high-pressure situation, but it doesn't *feel* high pressure," Abdo continues, "because that will kill the performance. Clive has to hear it at the end of the day, but you're not sweating. We like to keep it comfortable, and it's good for the singer to be with a group of like-minded people with good energy."

Once the vocal track is laid down, Abdo and Lilly send a rough mix to Davis and can expect almost immediate feedback. "We send it to Clive and he says 'yea' or 'nay' on the record," Lilly explains. "If he wants changes, you book the artist to come back in and change it. I welcome constructive criticism because it really helps me as a producer and a writer. One thing with Clive is he loves his vocals *up*. He just likes them sitting out there, and he loves lyric sheets. He's a song guy, line for line looking at the words."

Lilly may be a relative newcomer to the scene, but this savvy producer/songwriter has nice advice for those who think that working with Davis and his American Idols would be a good thing. "Be original and don't be afraid to try new things," he counsels. "Take direction and welcome criticism, but trust yourself and trust your instincts. That's the main part." ■

Send your Metro news to david@duvords.com.

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—FROM PAGE 46, RODNEY JERKINS

new Destiny's Child album?

I was supposed to go to London for a meeting and my wife argued with me about how she didn't feel it, so we went to New York for a couple of days. I bumped into [singer/songwriter] Beyoncé [Knowles] in the hallway at Sony. I won a Grammy with Destiny's Child, so I said, "I heard you're in the studio," and gave her a CD. Two days later, I was back in the studio with them, and 30 days later, "Lose My Breath" was the top song in the country.

What were you listening to and for during those sessions?

The first song we did this time was reminiscent of "Say My Name," which we'd done before. It was good, but not great, and greatness means not repeating history but *making* history, so I created a marching band–type of thing on the spot. It just happens that way sometimes.

How do you know when it's right?

It's just a feeling you get. That feeling...you just know, "We got it!" We write every day, but there are always those [projects] that stick out. You get excited and you're almost ready to celebrate on the spot because you know the potential. That's how it was when we finished the new Destiny's Child.

You've commented before that there is a Rodney Jerkins sound. How do you repeat the success of that sound from project to project without sounding the same?

You have to reinvent yourself constantly and that's a task. You create a sound and everybody calls you for that sound, for the hit you have on the charts. "You want a duplicate of what I just did?" "Along those lines, but different." You have to take things you've done in the past and add something new. Sometimes it's hard. Sometimes I nail it. Everybody will fight you, wanting what you did before even when you don't want to give it to them.

What do you use to create that sound?

A Pro Tools hard drive system, an SSL board and KRK speakers in L.A., a Sony DMX board and Augspurger speakers in Florida. My outboard gear and keyboards are all the same. I use a Moog for bass, a [Korg] microKORG synthesizer and a Tascam GigaStudio for a lot of my sound. I have Roland Fantom 3080s, 2080s—I've got them all. I have 11 3080s. For mics, I use a Telefunken, a Sony C800 and lately I'm using a BLUE Kiwi. It's clear, like the Sony, but warmer. I've wanted to start a mic collection but I never had the chance. I was always into keyboards and synthesizers; now I want a lot of old classic mics.

Can you create a rough sketch of how "Lose My Breath" was cut?

I love to start with a melody—chord progressions, sounds, whatever—and work rhythm after melody. I create beats later. When I write, I challenge the writing. We'll do 20 different choruses or verses and I pick the best. Twenty bridges. I preach to writers and producers: You have to challenge yourself. My best grooves come fast, but writing and melody I spend a lot of time on and really perfect it. "Lose My Breath" was tracked fully with all the parts: chorus, verse, B sections. The track is cut and they sing over it. You can have a great track, but if the lyrics or the melody aren't great, it's not a great song. It was awkward working with them this time. Last time, they were all there. This time, we did it one girl at a time. Beyoncé, Kelly [Rowland] and Michelle [Williams] were in different rooms and were physically all together one time. And they all did their vocals in the control room, not the vocal booth. They said it was more comfortable. I said, "You could have saved money and done it at home!" It wasn't hard because I had worked with them before and I know their capabilities, but it was awkward because I had to sit and wait, sometimes for hours, for someone to finish upstairs, and when you're in the zone, you want to keep going. They had so much to do that week. They were in other rooms with different producers to get three songs done a day.

Do you ever become frustrated when you can't get it after a certain number of takes?

Yes, because sometimes you say, "Do it again, again, again," and you think it will happen and the artist will nail it, but they don't. You have to get on the computer and manipulate it to make it work. I'm from the old school and I think Pro Tools can make people lazy. It's superb in cleaning things up, but I can tell when there is no realness to it. I hear it as a producer. When I listen to an album, I hear the Pro Tools, the Auto-Tune.

Do artists and producers today rely too much on technology? There was no Pro Tools when Marvin Gaye did it!

Marvin, Aretha, the Jackson 5, Mahalia Jackson—they just had a mic and a board and they were making it happen. The true integrity of music is definitely gone. I hope to be a pioneer of our generation and bring some of it back.

MIX ONLINE EXTRAS

Elianne Halbersberg is a freelance writer based in Georgia. Cover photo and interview arranged by Rick Adams of Image 3 Promotions.

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—FROM PAGE 20, DUMB ANN DUMMER

the most on the front page on a lot of these items. Now more and more are hard-wired with the functions *they* think we want at the top and no way to change them.

Now we are actually beginning to lose control.

If you think about it, it was inevitable. Products are now so powerful and versatile that designing an understandable interface to control the myriad expected features is becoming impossible.

What to do? You can't take away these features—even the ones that nobody actually uses—because the competition has them and you would look weak. Less-used functions have already been buried on the back page, where the diehard geeks could get to them but mainstream users wouldn't have to see them and get all scared and tense.

And then, perhaps in textbook Darwinian fashion, some guy somewhere—either on purpose or by accident—simply left out the controls for some function and nobody complained. Maybe sales even improved. Less learning curve, less fear.

More and more functions have lost their onscreen controls and become presets, with some even becoming integrated into the overall instrument, like default reverb on many synth voices.

The unsolvable equation—how to offer all the power *and* all the simplicity in the same toy—has been solved. Just take away *control*. As a result, the user no longer *controls* the instrument, he just *uses* it. Sad? Yeah, kinda. Pathetic? Maybe so. Simple? Absolutely! Fast? Hell, yeah! Like a 500 HP SL55, you'll take it their way and *like* it. It works perfectly, right out of the box. You don't need to know anything but how to play (or drive). Want to customize it? Transform it into the perfect machine that does what *you* want, the *way* you want it? No. You will *not* screw with perfection! They know what you need and they have delivered it. Shut the hell up and just use it.

Everything you wanted might be there, and every spec you saw in the pretty brochure is met. It does what was promised, but it doesn't do it quite like you thought. Kinda like the tricky genie that grants you a wish but cleverly interprets your words to put you in a situation that has nothing to do with what you were *thinking* when you asked, but everything to do with exactly what you *said*.

PRESET/SHE SET

In the Hard Earned Days, nobody would even think of actually using a crappy factory preset synth voice. Ever. Factory presets were exclusively reserved for tragically uncool bands that played Bar Mitzvahs in Tonga or maybe Accident, Md.

But today's synths often have voices that are usable for some live nightclub situations. Manufacturers are telling me that when these things come in for service for the odd bullet hole or Cabo Wabo short, *there are no user voices inside at all*. People are playing these things right out of the box and never modifying the factory presets. Yes, yes, this has been going on forever, but now it is the norm, not the odd comic case.

If you are one of these owners, all this is making your life even easier. Plug and play does have its seductive side.

But if you are like me and want the velocity curve control on your front page (or want to find Radio Shack), watch out—the Crash-Course-Kiddies are beginning to call the shots.

I wonder if you can still have it your way at Burger King? ■

SSC has gone off to glue knobs on a few of his synths so he can at least pretend they will do what he wants. He also said something about dusting off his Arp 2600.

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—FROM PAGE 24, VIRTUAL STUFF

times as fast as DVD. The first BD-R burners to reach the market, according to Wolfgang Schlichting, research director for removable storage at the technology consulting firm IDC, will run at 2x read speed. "Because the pits are so much closer together," he says, "the spin speed is actually slower than a DVD. That means that we can have faster write times that won't approach the physical limits of the spinning discs. If you spin them too fast, they become dangerous." Eventually, he says, 6x BD burners will be available, although you will need special discs to use them. This translates into 27 MB/second, which means that they would be an efficient backup medium and you could theoretically record multitrack audio directly onto them.

It's too early to say how Blu-ray technology will affect the pro audio industry, as the first products won't be available in this country until late 2005 and they will be aimed at the consumer video market. Initial prices for drives will be high—between $1,000 and $2,000 (a recorder has been available in Japan since April 2003 for $3,800)—but the discs will probably start out at around $50 for a single-layer version. One can assume that all of the prices, if the format catches on, will go down quickly.

Muddying the waters somewhat is a competing blue-laser technology from NEC and Toshiba called HD DVD, which was announced more than two years ago but has yet to ship. HD DVD single-layer rewritable discs can hold 20 GB, and the format's proponents say that the discs will cost only a little more than current DVD-Rs. But while HD DVD is aimed almost exclusively at movie studios, Blu-ray has the backing of Dell, Hewlett-Packard and Microsoft, which recently got its VC-1 video codec (based on Windows Media 9) written into the BD specification. Hopefully, the situation won't deteriorate into something resembling the Betamax vs. VHS or SACD vs. DVD-A wars, or worse—the Pioneer vs. RCA video disc war, which *nobody* won. Some sources are saying that the two sides may somehow merge their technologies, which would no doubt move things along nicely.

On another front, Iomega has come out with a new removable hard disk format that it calls REV, which a company spokesman says is short for "Revolution." REV disks hold 35 GB and will sell for about $50 each in bulk. This is quite a change from the original 1GB Jaz disks, which cost a cool $100 when they were introduced and still do—if you can find them. The drives start at $300 or so, and include compression software

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that can increase the disk's capacity to 90 GB when used for backup.

Iomega's track record is not without its problems. Besides being expensive, Jaz disks were not particularly shockproof and would conk out if they were dropped on a hard surface. Even if you didn't knock them around unduly, they weren't very reliable, and it always felt like a bit of a gamble whenever you popped in an old disk. The highwater mark of their acceptance in the audio industry came when Roland tried distributing libraries for its S700 Series samplers on Jaz disks. The experiment came to a quick end when it became apparent that computer CD drives were about to get very cheap, a development that allowed the company to cut the distribution costs of its libraries by something like 98 percent.

Zip disks, while they made good replacements in many contexts for floppies, were never fast enough or large enough to make a dent in the audio market, even when they expanded from 100 to 250 MB. (For the past two years, they've been selling 750MB models, a fact that had totally escaped me until I started working on this month's column.) At one time, Zips also suffered one of the worst technical problems imaginable: A defective drive not only fails to read a disk, it would render the disk unreadable by any *other* drive. The class-action suit over that one lasted for three years.

A lot of the problems of past products have been addressed in the REV disks, according to Todd Schuelke, Iomega's reviews manager who has been with the company for 19 years. "Removables in the past always had a contamination issue," he says. "If you have the heads located in the drive, when the disc is inserted, dust can get in. We've eliminated this in the REV with a 'clean-room' environment: Two doors open simultaneously when you insert the disc, and when they're open, a HEPA [high-efficiency particulate air] filter is in place. Also, the motor is in the disc, not the drive, so that eliminates the area around the hub as a potential contamination source.

"Jaz drives had four heads and two platters, while REVs have a single platter and just two heads," he continues. "The cartridges, which are the size of a deck of cards, are very robust and can take quite a drop. The technology comes from leading-edge laptop hard drives. While Jaz parts were proprietary, the REV platter and heads are off-the-shelf components." You don't need to install a special software driver on the host to connect a REV drive—it uses the UDF format, which makes it look to the host like a CD. "You can even boot from it," says Schuelke.

Finally, the drives are fast: Maximum theoretical data transfer rate in uncompressed mode is around 27 MB/second. So you can use them as your main data drive in a session, not just as a backup, which makes them as convenient to use as tape: When the session's over, take out the cartridge and put it away.

There are those who say that discrete removable storage for audio facilities is actually a dead end—huge RAID networks are the way to go for the studio that has to have instant access to everything all of the time. And I'll talk about that in a future column. But in the meantime, for those of us who like to keep our projects in separate containers, there is cause for optimism. Think about how much shelf space you might be able to free up by getting rid of all those tape boxes and consolidating all of your CD backups onto disks that hold anywhere from 30 to 130 times more stuff. ■

Paul D. Lehrman is contemplating buying a bigger house.

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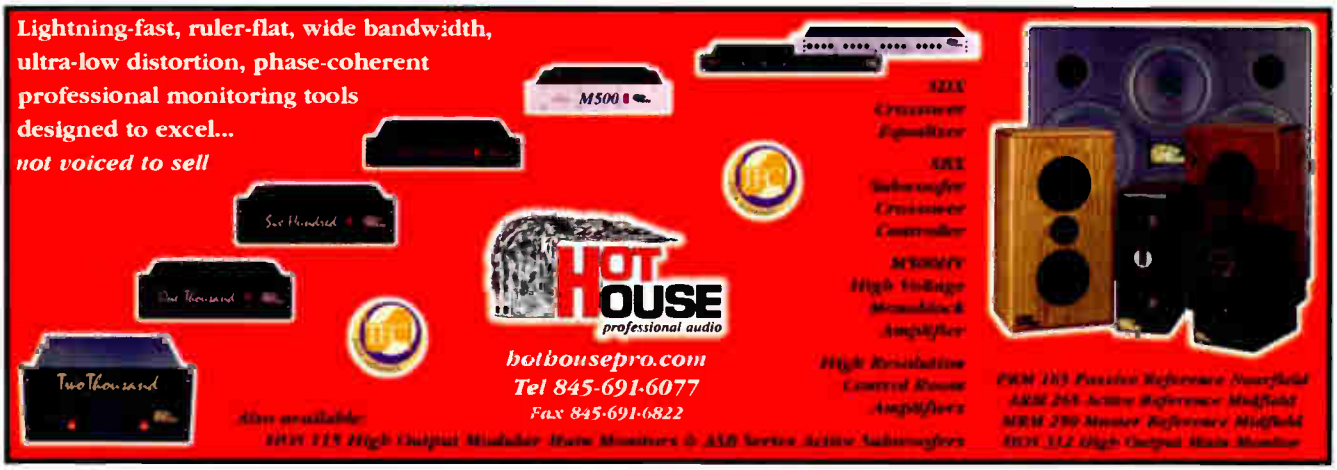

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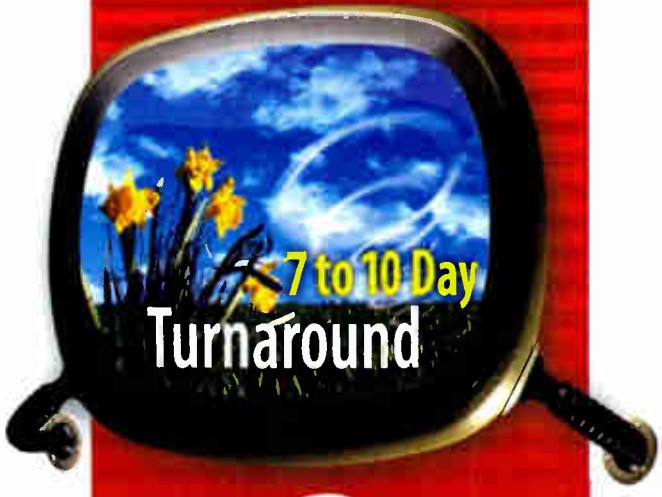

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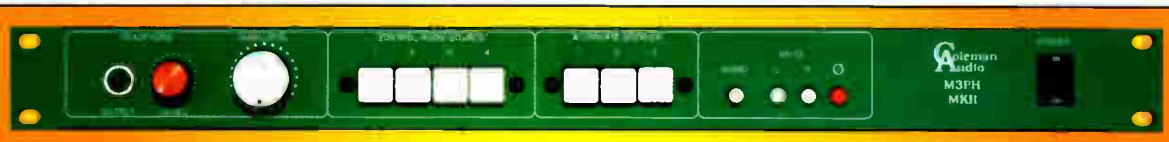

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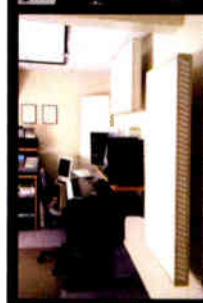

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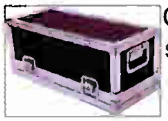
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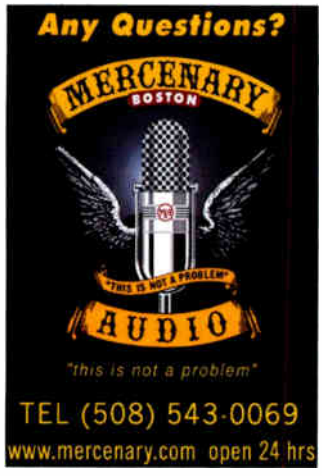

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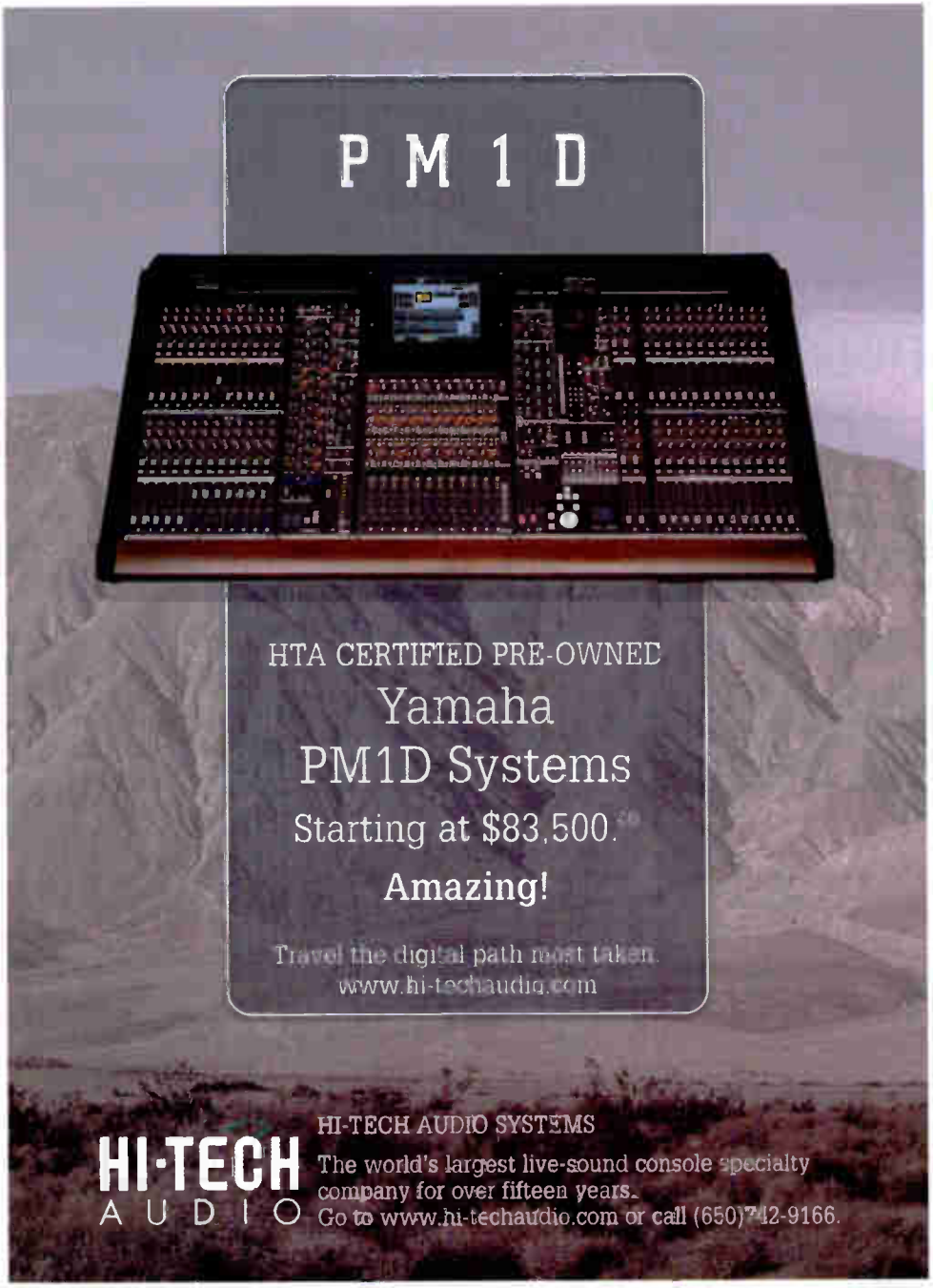

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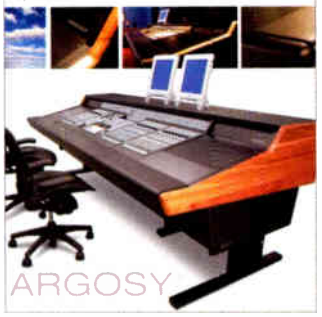
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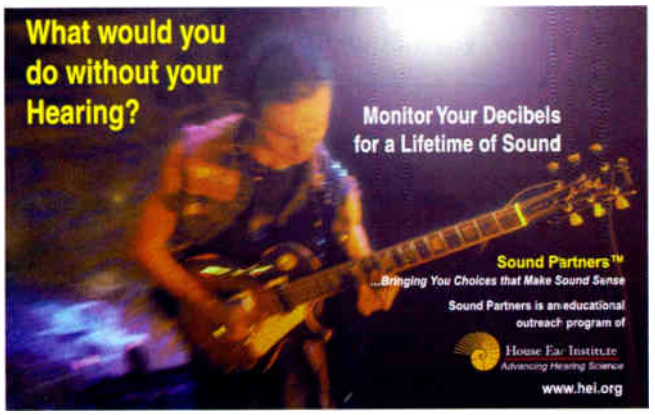

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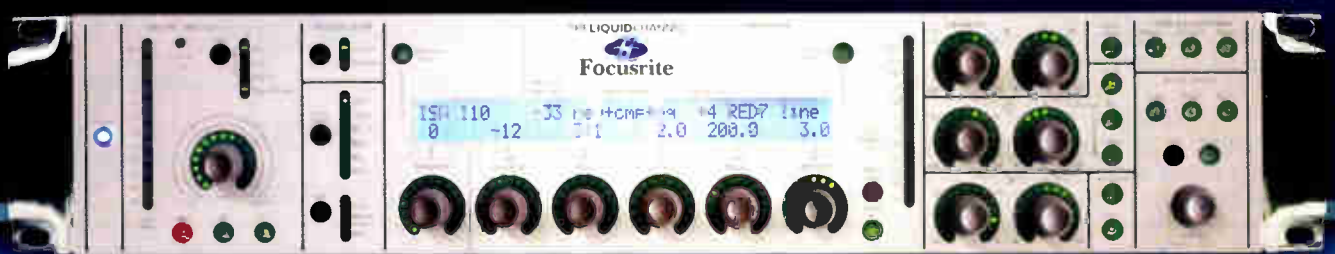

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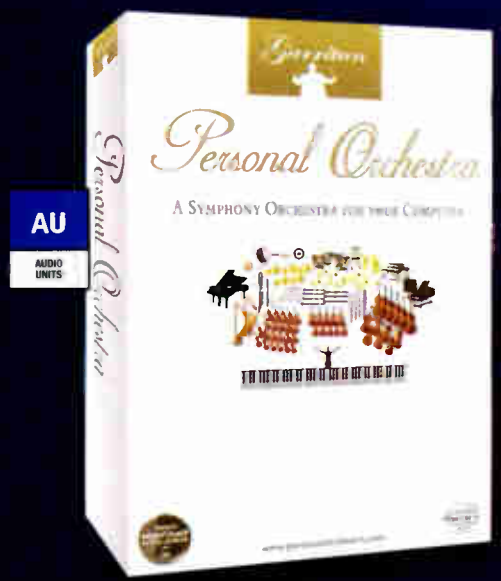

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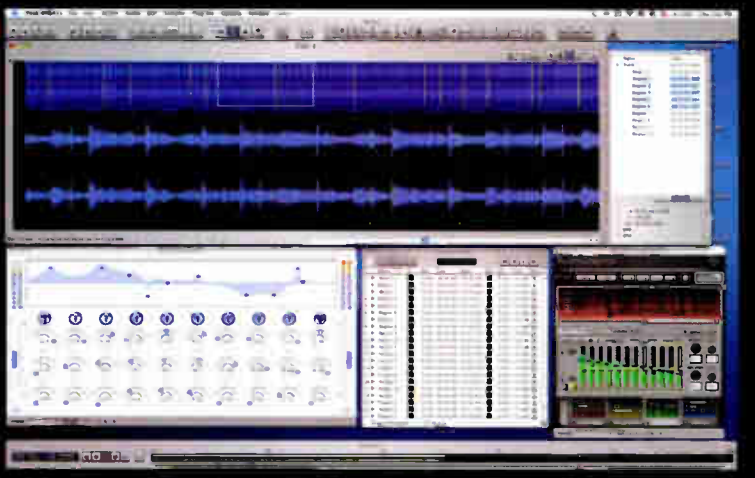

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Often overlooked, voltage stabilization is an absolute must for the well-tuned MDTU studio experience. Dips in voltage caused by power-hungry appliances can seriously compromise your sound: loss of tone and clarity, spurious changes in gain structure, loss of peak power, and worse. The AVS 2000 Pro delivers the stability needed for peak power and performance.

Monster Power Pro 7000

Equally important, power conditioning is another must. The current that comes from most AC outlets is inherently unbalanced, causing high-frequency oscillations that get picked up by your gear in the form of performance-robbing hum, buzz and static. Only a power center with perfectly balanced power can fully remove this type of interference. The Pro 7000 is the answer, with 12 AC outlets and Tri-Mode™ 3145 joule rated surge protection. It's the perfect compliment to the AVS 2000 Pro. Get both units to deliver the world class power that the gear in your MDTU studio deserves.

Yamaha 01x Digital Mixer

For mixing "inside the box" or "outside the box" with Digital Performer, the Yamaha 01x gives you the best of both worlds. In fact, the 01x can serve triple duty in a MOTU-based studio as a mixer, control surface and audio interface. First and foremost, the 01x is a world-class 26-channel moving-fader digital mixer with 8 mic preamps, 24/96 A/D converters and total recall. Built on world-renowned 96kHz DSP technologies found in Yamaha's flagship DM2000, 02R96 and 01V96 professional digital mixers, the 01x has massive power under the hood, at an amazingly affordable price. If you choose to mix in Digital Performer instead, the 01x serves as a comprehensive control surface for Digital Performer's mixing environment, complete with motorized faders. And Finally, the 01x can serve as a multi-channel audio interface and multi-port MIDI interface via mLAN FireWire.

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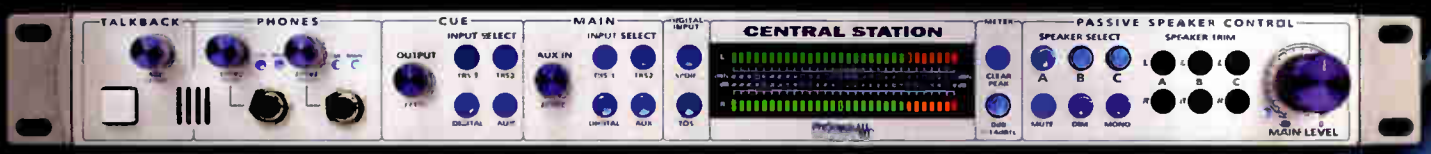
Mackie Control Universal and Extender

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 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 Digital Performer itself.



Presonus Central Station

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 deliver a powerful and affordable solution for Digital Performer that will enhance the creative process and ease mixing and music production.

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Tascam DM-24 Digital Mixer

Maximizing Functionality With an Emphasis on I/O

Tascam's DM-24 is a popular digital mixer with good reason: It sports a large amount of I/O and with its superflexible signal routing, onboard effects, automation, machine control and ability to serve as a control surface for DAWs, it makes an excellent centerpiece in a sophisticated studio. There are a handful of applications that may not be immediately obvious to someone who has simply used it as a plain-vanilla mixer. If you're hoping to squeeze even more functionality out of your DM-24, here are some ideas to play with.

PATCHBAY AND SIGNAL ROUTING

When I first acquired my DM-24, I hooked it up to pretty much every device in my studio and found it to be everything I wanted in a mixer. One day, I needed to do a transfer from DAT into Pro Tools. I dialed up the appropriate signal flow in the DM-24's I/O section, saved it as a preset (almost as an afterthought) and did my transfer. Over time, I did various other transfers: 16-track analog to DTRS and vice versa, and 2-track analog masters to the computer. Each time I saved the routing as a preset. Then it hit me: I wasn't grabbing patch cables to do transfers. I was simply recalling presets much easier than making 16 or more patches at a time. Bottom line, the DM-24 makes an excellent central patchbay/signal routing device.

THE INS AND OUTS

The DM-24 has a boatload of I/O and initially appears to be a perfect mixer for 24-track projects. After further examination, I found that you can take it a lot further than that. Tascam's version 2.0 firmware for the console introduced a new preset called 48-CH Mixing. In this configuration, TDIF inputs 1, 2 and 3 are assigned to channels 1 through 24 (tape returns). The additional eight channels (of the total 32) are assigned to handle two internal effects processors, a digital stereo input and two channels of external send and return.

Additionally, the 16 analog inputs are assigned directly to the stereo bus. This is perfect for a scenario in which you have 24 tracks of drums, bass, guitars and vocals and you want to mix in sequenced synths, samplers or drum machines. And considering the DSP capabilities of many contemporary synths and samplers, you may be able to achieve the EQ, dynamics and effects processing necessary for your mix. Even with vintage synths, you can use outboard EQ and dynamics in the channel inserts to get them in the mix the way that you want. You could actually get 16 more tape tracks into your mix this way, as well. Either way, having 16 inputs more than what is apparent is nice.

SWEET PLUG-IN SUITE

The DM-24 comes loaded with a nice suite of effects from Tascam, which are nothing to sneeze at, but the real effects power resides in the console's TC Works effects and Antares mic and speaker modeling. There are 127 Tascam effects presets, including compression, distortion, exciters, de-essers, phasers, delays, chorusing, pitch shifting and flanging. The 100 TC Works presets are high-quality reverbs of all varieties. The Antares presets allow you to emulate a large variety of mics and speakers.

I have been known to process signals through the DM-24 and re-record them back to another track, particularly the distortion and modeling effects. It's incredibly easy to do, considering that my DM-24 serves as the central patchbay/signal routing hub for my entire studio. I simply route the signal through the effect and record it back (not unlike re-amping). The DM-24 provides access to effects that you may not have available elsewhere, so why not use them?

BEYOND THE BASICS

The DM-24 emulates Mackie's HUI control surface so you can control your DAW. Even if you're not emulating the HUI, the unit sends MTC, which can be used to sync your DAW with any tape tracks you're mixing. Also, there are MIDI continuous controller layers that allow you to control MIDI devices. And just in case you didn't know it, pressing the Second Function key while selecting a channel automatically brings it to unity gain. Similarly, holding this key while pressing an EQ band key flattens that band, setting its gain to zero.

DON'T FORGET THE UPDATE

Because the DM-24 is software-based, product development continued after the mixer launched. Check to make sure your DM-24 is at the latest version, which is revision 2.1. In addition to addressing some minor bug fixes, V. 2.1 adds a number of slick features, including expanded bus assignment flexibility, improved mic/line talkback source routing, S/MUX 96kHz interfacing and additional HUI emulation functionality. Best of all, the software update is a free download from www.tascam.com/Products/DM-24.html.

GO FURTHER

The DM-24 is incredibly powerful in terms of signal routing and external control, and I doubt most users have delved into the deeper features. Take some time to get experimental and push your console. I bet that there are quite a few ways you can smooth out and speed up your work with a little digging. ■

John McJunkin is the principal of Avalon Audio Services in Phoenix

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