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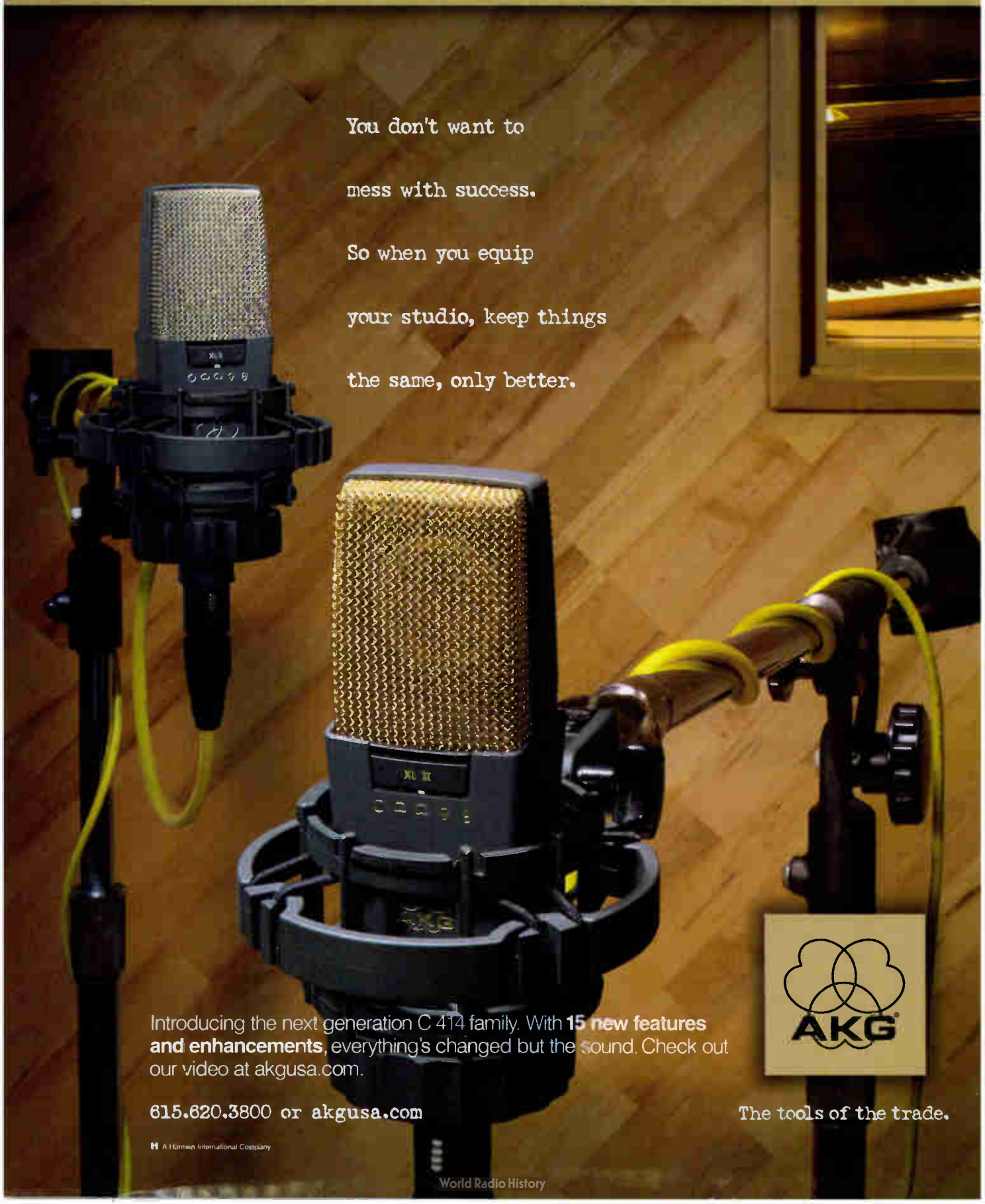

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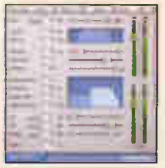
VS-LA2A & VS-1176LN



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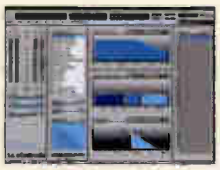

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PROFESSIONAL AUDIO AND MUSIC PRODUCTION
July 2004, VOLUME 28, NUMBER 8


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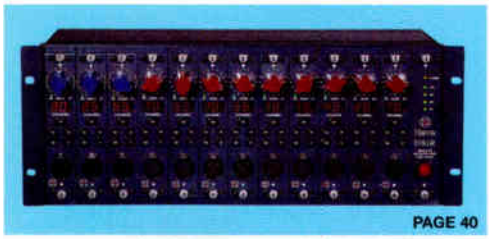
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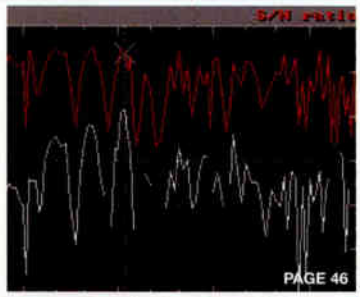
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features

On the Cover: The Lodge at Dark Horse Recording (Franklin, TN) features a Trident S80 board and Genelec monitoring system; the horse farm is included. **Photo:** Ron Neilson/Courtesy of Genelec Inc. **Inset:** Steve Jennings. **Spidey:** Courtesy of Sony Pictures.

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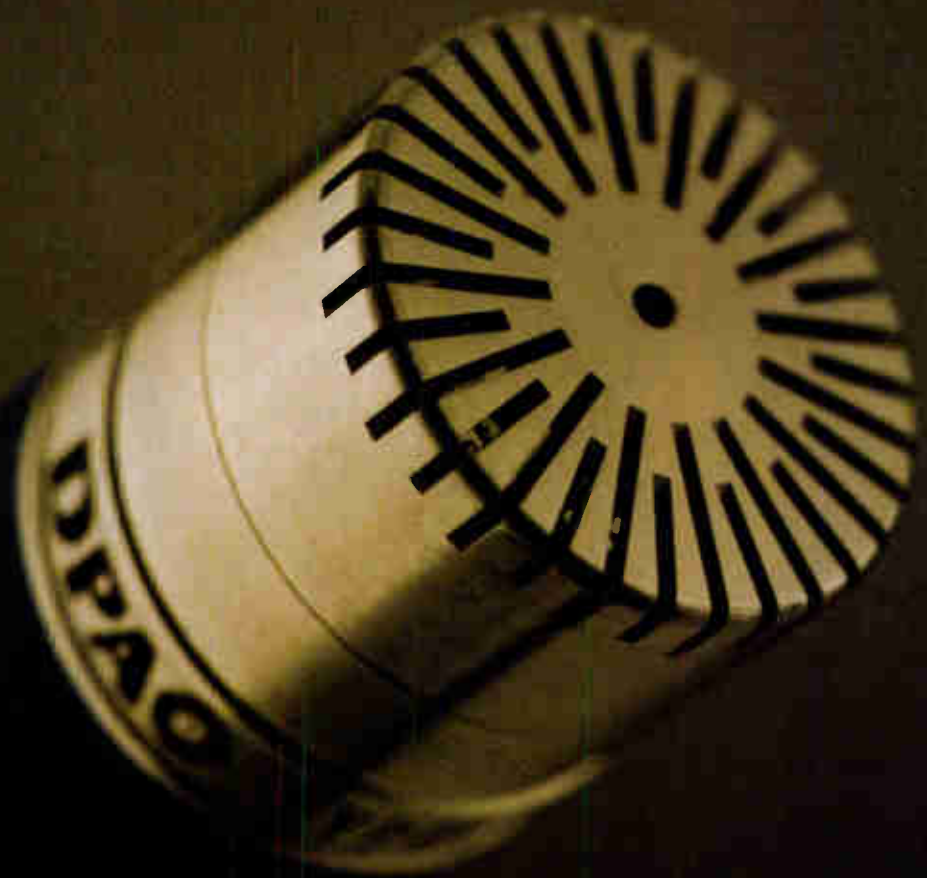
Is there any piece of equipment in your studio that is more than 20 years old and still the best?



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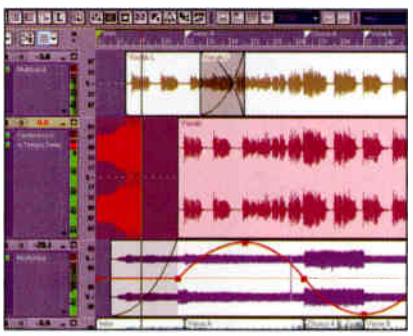

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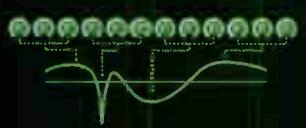

- Adjust DAW software parameters such as 4-band EQ via the rotary encoders

MIX CERTIFIED hit

At 2004 Winter NAMM, the editors of Mix magazine selected their "*hits of the show.*" We're proud that our US-2400 was one of them.

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Who Owns *Your* Live Recording?

There's nothing that compares to seeing your favorite artist or band perform live. Yet with the advent of multitracking and editing systems, live recordings have become "mostly live, except for all the parts where the performers spent weeks or months overdubbing new studio parts to replace the live parts on the live album."

In the old days, to hear a *real* live show, you had to go to the actual venue, catch a rare live broadcast or possibly trade for a tape from those few live bands such as the Grateful Dead or Phish who encouraged "tapers." However, today, with the availability of high-speed CD burners, fans leaving the venue with a legal, high-quality recording of that night's concert has become increasingly common.

The after-show CD is a textbook case of the "win-win" situation: Rabid fans get what they need, the avenue for illegal bootlegs is greatly diminished and artists get a much-needed revenue source in these days when label support of tours is dwindling. *Mix* has supported methods that promote legal purchases of music since the first audio-on-demand distribution services—such as Liquid Audio—debuted some eight years ago. And in the past 18 months, when artists started taking advantage of CD-R dubbers to market onsite live recordings, we've been equally jazzed about the prospects.

Unfortunately, a new development is not so pretty. Earlier this year, Instant Live LLC (a division of entertainment juggernaut Clear Channel) announced that it had acquired a U.S. patent covering a system of creating digital recordings of live performances. Essentially, the patent's "Event Recording System" is a convoluted and fairly vague description of off-the-shelf stuff you could pick up at any Guitar Center, but with highfalutin names like "secondary storage device" and "primary editing stations." In the patent's flow chart, it sure looks like a couple of DAWs with streaming backup and a bunch of CD burners, but you can go to www.uspto.gov, do a quick search for patent #6,614,729 and read it for yourself.

So far no problem, but Clear Channel has interpreted this patent to infer that it now owns the exclusive rights to *all* live performance recordings sold at *any* venue on the day of show, thus creating a virtual monopoly on the process. This development has not gone unnoticed in the industry, and small label Kufala Records, which produces live CDs of shows (although not sold onsite, as Kufala mixes live multitrack masters in the studio and offers them two weeks after the show) has called on independent artists and labels to challenge the patent. However, this is not going to come easily or cheaply, given Clear Channel's deep pockets and desire to defend its interests.

Beyond the music applications, could this patent be extended to companies that offer onsite duplication of lectures or seminars? Could churches be required to pay royalties for onsite recordings and duplication of CDs of services? Perhaps these examples are extreme, but given the patent's closing statement, "The present invention is not limited to that which is expressly presented in the specification and drawings," the implications of this could be very dire indeed.

George Petersen
Editorial Director

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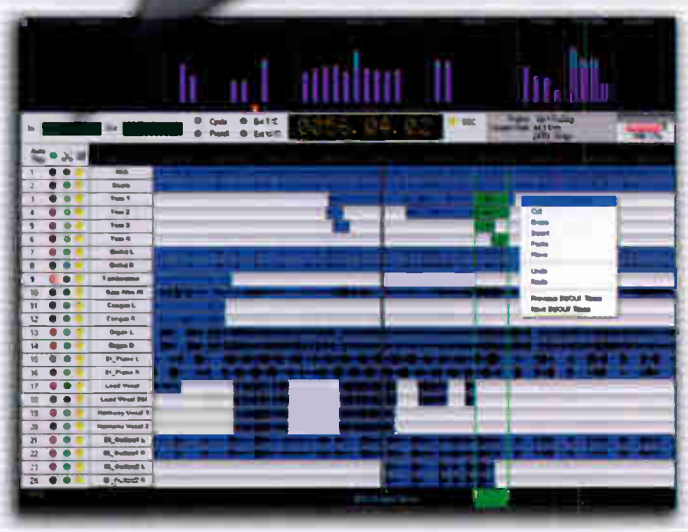

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Letters to Mix

WE STAND CORRECTED

I would like the readers of *Mix* to know that I was surprised and disappointed when I saw my "Homeward Bound" article published in the June 2004 issue. This article was not sent to me for approval before publishing and there are edits to my work that have caused confusion for the readers. First let me address Fig. 3. The red traces in the top window shows coherence (s/n). The two blue traces in the top window are the frequency response of the left and right speakers overlaid for comparison. The two blue traces in the bottom window are the overlaid phase responses.

Second, the studio photograph that the editors inserted into my article does not reflect the ideas I considered important in the text; i.e., symmetrical speaker and furniture placement. While home studios can have limited or restricted spaces, I encourage readers to make audio the primary consideration in their studio setup.

Robert Hodas

[Eds.: Mea culpa, Bob. Readers, turn to page 46 for part two of acoustic troubleshooting.]

THE NEW MEANS OF OVER-PRODUCTION?

I want to congratulate everyone at *Mix* for an outstanding issue. The May 2004 issue, "The New Means of Production," was a watershed of thought-provoking topics, so many that it has left me feeling a bit neurotic. From what I observed, it seems that more pro studios, producers and engineers are adopting more methods of the project studio (i.e., smaller facilities, more dependent on DAWs and plug-ins). It also seems to suggest indirectly that efficiency and convenience leads the trend more than the audio quality. While no one can argue with the ease-of-use and low cost of plug-ins, I have seen the downside of the virtual studio.

All computer-based systems are destined to become obsolete. It is the nature of technology to be constantly redeveloped and reinvented. While it may be difficult to repair some analog gear, it is easier to do than repairing an old computer with an out-of-date OS and non-current peripherals. When my OS upgrades, my outboard delay doesn't become useless like my plug-ins do. If I'm lucky, the developer will offer an upgrade; otherwise, I have a choice of being tied to an obsolete OS or losing the plug-in. After hours and hours of testing, I came to the conclusion that analog summing has more apparent depth and width and better overall dynamics than summing in the DAW. I found that, indeed, a 24-bit/96kHz recording has better dynamics, bass definition and an airy top end. I have also found that my clients like the flatter, slightly harsh sound of 16-bit/44.1kHz recordings mixed in the DAW.

Then there is the future as presented in Paul Lehrman's column ("Insider Audio"). The basic problem with digital audio is that it is finite in nature. It is hard to have a happy accident in the digital realm. I used to like the card catalog in the public library because I would discover things while searching for what I wanted. That's analog in a nutshell: less repeatable, more unpredictable. Digital is very repeatable, very predictable and in danger of making us all lazy.

In the ever-evolving world of audio production, we want to be able to re-create the sound of any recording at any time. We spend more time trying to dial in that sound than we do trying to come up with one of our own. The troubling part is that all of the equipment being developed is striving for [imitation]. In our world, time is money, and DAWs allow us to use time more effectively but I am not sure it's the best way. It seems like it's harder to just use your ears instead of your eyes when making mix decisions.

Todd Zimmerman
Studio 139

SINGERS NEED NOT APPLY

I've been using Vocaloid quite a bit, and I think the best way to use it is to not have it on your main DAW. I installed Vocaloid on a second machine, which allows for pretty easy auditioning while running the main sequencer on the first machine. If the machines are also networked, bouncing out the .WAV files from Vocaloid and bringing them into the sequencer is pretty easy.

My band, The Bots, was created wholly from speech synthesizers and 3-D graphics. I use Vocaloid among a variety of other speech synths to make it more into an ensemble. The Bots have released two CDs, a "record deal" with Magnatune and a second video in the works. It's been a long and painful ordeal, but I've finally gotten them to the point where they seem as real as any other band out there—except no live concerts.

BC

A N.E.R.D. GETS ONE WRONG

In your May 2004 issue ("Tour Profile"), N.E.R.D. front-of-house engineer David Haines is quoted as saying, "...the problem is that the 88 is a ribbon mic so that it gets thrashed really quickly." The famed Beyer M88TG is not a ribbon mic, but a dynamic.

Nick Joyce
NP Recording Studios

NOT ON MY MAC

Tom Kenny's "Technology Spotlight" on Windows Media 9 (May 2004 issue) was interesting but contains a contradiction. He first describes WM9 as "cross-platform," and then states that it includes "extensive built-in digital-rights management."

The fly in the ointment is that Microsoft's WM9 player for the Macintosh can't handle the rights-management features, making it useless for any Mac user who would like to work with protected files. The Mac player has been out for more than a year, but this critical limitation hasn't been addressed.

Surely, Microsoft isn't so deluded as to believe that this ploy is going to pry media producers away from their Macs. If they really want to play in this industry, then they need to acknowledge reality and provide full support for the computer from Cupertino.

G R Lewis

A PICTURE OR A THOUSAND WORDS

Thank you, thank you and (did I mention?) thank you for the last page in the May 2004 issue, for featuring Sinatra and reminding people that it's always the song (and maybe also the performance of that song) and not necessarily the gear. (Actually, it's never the gear.) It was genius.

Show me the plug-in that writes the hit song and I'll buy it.

Tim Bomba

Send Feedback to *Mix*
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FROM STADIUM TO STUDIO, EAST OR WEST

Remote Recording, Skywalker Sound and The Hit Factory have embarked on a marketing alliance in which the mobile recording facility will use The Hit Factory for music mixing and post on the East Coast and Skywalker in the West. "It's a great way to keep our clients assured of only the best sound engineers, technology and creative input with only one phone call," commented Karen Brinton, VP of Remote Recording. "It also allows us to take advantage of competitive pricing at the same time."

Virgin Records A&R VP Michelle Ryang said, "When I heard from Karen that Remote Recording, The Hit Factory and Skywalker Sound were creating a joint alliance, I was extremely excited! Not only are they combining the best of all worlds, it's all with studios that provide extremely high-quality products. The ability to create a package deal is very appealing to me since it creates an efficiency in coordinating this type of project, which is becoming much more frequent."

"I have great respect for the excellent quality both Remote Recording and The Hit Factory represent," said Leslie Ann Jones, director of music recording and scoring at Skywalker Sound. "Client satisfaction has always been one of our primary goals, and this new partnership represents an unbeatable combination."

"Our clients can now take advantage of our individual strengths—live recording, music mixing and post-production—all in a one-stop shop," added Hit Factory general manager Zoe Thrall.

Pictured above: Skywalker Sound's Leslie Ann Jones. Right: Karen Brinton of Remote Recording (left) and Hit Factory's Zoe Thrall

ABBEY ROAD, CHANDLER LIMITED RE-CREATE THAT CLASSIC SOUND

Abbey Road Studios (www.abbeyroad.com) and Chandler Limited (www.chandlerlimited.com) will develop a range of classic pro audio equipment based on the designs and circuitry of the EMI-produced desks and other equipment used at Abbey Road Studios during the 1960s and '70s.

Dave Holley

Wade Goeke

The first offerings are the Abbey Road Special-Edition TG1 compressor and TG2 preamp, which are now available.

The compressor is a re-creation of the classic EMI TG12413 limiter used in the custom EMI and Abbey Road recording and mastering consoles of the late '60s and features an all-discrete circuit with transformer balanced I/O. The TG2 preamp is re-created from the rare EMI TG12428 preamp and offers the same discrete transformer balanced amplifiers as the limiter.

According to David Holley, managing director of EMI Studios Group, "Many producers and engineers acclaim the acoustic quality of the original EMI consoles, and through this new equipment, we are pleased to make the Abbey Road sound more widely available."

GLOVER LAYS DOWN GROOVY TRACKS IN SEATTLE

Marvin Glover's new funk/groove/rock album *Muse* was produced by Larri "Bubba" Jones of Contact/Create Studios in Seattle. Jones has previously manned the board for such funk, R&B, jazz and rock artists as Cherrywine, Darrius Willrich and The Turn-Ons.

PHOTO: KIM AND ADAM BAMBERG AT LA VIE PHOTOGRAPHY

Marvin Glover (left) and Bubba Jones

"I'm trying to get a heavier, funkier sound than I've been associated with in the past," said Glover. "I convinced Bubba that Seattle's eclectic and engaging music scene is more conducive to making this record, unlike Austin [Texas], where I recorded *One*."

Glover said it was Jones' more subtle work on albums by Willrich and The Turn-Ons that got his attention. "The groovier sound I'm going for has a lot to do with the tempos, beats and quirky sounds we're working with," said Glover. "It's the new funky groove-oriented assault, which is all about layers and instrument placement."

The album is set for release this summer; shortly thereafter, Glover will hit the road with other artists on his Starving Dog Records label.

COMPILED BY SARAH BENZULY

HOW DID THEY GET THE CAR IN THERE?

They say parking is hard to find in New York City, but this is ridiculous. Many visitors to Avatar Studios' Studio A on April 13, 2004, were probably surprised to find an Acura TL sport sedan inside the famed room. Even more startling, however, was the sonic richness of the material playing in the car: a new DTSE 5.1 DVD-Audio release from DTS Entertainment of Porcupine Tree's *In Absentia*.

Such talents as surround mixer Elliot Scheiner, surround mastering engineer Darcy Proper of Sony Studios NYC and Porcupine Tree singer/songwriter Steven Wilson were in attendance. The car's sound system demonstrated the impressive depth and strength of the DVD, which also features myriad video and graphic extras for video players.

—David Weiss

Above: Avatar's Studio A was the ultimate garage for this Acura TL sedan. Below (L-R): Fred Maher (DTS), Richard Barbieri (Porcupine Tree), Walter Becker (Steely Dan), Steve Wilson (Porcupine Tree) and Elliot Scheiner (engineer)

ANTIGONE RISING
CAMPS OUT AT MIRROR IMAGE

PHOTO: DAVID KOUYOUMJIAN

Pictured L-R: lead vocalist Cassidy and guitarist/sisters Kristen and Cathy Henderson

Antigone Rising's new album features numerous producers including David Bendeth, who will also mix part of the album at Mirror Image Recorders (New York City). Not content to be pigeonholed as just another all-girl rock band, Antigone Rising (vocalist Cassidy, guitarist sisters Cathy and Kristen Henderson and drummer Dena Tauriello) cites numerous musical influences from Janis Joplin and Jimi Hendrix to the pop flare of the Goo Goo Dolls—all blended on Mirror Image's SSL board.

"The live room here sounds incredible," said Kristen Henderson. "The people at Mirror Image are so helpful and accommodating, it's great to be able to concentrate on our music without having to handle all of the logistics."

JIMMY JAM/TERRY LEWIS, GEORGE LUCAS, ELLIOT SCHEINER
TO BE HONORED AT TEC AWARDS

Producers Jimmy Jam and Terry Lewis will be awarded the prestigious Les Paul Award at the 20th Annual Technical Excellence & Creativity Awards, Saturday, October 30,2004, in San Francisco. Also during the ceremony, filmmaker George Lucas and famed engineer and producer Elliot Scheiner will be inducted into the TEC Awards Hall of Fame.

One of the most renowned production and writing teams of the past 20 years, Jam and Lewis have won three Grammys, including Producer of the Year in 1986. In addition to their groundbreaking records with Janet Jackson, the duo has worked with Mariah Carey, Babyface, Boyz II Men, Mary J. Blige and Jermaine Dupri, among others. They have had 15 Number One pop hits and 25 Number Ones on the R&B charts. They have also successfully delved into television and movies.

Everybody knows the great director/producer side of George Lucas, but he changed the way an entire world *hears* movies, from his revival of the big symphonic score for *Star Wars* and *Indiana Jones*, to popularizing LCRS Dolby Stereo and 6.1 Dolby Digital EX. This audio visionary financed SoundDroid, an advanced touchscreen DAW, 10 years before Pro Tools; developed the Skywalker Ranch audio facilities; pioneered long-distance ADR sessions over T1 lines; and founded THX to improve audio in theater, home and auto playback environments.

Elliot Scheiner is one of the most successful engineer/producers in the world today. With 16 Grammy nominations and five awards, Scheiner has worked with such artists as Beck, Faith Hill, Steely Dan, Ricky Martin, Sting, Bruce Hornsby, The Eagles, B.B. King, Van Morrison, Fleetwood Mac and Aerosmith. He is also a leading authority on 5.1 mixing and DVD-Audio.

For tickets or information about the TEC Awards, call Karen Dunn at 925/939-6149, e-mail Karen@tecawards.org or visit www.mixfoundation.org.

Elliot Scheiner

PHOTO: PER BEBEN-GEIL

Jimmy Jam (left) and Terry Lewis

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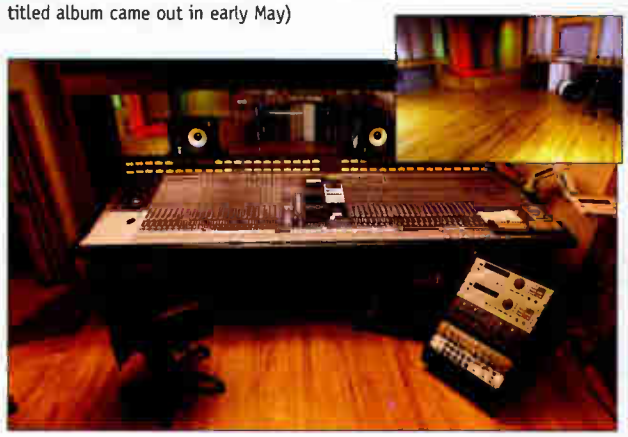
George Lucas

KLEPTO LABEL, STUDIOS MAKE SAN FRANCISCO DEBUT

On April 30, 2004, Klepto Records hit the San Francisco scene with the launch of its indie label and two recording studios, having purchased Different Fur Studios' analog rooms (pictured).

The digital studio offers three iso rooms and an executive lounge. Bands currently signed to the label include Ride the Blinds (whose self-titled album came out in early May) and Too Much or Too Little.

As part of the opening, studio owner/recording engineer Jeromy Smith promoted Klepto's new interactive Website, which hosts a Recording Engineers Resource Center where musicians can "shop" for their perfect engineer according to the resumes posted on the site, www.kleptorecords.com.



BRINGING IN STUDIO CASH

Builder, owner and operator of numerous studios, including Tommy's Tunes Productions, Tom Volinchak brings his licensing/artist development/technical writer/promoter/studio owner experience to print with his *Make Money With Your Studio* (Hal Leonard) guide to turning musical passions into a profitable venture. Topics for studio owners include sales and marketing techniques, promotional tools, adding value to your business, finding new business, making a studio demo, equipment tips, profiles on four successful studios, and a list of resources for continuing education, books and publications, helpful Websites, pro organizations and much more. The book is available at music and bookstores or through Music Dispatch (800/637-2852, www.musicdispatch.com).

CHACE AUDIO CELEBRATES 20 YEARS

Los Angeles–based sound preservation/restoration specialists Chace Audio (www.chace.com) has remastered film soundtracks into 5.1 or 6.1 multichannel stereo for DVD or theatrical re-release, including *Gone With the Wind*, *The Wizard of Oz*, *Close Encounters of the Third Kind: The Director's Cut*, *Easy Rider* and many others.

A large part of the remastering process uses the proprietary Chace Digital Stereo® processor (CDS), conceived and invented by Chace founder the late Rick Chace (pictured) in the 1980s. The CDS processor is a programmable workstation-based system to make true directional stereo with stereo surrounds from monaural sources.

"Within the last five years, the growth of home theater has powerfully demonstrated the capabilities of the multichannel stereo format," commented Bob Heiber, company president. "New equipment for handling elements in extremely difficult conditions, along with a fourth-generation optical reader, is already in the works. We'll only get to the future by recovering the past, so we want to be ready for it."

INDUSTRY NEWS


David Hansen

Jason Cambra has been promoted from general manager to COO at **Fishman Transducers** (Wilmington, MA), while **Barbara Sienczylo** is the new procurement materials manager...**Studer Professional Audio AG** has handed its Canadian distribution to Soundcraft Canada president **Jean Daoust**, who has formed **Studer Canada** (Quebec), which is independent of Soundcraft Canada...**ASCAP** (NYC) has promoted **Jason Silberman** to director of membership, pop/rock...After joining **Euphonix** (Palo Alto, CA) four years ago, **David Hansen** was promoted to VP of sales for the U.S., Canada, Mexico and South America. In other company news, **David McClure** now joins the other product/technical specialists for the Eastern region in New York...**Midas** and **Klark Teknik** (Worcestershire, England) announced that **David Wiggins**, formerly responsible for the company's international sales, has assumed equal responsibility for both brands...Indianapolis-based **Klipsch Audio Technologies** welcomed **Jim Breen**, business unit manager of commercial contracting and corporate development...New **Aviom** (West Chester, PA) director of international sales is **Joel Brazy**...Based in Glasgow, Scotland, **Stuart Thomson** is **Community**'s (Chester, PA) new regional market manager for Europe and the Middle East...Bringing 17 years of Sony Pro experience, **Clayton Blick** is **Studer**'s (Northridge, CA) new national sales manager...Founder of Audio Video Technical, **Michael Pollaccio** has been appointed **Gepco International**'s (Des Plaines, IL) Northeast sales rep for wire and cable...**Brian Krawcykowski** (MI/retail sales) and **Quinton Nixon** (pro audio, broadcast, post) have been promoted to **TC Electronic** (Westlake Village, CA) product specialists, and are joined by **John Schirmer**. In other company news, **Audio Geer** (Los Angeles) is now representing TC's live/install segment, TC-Helicon, Dynaudio Acoustics and Tube-Tech in Southern California...**Lab.gruppen** (Kungsbacka, Sweden) news: **Niels Helbo**, product manager, and **STP Marketing** (Madison, WI), sales representative of the year award...**Allen & Heath** (Cornwall, UK) appointed **James Langridge**, sales executive.


Jim Breen

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High Resolution Microphone

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Introducing the TLM 127

Neumann's TLM 103 was the first microphone to deliver classic Neumann quality to studios of any size. Now, the new TLM 127 brings even greater flexibility by providing multiple polar patterns* as well as a switchable pad and high-pass filter.

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NOTES FROM THE NET

Loudeye Offers Indie Tracks

Loudeye's IndieSource, an extension of its music label program, licenses hundreds of thousands of indie music tracks to companies building a digital music business. Indie music labels that license their content to Loudeye will be distributed to major digital music stores (such as Musicmatch and BuyMusic at Buy.com).

Recent agreements with indies have included India's Saregama, Avatar Records, Stern's Music, Paradise Artists, Maggie's Music, Corn Music Services, Rebel Records, Agog Creative Group and RoadHouse Records. Interested? E-mail indiesource@loudeye.com or visit www.loudeye.com/indiesource.

Trusonic Switched-On GarageBand

Trusonic's 250,000 artists can join GarageBand's music storage and services—boasting more than 1.7 million songs and an automatic new Web page using Trusonic's content that was once hosted on MP3.com; Trusonic is a former division of MP3.com.

"GarageBand.com provides the award-winning services and exposure that independent musicians deserve," said Dan O'Neill, CTO of Trusonic. "We're delighted to see them offer a new home for this incredible community of musicians and songs."

"Thanks to Trusonic's ingenuity and cooperation, it's a bright day for independent music around the world," said GarageBand CEO Ali Partovi. "Now, musicians can have the best of both worlds: free exposure to consumers and royalties from business users."

For more information, visit http://garageband.com/go/ts4.

iTunes Celebrates One Year, 70 Million Songs Sold

Apple's iTunes Music Store, launched a year ago, has sold more than 70 million songs—giving the service more than 70 percent market share of legal downloads for singles and albums. According to Apple, iTunes customers are now purchasing 2.7 million songs a week, a rate of 140 million songs a year.

Kicking off its second year, Apple launched the third-generation iTunes Music Store featuring more than 700,000 songs from the Big Five and more than 450 indie labels. New features include iMix, where users can publish playlists of fave songs on the store for other users to preview, rate and purchase; radio charts from more than 1,000 stations; added music videos and movie trailers; ability to play purchased tracks on up to five personal computers (up from three); and automatic WMA-to-AAC conversion. Version 4.5 for Mac and PC users is available as a free download from www.apple.com/itunes.

In other iTunes news, author Simon Higgs has recently self-published his *The Guide to Selling Your Music in the iTunes Music Store*, which covers the entire process of posting music on Apple's store. Topics include approaching Apple, encoding tracks using iTunes Producer and submitting music, as well as a special section on IRSC codes.

The book is available at Higgs Communications (www.higgs.com/publications/itunes-guide.html) for $20, plus shipping and handling.

It's Fun to Promote Yourself

A subsidiary of Advanced Solutions and Technologies, ItsFun.com allows emerging artists a place to promote their music for a $29.95 startup fee. The site will retain five percent of each track's purchased price to pay the costs of staff, Website expenses and improvements. www.itsfun.com.

AMD64 MASTERS GROUP LAUNCHED

At a packed press conference in Las Vegas, AMD announced the formation of the AMD64 Masters Group, comprised of top digital production masters from the entertainment industry. Members include Grammy Award–winning and nominated audio pros Phil Ramone, Elliott Scheiner, Frank Filipetti, George Massenburg, Rory Kaplan, Chuck Ainlay, Fred Maher and Robert Hill, and Dan Gregoire of JAK Films, pre-visualization supervisor for *Star Wars: Episode III*. The group members have turned to the 64-bit performance of dual AMD Opteron™ processor-based workstations running off-the-shelf software to take host-based digital content creation to new levels. "This technology is enabling a revolution in content creation simply because it removes limitations, providing the artist with extraordinary power to create," said AMD's Charlie Boswell. "What was once only accessible to the largest studios with the largest budgets is now available to everyone." For more about AMD, visit www.amd.com.

Speakers at the launch included (left to right) Asleep at the Wheel's Ray Benson, AMD's Charlie Boswell, engineer Elliott Scheiner and JAK Films' Dan Gregoire.

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

Introducing the Digidesign ICON — an integrated console environment featuring the all-new D-Control tactile worksurface, Pro Tools | HD Accel as its core DSP engine, and modular HD audio interfaces for analog and digital I/O. The first truly integrated console solution of its kind, the Digidesign ICON environment empowers you to accomplish every aspect of a project — mixing, recording, editing, and processing — complete with integrated video and delivery. ICON provides unmatched control with a fully automated, completely recallable, total production system.

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Dark Horse Recording

By Heather Johnson

Despite a volatile music industry and a proliferation of home/project studios, Dark Horse Recording has not only survived, it's expanded to more than four times its size and remains one of the most comfortable studios on one of the most tranquil settings east of the Mississippi.

In a rural area of Franklin, Tenn., owner Robin Crow built the original Dark Horse Recording, now known as the Cabin, in 1992 to record his own music, but clients such as Faith Hill, Trisha Yearwood and Neil Diamond put a halt to his personal plans. The natural light-filled studio now features a Trident Series 80 console with AMS Neve Flying Faders, two Formula Sound Q-8 systems and five isolated spaces, one of which includes a Yamaha C7 MIDI grand piano.

The Cabin

PHOTO: HARRY BUTLER

PHOTO: RON KEITH

Owner Robin Crow in front of the ever-expanding Dark Horse

Two steadily booked years later, Crow personally began constructing the Lodge, which he initially envisioned as "the grandest of all overdub rooms. It took me three-and-a-half years to build, and by the time I finished, the entire industry had changed," he says. "All of a sudden, overdubs had completely disappeared. Everybody was building home studios and recording to Pro Tools, so I had to immediately start changing things."

With an estimated 75 percent of its business snatched away by the "rise of the computer chip," as Crow calls it, the entrepreneur looked for new ways to serve his clients. "Because we are out in the country, I thought, 'Well, the one thing we have is a lot of space,'" he says. "So I decided to enlarge the studios to accommodate tracking sessions."

The largest of the four studios, the Lodge's cathedral-like control room accommodates up to six musicians who can theoretically gather around the Trident and Martin Sound ACX 24-channel sidecar. The Lodge also features an 18x20-foot drum room and a third room with a second Yamaha C7 and a Hammond B3 organ.

To accommodate the studio's DAW-friendly clients, Crow erected a Pro Tools|HD suite and the Barefoot Studio, which has a 32-input DDA CS-3 and Yamaha O2R consoles standing by, although most clients prefer to roll in their own workstation and take advantage of the studio's Otari RADAR IIs, 24 I/O Pro Tools|HD 3 Accel mobile rig and a mic closet stocked with AKG, Neumann, Shure, Sennheiser and Sony options.

Although Dark Horse embraces the industry's rapidly changing technology, Crow focuses less on having the latest "bells and whistles" and more on top-notch maintenance (courtesy of staff engineer Michael Modesto) and timeless vintage pieces. The studio is also one of the few middle Tennessee studios with guest accommodations, which adds to the facility's indulgent, retreat-like atmosphere. Most lounges contain their own fully stocked refrigerator, and the main kitchen is packed with more snacks and beverages than a 7-Eleven. "It's all about 'What can we possibly do for you,'" Crow says. "We have barbecues every week. When people come to Dark Horse, there's a bounty of abundance in every way."

Apparently, that philosophy works well, as Crow claims 2004 "the best year they've ever had" and cites May as the most profitable month in Dark Horse history. Recently, the studio hosted tracking sessions for CCM acts Reliant K, Caedmon's Call and Michael W. Smith, which is partly due to the studio's Williamson County locale. "This is where CCM music lives and breathes," says studio manager Bill Elder, referring to area labels such as Word, Reunion and Essential Records, among others. Guest lodging makes Dark Horse an attractive option for out-of-town bands, and package deals make the facility affordable for independent acts. "I can put them in a tracking room for a day and then move them to the overdub room," Elder says. "They're paying about what they'd pay at a [smaller] studio, but they get all of our amenities. We take care of them just like everybody else."

In the midst of a banner year, Dark Horse is expanding again, albeit conservatively. A fifth room, to be patterned after the Barefoot studio, is in the works, which Elder sees as a viable alternative for homebound producers. "I'm seeing more of a demand for these production rooms," he says. "Sometimes, producers want accessibility to the synergy that's around here. Also, it's becoming more apparent that recording studios, especially at this level, really have to focus and define themselves—be that thing and do it well."

Meanwhile, Crow has even grander ideas brewing. "I'm real excited about adding some day spa elements to [Dark Horse]—a terrarium and a sunken hot tub—because once again, I ask myself, 'If I were Madonna, what would be of interest to me?' Those who embrace change will become leaders in every field."

For more information, visit Dark Horse Recording at www.darkhorserecording.com. ■

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BY STEPHEN ST.CROIX

I Can See for Miles and Miles...

Cadas, That Is

THE CARTOON BEFORE THE MAIN FEATURE

We have cicadas. 93 dB of cicadas, all making that special *Mars Attacks* flying saucer sound in 360.1 surround. They are beautiful in a sort of painfully loud, droning chord sort of way. They sing this constant sort of diminished fifth chord that makes the hair on your arms stand up. It is difficult to talk over them and they fly into your mouth when you try.

If you pick up a male, he talks to you and you can hear what a single one sounds like—sort of like an ultimate Solo button (complete with two glowing red alien solo lights). The sound that one makes is nothing like the Phil Spector Wall of Sound that they achieve in concert. Quite educational.

And speaking of education, here's how they do it. They have two membranes on their sides, each attached to a muscle that pulls them inward. These membranes are domed, so they snap like those old steel clicker toys used to, or if you are not 90 years old, like a soft drink can does when you poke it. This little sound is resonated in a tuned internal cavity and then (and this is the crazed part) emitted via a coupling horn that provides a gain of 20x—*from their eardrums*! Damn. Makes my tinnitus seem a little less horrible.

See? I *do* write about audio.

But while cicadas are incredibly impressive in their ability to break local noise pollution laws 12 hours a day, they are even more impressive in what they can do to a windshield. I have deduced that they spend 17 years underground making two-part epoxy, which fills 95 percent of their not-so-little bodies. Then they come out and fly into your windshield, explode and instantly the epoxy sets. I am not kidding: It takes less than half a second for cicadagoo to become 100-percent water, alcohol and wiper-proof. They hit, you push the wash button, all the other bugs get dissolved and wiped away, leaving perfectly cleaned cicadagoo for your enjoyment.

So there you have it. And don't worry. I won't write about them again for at least 17 years.

And now on to the main feature.

THE ACTUAL COLUMN. *PART 1*

I want a true virtual studio environment. You do, too.

Some of you may be ready to pull the trigger now, others might wait until it's actually viable. Wusses. [A *real* man jumps without looking. Evaluates his decision as his face slams into the newest technology at 120 mph.]

I expect no less of you.

But I wouldn't ask you to do anything that I wouldn't do. And I realize that, given my recent crash history, this pledge might not instill the warm and fuzzy feeling of trust that I am attempting to create. So with that in mind, we are going to make this jump together, and we're going to cheat just a bit. We'll take a real comparative look at what's available before we Butch Cassidy off that cliff of familiar technology.

THE TREE OF STRIFE

In proposing an examination of the state of virtual or computer-based recording, it is important to first identify and fully analyze the actual structure of the sub-components and their relationship to each other. Nah...not really.

But there are a couple of branches that do apply.

Most of us think of DAWs of some sort when the topic of virtual studios comes up, as well we should. But this aspect of digital recording has been featured in *Mix* by myself and many others on countless occasions, and most certainly will be again soon. And then again shortly after that...

Most of us think of DAWs of some sort when the topic of virtual studios comes up...[but] we will be looking at computers as production tools, as scoring aides, as musical instruments and even as the musicians themselves.

So in this series, we are taking the road less traveled. We will be looking at computers as production tools, as scoring aides, as musical instruments and even as the musicians themselves. No view through the glass from the control room into the studio nor the other way around. In fact, no looking glass at all.

One rabbit, one rabbit hole, one computer. 110 volts going in, music coming out.

BITS FOR BUCKS

We will be examining the viability of throwing out every square foot of your production gear and recording space and replacing it all with a computer, a control interface and a couple of keyboards. Buy them all at once, at one place and...one bill makes you smaller.

Then you produce a hit song or a hot spot, sell it and become famous and sought after, and...one bill makes you big.

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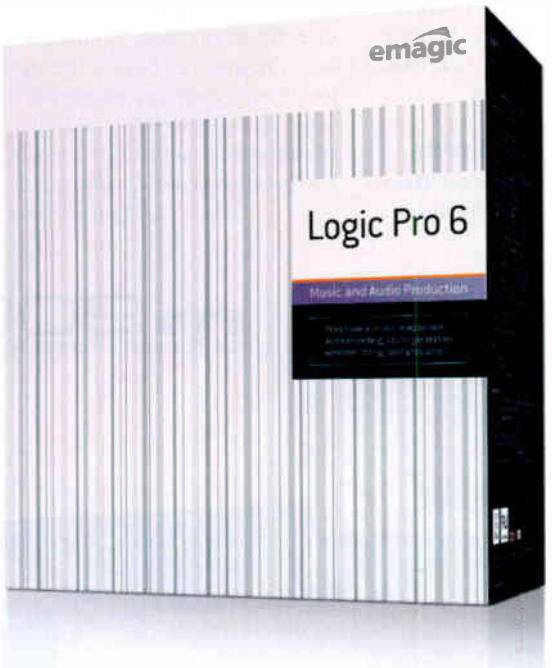

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FAKE MUSIC, OR WHEN REALITY IS INCONVENIENT

You already have a DAW (right?). Well, assuming you can pound out a tune, you need just three more things to pull off a one-man production studio:

1. Software that replaces everybody you know
2. A MIDI/USB keyboard to talk to that software
3. A synth to do your initial idea development and rough voicing

If you can't make keys sing, no problem. Just make it a *two*-man studio or run slightly different software (more on that later).

NOTHING'S BEEN THE SAME SYNTH THEY CAME

First things first. Because there is a certain overhead when using today's more powerful MIDI/soft synth/sampling/looping/tracking/recording/mixing software (the description alone hints at a certain complexity), it usually works out a lot better to start off with a freestanding synth that lets you pick your voices as fast as you can think of them and start recording instantly.

For me this is crucial. Specifically, I have found that I need at least one full-blown sample-based digital workstation/synth. One with a fast and powerful approach to voice management. I just don't have the patience or discipline to keep new musical ideas in my head while I search for and then load and set up the next voice.

And choosing this machine is complicated by the fact that I am unfortunately distracted by cheesy, wimpy fake voices when I compose. I am, um, spoiled.

This means I can't use a crappy-sounding keyboard for writing even though I know I can replace its useless voices with good ones later.

I am deeply influenced by the instrument that I hear when I play keys. I am not going to perform or phrase a developing idea the same way on a B3 as I would on a Bösendorfer. And I don't perform with much sensitivity or expression at all if I can't even tell if I am playing an organ or a piano. I need to actually *feel* it. And I only feel it when I can close my eyes and successfully pretend that I am playing a *real* Wurlitzer if that is what I have chosen.

HARD TIMES MAKING HARD TINES

This is *very* hard for a keyboard to do. There are so many technical reasons why this is a most ridiculous goal that it would be hilarious if it weren't so frustrating. Here are the top three, as dictated by real-world economic constraints:

1. The amount of waveform ROM. Last year, they had 32 or 64 meg ("equivalent"), and this year 128, 160 or 175. Woo-hoo! And this five bucks' worth of memory is shared by a *thousand* instruments! But the manufacturers are so proud of these ROM specs that they damn near paint them on the sides of their factories. Well, the pianos I have in my Mac are 2 *Gigs* each and the drum kit is 35!

2. The actual horsepower. These things really need to be more powerful than any PC: They must get 128 voices out as fast as you can hammer the keys and have real-time reverb, EQ, compression and a host of other crazed effects. Already more than any PC can deliver? Close to it, but add knobs and sliders, displays, a bunch of plastic ivories and all kinds of I/O—and then sell them for around $3k. Mmmm. A lot of serious compromises have to be made, and a lot of very clever programming and dedicated silicon have to be created to hide the compromises. Admirable, actually, that the few good ones are actually good.

—CONTINUED ON PAGE 153

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Differentiating itself from standard computer I/O boxes which are typically based on a patch-bay paradigm, the Omega 8x4x2 USB I/O mixer is based on a mixer paradigm and includes input, output and mixing functions that support a variety of tracking/monitoring applications while requiring no additional mixing hardware. The I/O mixer is packed with professional features such as ultra-transparent, high resolution A/D converters, extremely low-noise mic preamps with 48-volt phantom power and active balanced line level inputs. MIDI and S/PDIF ports allow connection to a variety of digital equipment.

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BY PAUL D. LEHRMAN

Alone Again, Virtually

The Ups and Downs of All-In-One Production

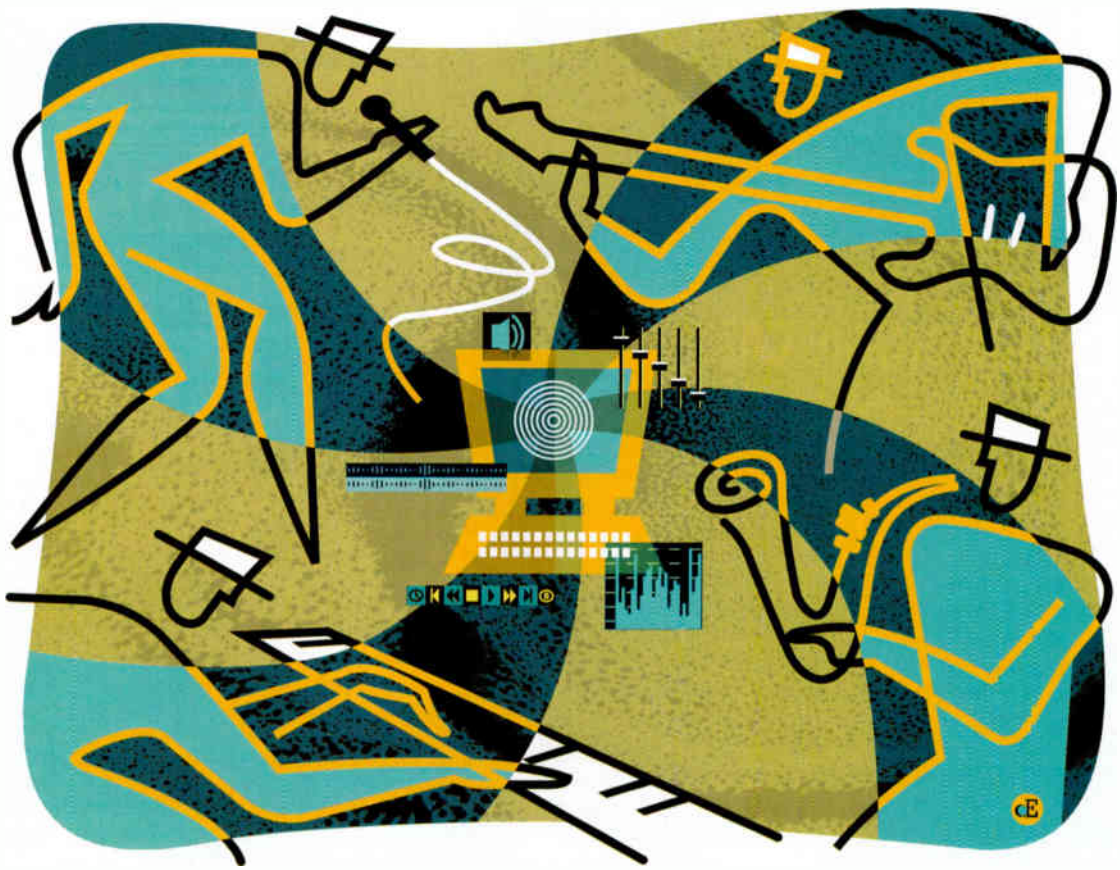

ILLUSTRATION: DAVE EMBER

Just as millions of Americans have come to believe that "You can have it all," in our industry the new mantra is, "You can do it all." It's hard to open a magazine, go into a music store or get through the security gates at a trade show without being bombarded by this-is-all-you-need workstations and software from Pro Tools to GarageBand. And it's true that what you can buy these days for very short money is absolutely mind-boggling and—this month bringing Summer NAMM—it's about to become more so. In a couple of weeks in Nashville, the art and science of stuffing more functionality into smaller, cooler-looking and cheaper packages will no doubt take yet another quantum leap.

Of course, the one-man-band recording concept is nothing new. When Les Paul invented multitracking, he didn't do it for a band, he did it for himself. On Paul McCartney's first solo album, the former Beatle played all of the instruments by himself. Part of the draw of electronic music from its earliest days was that the composer had complete control over the finished product. I first tried it during my freshman year of college: To get out of writing a term paper on William Blake for an English class, I set a bunch of his poems to music and wired two stereo tape recorders together so I could layer several instruments and sing harmony with myself. A few years later, while on a mercifully brief songwriting binge, I walked into a high-end 8-track studio in New York with all of the money I could scrounge up and managed to come out with a pretty decent four-song demo on which, like McCartney, I overdubbed all of the instruments: guitars, bass, keyboards and even drums. Unlike McCartney, however, my efforts went nowhere.

It was when cheap "semi-pro" multitracks came along that the cost of entry to the solo private studio fell off its first cliff. Multitrack hard disk audio was another milestone, and the fall off that cliff continues to accelerate as hard disk space keeps getting cheaper. How's this for a statistic: Between 1984, when I bought my first 20-megabyte hard drive for $1,200, and last week, when I bought a 120-*giga*byte hard drive for $120, the cost of random-access digital storage has gone down 99.99833 percent!

MIDI had its role in promoting the one-person-orchestra concept, as you didn't need the actual instruments

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anymore. But there was still a cost factor: When Yamaha first ruled the synth world, if you needed multiple FM voices, then you bought multiple DX7 keyboards at $2,000 or so apiece. But pretty soon, you could get a TX816 rack, saving more bucks and space. Then, manufacturers figured out how to make multitimbral synths that could take the place of 16 or 32 modules. Since then, synths and processors have shrunk to the point where they take up literally no space at all. As the pundits at *Wired* magazine like to put it, they're made of electrons, not atoms.

Then there's the peripheral hardware. Who could have foreseen the day when producers would pass the time on a transcontinental flight editing their next album on a computer on their lap? The world of education has been affected just as much: Only five years ago, when I would do any kind of a talk on music and multimedia, I'd have to take a car. That's because I needed a desktop computer stuffed with PCI audio and sampler cards, a CRT monitor, a full-size keyboard synth, a video deck and a SMPTE synchronizer.

Now I can take a plane or a subway (or in the case of this month's MacWorld Expo—which is back in Boston for the first time in seven years and happens to land right in the middle of my vacation on Cape Cod—on a ferryboat) with only my lowly iBook in tow. The synths and samples are in a Reason patch, the audio comes out of the computer's headphone jack (if the audience is really picky, I can schlep a Mark of the Unicorn 828, which weighs 25 percent less than the iBook), and the video is a QuickTime movie that syncs up perfectly in Digital Performer without a SMPTE bit to be found anywhere. All I need are audio and video patch cords and I'm in business.

In my home studio, I still have three VCRs and as many CRTs, two mixers and four racks of hardware modules, but a lot of that stuff is not getting very much use. I could take that same iBook (which is already three years old but still kicks butt) and add one of the new, cheap, but highly functional MIDI/USB keyboard/control surfaces, a couple of much-better-than-you'd-expect-at-the-price Chinese large-diaphragm condenser mics and an inexpensive FireWire audio interface (they're finally here!) with S/PDIF I/O and not-at-all-bad mic pre's and end up with a pretty darn good little production facility that can be thrown, with room for cables and stands, into a carry-on suitcase. And the total cost would be less than any 8-track deck that was ever made—or my first Mac.

The studio-in-a-box is now so common that it's hard to imagine that there was a time, not so long ago, when top-selling acts would agonize over the decision to build their own studio: Would the investment be justified by the money they'd save *not* making their next two or three albums somewhere else? Now that formula seems ludicrous: What I spent on that four-song demo in the '70s was more—in *1970s* dollars—than I would need to spend in *today's* dollars to get a computer-based rig that could blow the socks off of anything I could have done in that studio.

But the fact is, the greatest tools in the world are no good if you don't know how to use them. And what you do have to know, and which no computer by itself can teach you, is music.

So, obviously, this is the end of the recording industry as we know it, right? Well no, not yet, because most of us, it seems, are still working. And just as "You can have it all" is but a propaganda slogan as opposed to a practical way of life (you can't, for example, have a functioning government with no taxes, and you can't have peace in the Middle East with two SUVs in every garage), "You can do it all" is a nice way to sell toys, but it falls short in reality.

It's true that thanks to products like Absynth, Kontakt and Reason, you can load up racks and racks of the most sophisticated synthesizers you could ever imagine. With GigaSampler, you can have at your disposal entire virtual symphony orchestras that are capable of making nearly every individual and collective sound that a real symphony can make. With Synthogy's new Ivory virtual instrument, you can have a $175,000 9½-foot Bösendorfer Imperial Grand piano, beautifully recorded in an exquisite hall, at your beck and call. (Full Disclosure Department: I'm currently helping this company with its documentation.)

And it's true that tools like Sonar, Deck,

—*CONTINUED ON PAGE 154*

We didn't mean for it to outperform tweaky mic preamps costing three times as much.

(Okay. That's a lie. We totally did.)

When you pay thousands of dollars for a "boutique" studio microphone preamp, you should expect a tight, focused high-end, superior ambience retrieval, detailed lower bass octaves, and a highly articulated midrange. In short, it should give you the most from any mic you plug into it.

Not coincidentally, that's also what you get with Mackie's new Onyx 800R 8-Channel Premium Microphone Preamp – at a decidedly less boutique price. The no-compromise Onyx 800R features new high-performance analog circuitry developed specifically for 192kHz audio, coupled with the finest A/D converters on the market, giving you impressive specs like 123dB dynamic range and an amazing 0.0007% THD. The 800R also gives you tweaky features like a Mid-Side Decoder and Variable Mic Impedence control, which lets you "tune" the preamp to any connected microphone.

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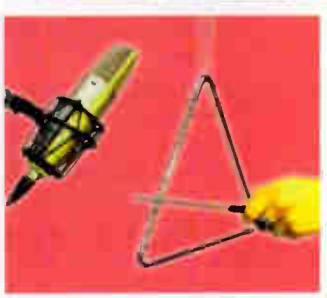
THE BIG BEAT

By Blair Jackson

From *congas* to *tablas*, there's a world of amazing percussion instruments to enliven your sessions

As the signature sound of world music groups to Latin acts like Gloria Estefan and contemporary pop legend Carlos Santana, percussion plays an essential, even lead role in the mix; in some cases, even to the point of "sharing" vocal duties with lead singers. To balance the nuance of percussion's contribution, engineers have developed some very specific techniques. *Mix* talks to some of the industry's foremost drum-savvy engineers—Eric Schilling, Jim Gaines, Antonio "Moogie" Canazio and Tom Flye—to find how they capture the essence of these unique instrumental personalities. To hear album clips and learn more about the instruments featured here, go to www.mixonline.com.



Eric Schilling: Miami Heat

Originally from the San Francisco Bay Area, Eric Schilling has been a leading light in the Miami recording scene for the past two decades, working extensively with Gloria Estefan (more than a dozen albums) and top Latin artists such as Cachao, Raúl DiBlasio, Ricky Martin, Julio Iglesias, Shakira, Thalía and Cuban horn legend Arturo Sandoval.

Schilling stresses that each style of what is commonly called Latin music has its own peculiarities and demands. "When I started recording Latin music, I had to adjust to what the norms were, and once I got used to the way things are normally done, it really made sense to me and you realize that songs might not work unless you do it that way," he says. "In salsa music, for example, the cowbell is always very prominent; in fact, it's sometimes almost as loud as the lead vocal. In some ways, the music is based around that beat, and if you don't mix it that way, it sounds weird to people. Last fall, I did a *merengue* artist and that's also quite stylized, right down to where you pan things because that music is based on a couple of things including the *guiro*, which is like a gourd that has a fine ridge down it and you play it with a stick or a wire brush and it's very bright; it's almost like a hi-hat.

"If I have a project where I have a lot of percussion, say four or five things at the same time—guiro, cowbell, conga, timbale—I don't go for a lot of room sound; even with close-miking, you're still going to get a lot of bleed from a percussion section. For congas, if there are two drums, I'll typically do it with one microphone off the drum a bit—say a foot-and-a-half in front of the drum and a foot or foot-and-a-half above it, depending on how well the drums speak. I sometimes use the Sony 800G mic because it's a little bit bright if you get away from the drum a bit. If the drums are really dark, I'll probably get a little closer to get more slap of the hands. If the player's really good and the guy has a great sound to start with, I don't need to be quite as close.

"For timbales, I do what most people do: mike them from down below and from uptop. You do it from below because on a lot of Latin stuff, especially if it's salsa, they use

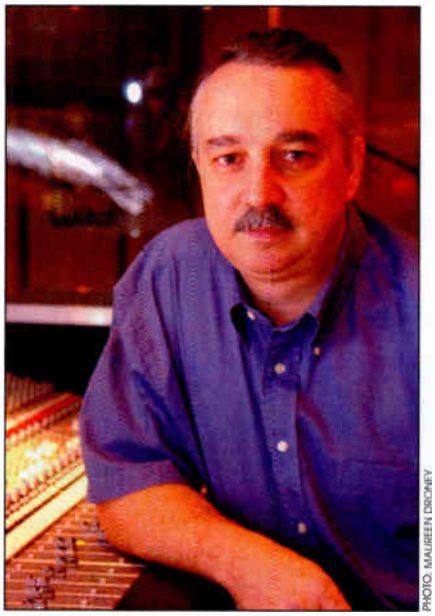


PHOTO: MAUREEN DOONEY

the *cascada* sound, which is when they play the side of the drum. So you need the mic below to get it. Typically, I'll take a pair of [Sennheiser] 421s or maybe some kind of dynamic below and then I'll put condenser uptop—of course, you have to flip the phase of them—and what you have to do is get a balance between the different sounds: the crash, the cowbell, the fills, the cascada."

When it comes to preamps with percussion, "It totally depends on the console," Schilling says. "I'm not one of those people who thinks you have to have a specific preamp for a particular instrument. If I'm on a [Neve] VR, I'm pretty content to use the preamps in the console. If I'm on one that's not quite up to that snuff, I have a couple of outboard preamps—Neves that I go to first for percussion. I also have some Crane Song stuff I really, really like, but I don't tend to use that for percussion."

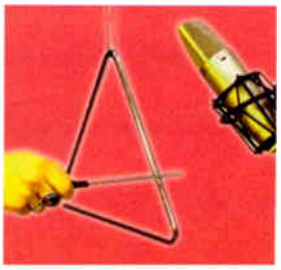
Schilling has been recording to digital since the late '80s, working on such fondly remembered machines as the AMS AudioFile, Akai PostPro and Mitsubishi 32-track before the current wave of workstations. Digital definitely affects how he cuts percussion: "What you hear is what you're going to get, with nothing added," he notes. "There's no fatness added [like there is with analog tape], so you have to be careful not to make it too bright because there's no softening of the top end, which [analog] tape is going to do.

"With a percussionist, it's all about the tone he gets. Gloria's had the same guy for years and he has a unique sound and takes a lot of care with his drums—his drums are like his kids to him. So you start with the person playing and then it's the drums they're playing. If those two things are good, my job is pretty straightforward. If a percussionist has a bad set of drums—if they're very dark and I have to add a lot of top end—it's more of a struggle. To make it brighter, I might pick a 414; if they have really nice-sounding drums, I've used Sony C-37. If they're really struggling, I might use a 421 if the midrange isn't there."

And if he only had one mic for a table of hand percussion? "I'd use a 414. It might not be the absolute best mic for *all* things, but it'll work on a lot of things and it's very reliable."

> In salsa music, the cowbell is always very prominent; it's sometimes almost as loud as the lead vocal; in some ways the music is based around that beat and if you don't mix it that way, it sounds weird to people.

Suggested listening: Gloria Estefan's *Mi Tierra* (Sony), Cachao's *Cuba Linda* (EMI Intl.)



Jim Gaines: That Santana Sound

Memphis-based Jim Gaines' resume includes discs by everyone from Albert Collins and John Lee Hooker to the Neville Brothers and Stevie Ray Vaughan. But we wanted to talk percussion with Gaines because he's worked on and off with Santana for more than two decades, including such important works by the band as *Shango*, *Blues for Salvador*, the google-Platinum *Supernatural* and last year's hit follow-up, *Shaman*. When we spoke in early May, Gaines and Santana were toiling at a West Coast studio in the beginning stages of the group's next album.

Have there been any changes in the way he records Santana's vaunted percussionists during the years? "Nothing in terms of how I approach them," he says, "but we have some newer microphones to work with. When I first started with Carlos in the early '80s, a lot of the mics being used were 87s—older mics—and some of the new breed—[AKG] 414s. Now, I'm sort of between those two worlds. For a while, I used some of the Shures—90s and 91s; little condenser mics you can clip right on [percussion]. The group was using them live, and we tried them in the studio and they were okay, but now I've gone back to using [Shure] 57s on both the congas and timbales. I'll also sometimes use RØDE mics—1000s—in some of the mixes, and sometimes 414s if I want brightness out of the timbales.

"The great thing about using 57s on congas is they can take the power and still get the clarity you want. Congas are not simple instruments to record—there's a lot to the sound: the slap of the hand, the drum's resonance, how the different drums combine. A really good player will give the snap to make that conga ring over. The conga has a lot of tone with the right guy playing it; with the wrong guy playing it, it's just a thud. Raul [Rekow, Santana's longtime conga player] plays five congas, each tuned to a different note. Generally when I'm recording, I'll want one mic for each drum—usually 57s—just a few inches off the head. With five drums, we want the separation. And if I can get by with it, I also try to do a little room miking to add a little air to him. And that [mic] can be anything—

an 87 or I may use the RØDEs. If we're cutting drums in the same room, obviously I can't open up [the room mics] too much, so I'll mike [the congas] tighter. In an overdub situation, though, I'll get off them a little bit more.

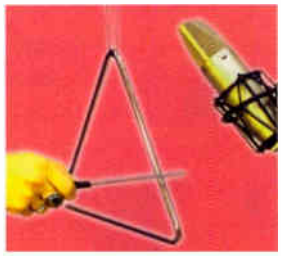
"For Karl Perazzo's timbales, we've tried a couple of different things. Sometimes we mike them underneath with 57s and sometimes we go over the timbales. The problem with miking over the timbales is you get so much cowbell in there. That's where the cowbells sit and you have to be careful not to let that overpower everything. So we've gone back and forth—over and under. I've also used 421s there. With timbales, you want to get the attack of the stick hitting the head and rim at the same time.

"Karl also plays congas—he has two on his set—and we sometimes mike those as one and sometimes as two, depending on whether we're trying to cut back on the mics. There's a *djembe*, which I mike under, to get the bottom end. And then there's a *surdo*, which is this great [Brazilian] low-end drum that Raul plays with a big mallet. On that one, I like to use an [AKG] D-112. I treat it like a bass drum. Karl also has what we call the toy section, which is little bells and a chime tree and things like that. You'd be surprised at how loud some of those little instruments can get; you have to be careful with them. We've used different combinations of 57s and 421s and, again, a 414 as an overhead to give us some air."

And a final note on recording percussion with Santana: "For the past few years, Carlos has been working with a lot of songwriter/producers, so we'll get stuff cut in home studios that already has drum machines or other [synthesized] percussion parts. Fortunately, most of them leave us space because they know we have a percussion section. What happens a lot of times is the writer will put down a guide percussion track and then we'll replace it with Raul and Karl. But occasionally, we'll leave some of the writer's own little percussion touches because it adds to the track; we just have to be careful not to get the sound too saturated. What's funny is now a lot of people are sampling [Karl and Raul], so our guys end up playing with their own sound already. We've run into that several times."

Congas are not simple instruments to record; there's a lot to the sound—the slap of the hand, the drum's resonance, how the different drums combine. The conga has a lot of tone with the right guy playing it; with the wrong guy playing it, it's just a thud.

Suggested listening: Santana's *Milagro* (Polygram) and *Supernatural* (BMG/Arista)



"Moogie" Canazio: From Rio (and L.A.) With Love

In Brazilian popular music, percussion is paramount—everything from huge sections of large-frame drums to the insistent rhythmic *ting* of tiny triangles. Growing up in Rio de Janeiro, Antonio "Moogie" Canazio was an aspiring drummer in a city filled with them. But he first made his name in the music business as a club DJ in the early and mid-'70s, and later as an engineer in Los Angeles' Kendun Recorders and other studios. Since those days, he's gone back and forth between Brazil and L.A., working with top acts in both countries. Among the Brazilian giants he's worked with are Sergio Mendes, Caetano Veloso and Maria Bethania.

By phone from Brazil where he was mixing a live DVD for Bethania, Canazio began talking about how he recorded the electrifying opening of Mendes' ground-breaking *Brasileiro* album, which featured more than 100 top drummers from various Brazilian samba schools. "Believe it or not, that was done in a parking lot," he says. "Obviously, what we were trying to get was some of the magic of the Carnivale. You have this big parade with all these different schools of drummers competing—you can have 3,000 or 4,000 drummers there. I ended up recording about 140, and I miked them as if I were miking a symphonic orchestra: I had sections with some mics far away for ambience, because part of the sound of those groups is that it's like this faraway call that says, 'Wake up! We've got to go!' and then some mics up closer. In all, I had about 40 mics going on, all hanging on trees, because I recorded it in a parking lot. On that, I was using pairs of [Neumann] M50s for the ambience. Five minutes before the down beat, we had a thunderstorm, so I had to run down and tear down the microphones. Half-an-hour later, the sun came out and we put them up again. That turned out to be the only usable take. It was magical."

When asked about recording something as simple as a triangle, so prominent on many samba records, he says, "Believe it or not, the triangle is one of the hardest instruments to record," he says. "Actually, it's what I sometimes use to test a microphone or a preamp, because triangles have a really, really fast transient and are extremely rich in

harmonics, and it's very easy to crap up and make them sound bad. So you need good microphones with good capsules. I'll probably use an AKG 452—it's a bright, but not brittle, microphone. With triangles and hi-hats, you have to go a little lower on the tape and bleed is always going to be an issue.

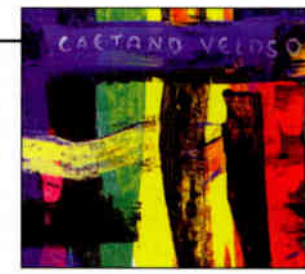
"On the other end, in Brazilian music you sometimes have a surdo [drum] that is very hard to record—you have a lot of level, but you can barely hear it because it has dark energy and so much low end. I'll mike it from the top to get the first reflection, and depending on how it's tuned, I might use a Sennheiser 421 right at the center aiming at where the batter is going to hit. And then at the border, I use a U47 FET, which can take quite a bit of level without crapping out, and I mix them so I have the impact of the low end."

When faced with a percussion section of four or five players, Canazio says, "I'll always mike an ensemble with a stereo pair for the room, as well as each individual. I don't put the room mics too far away, maybe eight or 10 feet from the source at eye level—actually, ear level. I might use a pair of [AKG] C12s or C12As, or [Neumann] M50s or M49s, and I can track that separately to try to get the sound of being in the room listening to them.

"When I record a single percussion player, I will change [the equipment] totally with each part. I might use a 452 with a Neve 1084 the first time, and if I have to double, I will use a totally different microphone and a totally different preamp [for the next pass]. The more apart they are, sonically speaking, the better."

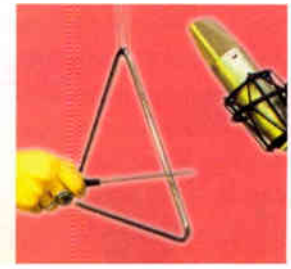
Canazio says that his preamps have been the best investments in his rig. "I have a pair of Neve 1073s, I have a pair of 1084s and I also have a pair of the new 1084s that Brent Averill [Enterprises] put together, and those are outstanding. I have APIs—most of Sergio's [*Brasileiro*] album was through APIs—and I also have Calrecs [from an old Calrec board]. Even though there are a lot of outstanding new preamps out there, when you're dealing with Pro Tools, you need to recover the warmth, and for that, the older preamps are unbeatable."

> I sometimes use triangles to test a microphone or a preamp, because they have a really fast transient and are extremely rich in harmonics, and it's very easy to make them sound bad.



Suggested listening: Sergio Mendes' *Brasileiro* (Elektra/Asylum), Caetano Veloso's *Livro* (Nonesuch)

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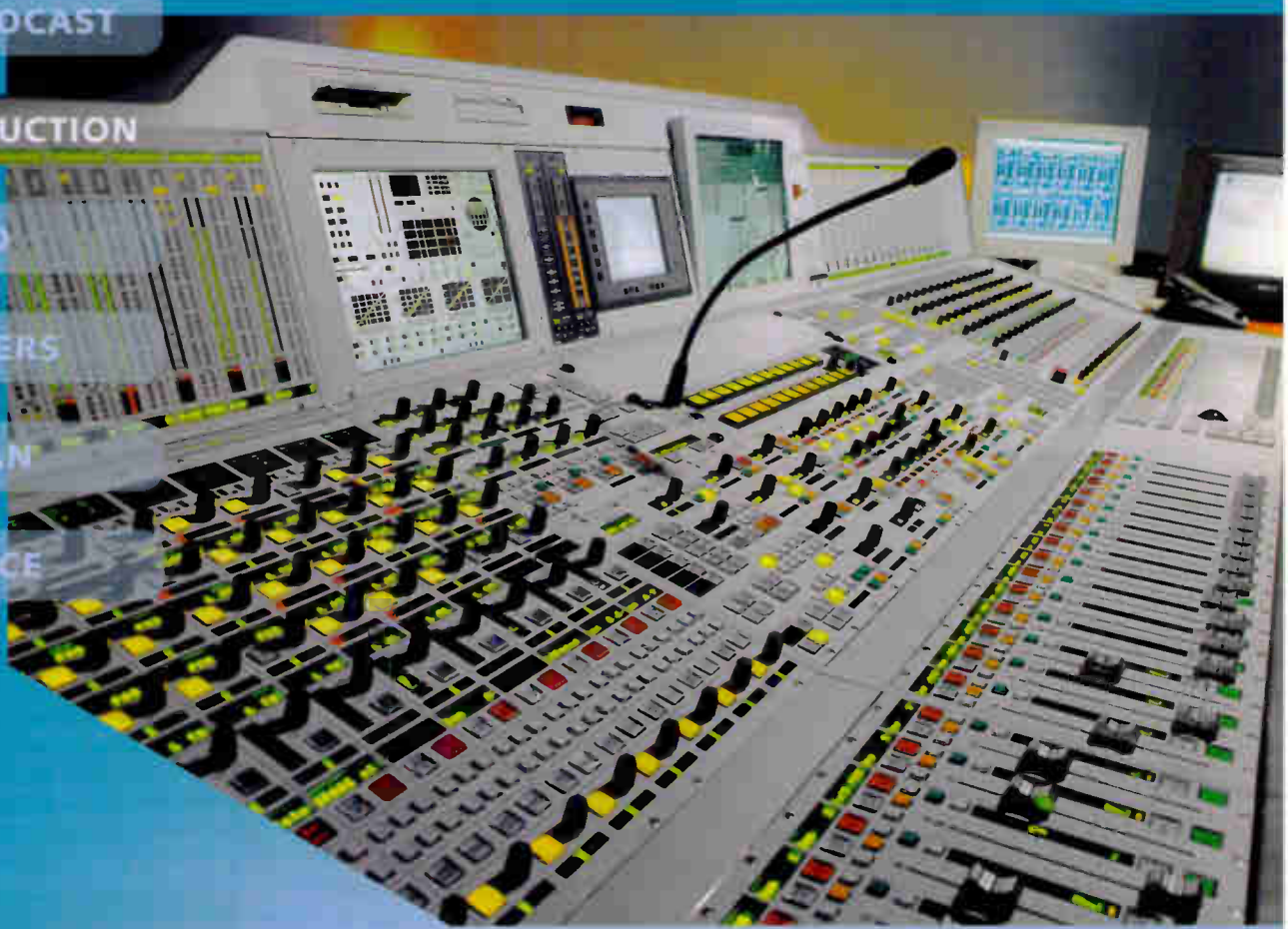

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Tom Flye's World of Percussion

Veteran San Francisco Bay Area engineer Tom Flye has worked with dozens of amazing artists since breaking into music in the late '60s (as drummer for Lothar & The Hand People!), including Sly & The Family Stone, Rick James, Don McLean, Curtis Mayfield, Frank Zappa and many others. But his longest and most creative relationship has been working with Grateful Dead percussionist Mickey Hart on his many solo albums, all of which have featured unusual blends of percussion from around the world. A "typical" Hart session for his occasional band, Planet Drum, might include Indian tabla player Zakir Hussain, Puerto Rican conga phenom Giovanni Hidalgo, Nigerian talking drum specialist Sikuru Adejopu, Brazilian percussionist Airto and anyone else from around the globe who happens by. It's probably fair to say that no other engineer has recorded as many different percussion instruments as Flye.

Asked how his approach to recording percussion has been affected by the wide range of Hart's projects, Flye notes, "I've found that I'm using a lot more dynamic microphones than condenser microphones these days. Sometimes with percussion, if you use a condenser mic, you end up getting too much attack and the attack is too bright, especially if you're doing multiple percussion. It can end up being kind of thin-sounding, like orchestra percussion. But with a lot of percussion—especially any that has a 'throat,' a voice; the talking drum is a classic example, but any drum that has a variable tonal quality to its sound—I find that dynamic mics give me more of what I want to hear."

So which mics does he favor these days? "It's amazing how often a Sennheiser 421 works or [Sennheiser] 409s, anything in that category. For things that have a big bottom, like a *taiko* drum, I'll go with a Beyer M-88. But you can also get away with a condenser mic in those situations because there is so much bottom.

"For tablas, I'll use one or two 421s. There, you get fairly close to the drum—you just have to leave enough room for their hands. You need to be close so that you can get the sound of the drum and of the fingers—there are all sorts of different finger techniques they use that can be very subtle. And the drums themselves can be tricky because one has more high and mid so it appears to be louder, and the other more lows. So you have to get the balance between those and that can be hard with one mic."

PHOTO: DAVID GANS

"*Berimbau* [a one-stringed Brazilian gourd instrument] is hard to record because the tone is what you're after and that comes out of the gourd, which is usually right by the player's belly. So the trick there is to get close enough to get the subtlety of it without actually hitting the player."

"With a *shekere* [a gourd covered with percussive beads], usually what you think of is just the shake sound, but a good player will also hit the bottom of the gourd periodically in his pattern, and to make it so you can hear that can be challenging. So what I'll do there is stick the mic as close to the hole as possible and get him to play the hole of the gourd into the microphone. You still get all the shake you need, but you also get that nice, low-end thump."

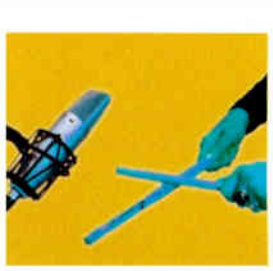
And talking drum? "A 421 close to the head so you pick up the attack, but if I have the tracks, I'll also add a second mic at the back and throw that one out of phase."

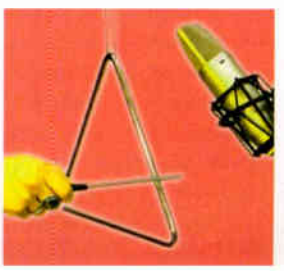
When it comes to augmenting the percussion with other gear, Flye remains a traditionalist: "Give me a Neve console or an API, and I'll be happy. I like what [Neve] 80 Series preamps do to percussion. Especially if I'm [recording] in the digital domain, those will help give the sound a little more depth. Digital can be pretty transparent." Generally speaking, even if he's recording a number of players together at the same time, he'll favor close-miking over getting a big room sound, "because we might want to have more flexibility later to change the arrangement, add or subtract things. It's obviously harder to do that when there's a lot of bleed." So Flye will add processing later to create the "room" he wants. "I still like the old Quantec QRS and any good-sounding plate. The new TC 6000 also has some really good-sounding programs."

Berimbau is hard to record because the tone comes out of the gourd, which is usually right by the player's belly. The trick there is to get close enough to get the subtlety of it without actually hitting the player.

MIX ONLINE EXTRAS

Suggested listening: Mickey Hart's *Planet Drum* and *Supralingua* (both on Rykodisc)

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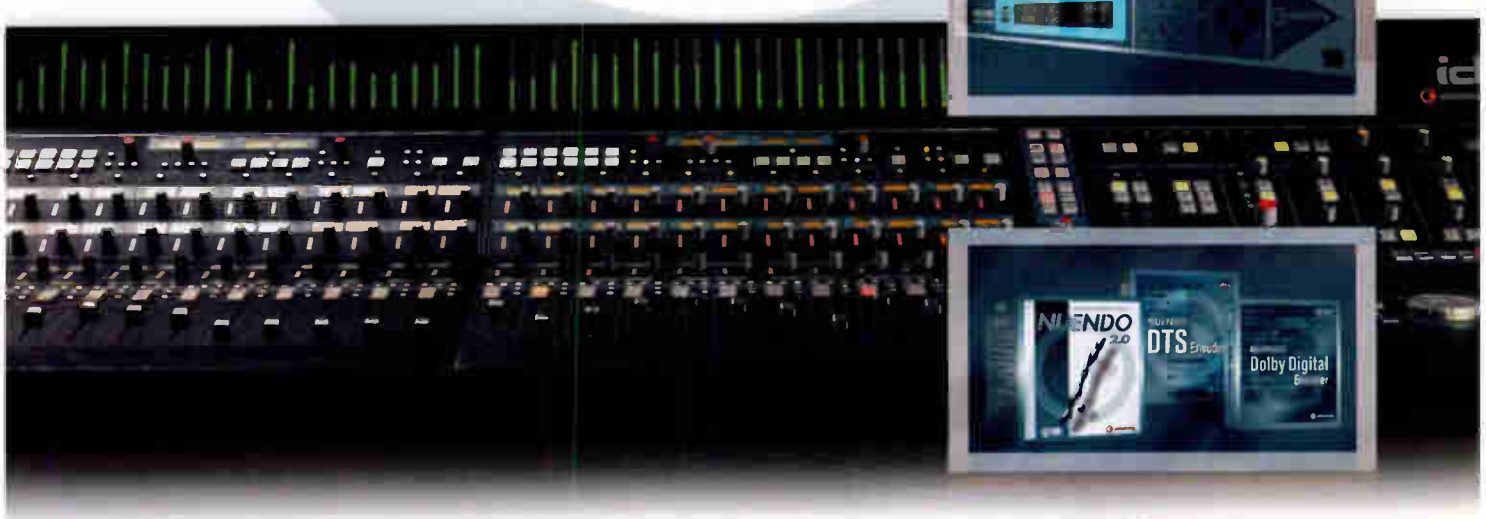

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Remote Microphone Preamps

AMS-Neve 1081R

Convenience, Control and Better Sounds

Among the multitude of cringe-worthy phrases heard by those working in pro audio is the venerable warhorse, "Make it sound good." We've all heard someone mutter those words—or its sister cliché, "Make *us* sound good"—at one point or another. The worst part about hearing these phrases is that they don't really make sense.

More often than not, the engineer's job isn't to "make" something; it's to capture a sound that already exists. And for that, the cleanest signal path between a transducer and the final source is required. Unfortunately, the ultralong pathways of a tiny mic-level signal—often with a foray between multiple inputs and splitters—can drastically alter phase, frequency or transient response before the signal even touches a preamp.

The easy answer to this predicament is to place the preamps as close to the mics as possible. However, by using standard mic preamps, this simple act of preserving signal purity can create a logistical nightmare, especially during a live show, broadcast or recording where the band kicks in 10 dB louder than the gain trims that were so carefully set during soundcheck and you're having to mix 300 feet back at the house position or in a remote truck.

Thankfully, a number of manufacturers offer solutions to eliminate the need for long mic-level runs, and in the process have created easily manageable, high-quality mic preamps. From these remote-controllable preamps, to consoles featuring external stagebox-loaded mic pre's, to inventive snake systems impervious to interference, everything that an engineer could use to protect mic-level signal is readily available—and many of these products are detailed on the next few pages. These devices may not magically make every client sound *good*, but they can help create an environment for superior sonic integrity, and isn't that really what an engineer's job is all about?

AMS Neve's (www.ams-neve.com) 88R Remote Microphone Rack offers the best in old and new mic preamp technology by combining classic Neve Air Monserrat or 1081 mic amps with remote control via PC or an AMS Neve Encore automation computer. AMS Neve reports that Macintosh control software will be available in the near future. The Air Monserrat preamp is a late-'70s–era mic amp suited for ambient miking, while the 1081's early-'70s design responds best with close-miking setups. Any combination of the mic preamp modules can be utilized in the 12-slot, four-rackspace 1081R Intelligent Housing, which connects via a rear panel Varicon connector. Control is achieved by connecting the rack to the chosen computer via 9-pin serial control cable and then to an RS-232-to-RS-485 converter. The output of the system is a 56-pin Elco/EDAC connector, carrying up to 12 circuits, typically terminating in XLR or TT plugs. Operational settings such as gain, phase and a 20dB pad can be easily controlled from

By Strother Bullins

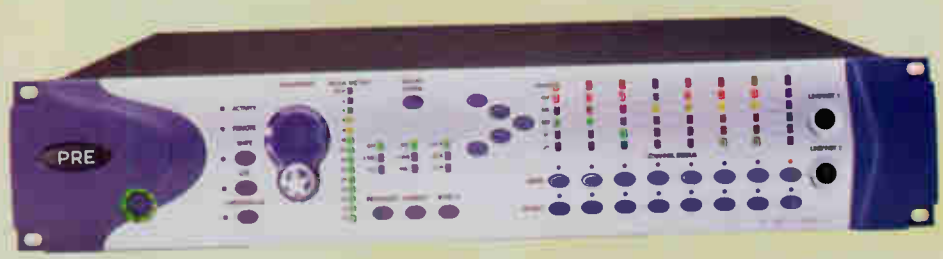
Aphex Model 1788

the rack or the system's interface screen. A full 88R Remote Microphone Rack with software is available for $10,000. Purchased separately, the 1081R rack is priced at $3,200, 1081R Remote Software is $500 and mono Air Monserrat and 1081 Mic Preamps are $1,400 each.

The 8-channel Model 1788 Microphone Preamp ($4,995) and Model 1788RC Remote Controller ($1,499) from Aphex (www.aphex.com) create a capable preamplification system with both analog and optional digital outputs. Besides eradicating noise problems associated with long cable runs, the 1788 eliminates the need for splitter boxes by providing five outputs—two analog and three digital—that are simultaneously usable. The flexible system is controllable via the Model 1788RC, a PC running Aphex's 1788SW controller software or through any device generating MIDI, such as a MIDI controller, console, sequencer or show control system. The two-rackspace Model 1788 offers balanced Jensen transformer-coupled mic preamps and includes a unique microphone output limiter, 26dB pad, adjustable maximum output level, a 700Hz test-tone generator, comprehensive LEDs and a front panel headphone output. The unit's optional digital output module features 24-bit AES/EBU, TDIF and ADAT optical capability. The Model 1788RC's MIDI-protocol remote control offers adjustment of all parameters, setups, snapshots and preset recalls, and up to 16 units—128 channels—can can be controlled with only one control line.

Respected English manufacturer Crookwood (www.crookwood.com) recently re-engineered the preamp stage of the Paintpot ($2,400) and iPre ($5,500 with controller) remote-controlled mic amps and, to the joy of Crookwood fans everywhere, subsequently reduced list prices. Confidently claiming a main design criteria of "sonic neutrality," Crookwood uses fully balanced amplifiers—one complete preamp per phase—and high-current outputs. According to Crookwood, its attention to detail and quality has given the company a reputation of offering very high audio quality and great remote-control capability to boot. Crookwood's mic preamp remote control is available via a user's DAW software or by a wired assignable unit communicating through a single pair—for instance, by a mic tie-line—from the controller to the preamps. MIDI and HTML control options are currently in development and will be available later in 2004. The Paintpot is a portable 2-channel preamp that closely resembles a gallon-sized paint can, hence the moniker. The iPre comes in modular configurations: two channels at a time and up to eight channels are available into a single-rackspace box. A separate control rack houses the iPre's external power supply and control processor, and can power up to 4-channel racks, which gives 32 channels of preamp in five rackspaces. Paintpot and iPre channels each offer a dedicated mic, line, -10dB unbalanced line and DI input, along with optional 24-bit, 192kHz A/D converters for digital output.

DiGiCo's (www.digiconsoles.com) D5 Live 56, a 64-channel worksurface, provides remote mic pre control through its stage-side DiGiRack, each containing 56 mic preamps and A/D converters, eight D/A converters and is connected to the console via optical fiber. All console settings stored on the D5 can be easily edited on a PC—or transferred to another D5—by simply plugging a miniature USB key on the front of the desk. Nearly 500 feet of fiber cable is provided with the stage-side DiGiRack, reducing the length of cable between a mic and the D5 to around 10 feet. For users needing more inputs, a second side-stage DiGiRack can be easily added. Yet another DiGiRack—located at the D5—contains another 56 external I/Os for inserts, effects sends, local monitoring and playback. A customizable setup of DiGiRack input and output cards is available.



Digidesign PRE

The popular PRE ($2,495) from Digidesign (www.digidesign.com) is a remote-controllable, 8-channel mic preamp featuring discrete, matched transistor hybrid preamp circuits. Designed to perfectly complement the 192kHz-capable Pro Tools|HD recording environment, the PRE accepts a variety of input signals—mic, line and DI—on all eight channels. Per channel, the PRE offers 48-volt phantom power, a highpass filter, phase invert, balanced inserts and an -18dB pad. A total of nine pre's can be

Grace Design Model 801R

chained together, offering 72 channels of preamplification. The PRE's remote capabilities are controlled via Pro Tools software or any Digidesign control surface, which is particularly intriguing considering the company's recently announced foray into the sound reinforcement market. With reports of a live console system shipping before the end of this year, the flexible PRE looks more appealing for event use than ever before.

FiberPlex (www.fiberplex.com), a leading manufacturer of optic data communications equipment for the U.S. government, recently introduced the Light Viper VIS-1832 fiber-optic system, featuring a 32x8 audio input stage box and a single-rackspace unit placed at the console position. Connecting these two components is a mil-spec fiber-optic cable weighing less than two pounds per 100 feet of cable run. The Light Viper's stage box accepts inputs of balanced or unbalanced XLR or TRS mic/line-level audio, phantom power is provided to all mic inputs and 24-bit/96kHz A/D converters are standard. Optional optical outputs on the stage box allow for a separate stage monitor feed and a third for sending audio data signal to another destination, such as a remote broadcast or recording truck.

The Focusrite (www.focusrite.com) Liquid Channel was designed to address the needs of engineers who couldn't—or didn't want to—transport large amounts of analog mic preamps and compressors from gig to gig. With increasingly complex patching arrangements in modern mixing setups, acquiring sounds via classic gear in a digitally dominated environment can be somewhat of a logistical nightmare. As a result, Focusrite decided to create a solution that precisely replicates the sonic performance of many of these coveted analog devices in a reliable, ultimately flexible, all-in-one package. Besides encompassing a head-spinning collection of classic sounds created through sonic-modeling techniques called Dynamic Convolution, the $3,495 Liquid Channel also offers a vast analog front end configurable for any input stage. The unit comes with 40 mic preamps and 40 compressor replicas; Focusrite promises more models for the future, citing the Liquid Channel's "infinite expansion capabilities." A digital EQ—based on Focusrite's classic equalizers—is also included. Front panel controls are all digital, allowing settings to be saved in one of 100 memories. Complete system remote control, data management and archiving are provided via the rear panel USB port where users can connect to LiquidControl, Liquid Channel's software application. Offered free of charge, LiquidControl also allows the downloading of additional replicas not present in the factory presets.

Grace Design (www.gracedesign.com) has always been known for its visually striking, high-quality pro audio products, and the Model 801R ($4,995) bolsters that well-deserved reputation. The 8-channel Model 801R uses the same preamplifier circuitry as the company's proven 801 mic preamp, but is remote controllable by a simple software platform controlling the analog circuit. The optional 801R RCU ($995) allows eight Model 801Rs—64 channels—to be controlled from up to 1,000 feet away. Grace's proprietary LNLD (Low-Noise, Low-Distortion) digital gain control cell was developed to give the Model 801R seamless digital control of the analog circuitry while maintaining the performance users have come to expect from the standard Model 801. The 801R features a large backlit LED to provide level, 48V phantom power, mute and all other preamplifier status information, all of which can be stored in user presets for scene memory and re-

call. Channels can be grouped for concurrent level adjustment.

The Modular Mic Preamplification System from Harrison (www.glw.com) is a three-rackspace chassis outfitted with a total of up to eight channels per unit; the modular configuration can be ordered with less preamps if desired. Each preamp features two inputs per channel, XLR I/O, 48V phantom power, -20dB pad, phase reverse, ground lift, a four-segment input meter and lighted switches. The system's electronically balanced preamps have a maximum gain of 70 dB. The Modular Mic Preamplification System is a part of Harrison's Stand-Alone Series, which comprises a variety of rackmount, flexibly configured products including digital routers, converters, DTC Digital Tools and the Super-Mon 5.1 Surround Monitoring System. The Modular Mic Preamplification System's price varies depending on the amount of installed preamps.

Designed to replace multicore snakes with a simple pair of coaxial cables, the InnovaSon (www.innovason.com) Stage Box is an audio rack and transmission system featuring installed mic preamps, XLR connectors, 48V phantom power, phase reverse and converters in a self-contained rack. All Stage Box parameters are remote-controlled from the mixer and audio arrives through the aforementioned coaxial cables. The Stage Box also functions as a digital splitter, feeding two or three InnovaSon Sensory consoles. Only a small run of cable is analog, and all signals quickly come into the digital domain. Standard with the InnovaSon Grand Live and available as an option with other InnovaSon desks, the Stage Box is upgradable with space for adding extra input or output modules.

DALLIS—the Digital And Live Level Interface System—from console manufacturer Lawo (www.lawo.de) is a versatile I/O prod-

Beyond Specs

Controlling the Controller

Searching for the perfect remote-control preamp system goes beyond poring over Websites and comparing spec sheets to find the lowest THD, the best EIN rating and the widest, flattest frequency response. A listening test wouldn't hurt either, so you can evaluate the tone of the preamp and listen for artifacts such as zipper noise or glitches that can creep in when parameters (especially gain) are tweaked. The next step is to compare features, I/O configurations and so forth, but one factor that can't be over-estimated is the remote interface. How the system's GUI works with you, the user, is critical and, unfortunately, this is one aspect that's difficult to quantify.

Matching the platform—proprietary hardware controller or computer software—to your working style and preference is vital. For example, if you're mostly Mac-based, do you really want to invest in a PC just to set gain trims? Is the interface elegant or clunky, requiring you to navigate through dozens of screens or windows just to flip the phase on an under-snare mic? Speed is everything, especially in live production, where at the last minute, the bass player decides to switch to an active bass with ultrahot pickups. In cases like these, how long it takes to get in and make a change can make a huge difference.

So while shopping for a remote system solution, give it a listen and look at *all* of the facts before buying.

—George Petersen

Remote Microphone Preamps

uct designed for use with Lawo matrices and mixing desks. Featuring fiber-optic connections, DALLIS' modular concept is based on mounting frames, which can be equipped with a wide choice of different I/O designed as plug-in cards. Each DALLIS frame is controlled by a Master Card, which connects via MADI as a contribution port and performs the transfer of control data. Building on DALLIS technology is Lawo's Nova17, a digital audio matrix that routes up to 128 mono inputs and outputs along with a MADI interface supplying an extra 56 channels. When outfitted with Lawo's analog mic/line interfacing boards, the system serves as a well-performing Ethernet or serial interface-controlled preamplification system.

Peavey (http://mediamatrix.peavey.com) boasts that its MediaMatrix division offers systems designed to replace outdated "conventional wisdom" systems. Racks of outboard processors, equalizers, crossovers, routers and mixers are replaced by a PC-based cardframe, loaded with Peavey's MM-DSP Series of audio processing cards and software, and are controllable from any location. In its smallest form, MediaMatrix exists as a rackmount audio processor; at a much larger size, it can be a complex router, processor and distributor for many audio transports, including audio via Ethernet networks. The MediaMatrix X-Frame 88 and MM-8802 audio breakout box is of special interest to those looking to use remote-control preamplification. The X-Frame 88 is a single-rackspace, 8-input/8-output digital audio processing system that is expandable to 24x24 I/O with the addition of two MM-8802s. Features include digital control of all I/O levels, remote control via RS-485, 24-bit quantization and 32, 44.1 and 48kHz software-selectable sample rates.

Peavey MediaMatrix X-Frame (top) and MM-8802 audio breakout box

When Solid State Logic (www.solid-state-logic.com) introduced the XLogic series of outboard signal processing units, SSL-loving engineers throughout the pro audio industry seemed to simultaneously mutter, "It's about time." Appealing to SSL fans that seek remote preamp control is the XLogic Four-Channel Mic Amp ($4,345) and XLogic SL944 Remote Control ($1,495). Much like the pre-existing SuperPre—SSL's 24-channel remote mic preamp controlled by an XL 9000 console—the one-rackspace XLogic 4-channel mic amp includes nearly all SuperPre features but repackages them for those who don't need all 24 of the SuperPre's channels. The SL944 Remote Control can control two XLogic Four-Channel Mic Amps via eight individual control sets with motorized gain and front panel phase reverse, hi-Z and a -20dB pad. The XLogic Four Channel Mic Amp offers front panel XLR inputs and rear XLR outputs, LED-assisted adjustment for phase reverse, hi-Z, -20dB pad and 48V phantom power. Gain is adjustable on the unit's front panel or remotely, and each channel offers a numerical display for channel number information. The included headphone connection can be used for any selected mic input, even for other preamps connected in a multi-unit setup. Finally, a D-connector frees the XLR outputs for other user needs.

Solid State Logic XLogic Four-Channel Mic Amp

Yamaha AD8HR

The StageTec (www.stagetec.com) Nexus is a 100-percent digital routing system composed of multiple base devices that are part of a modular structure and are interconnected by fiber-optic cables. Operation of the Nexus is performed using control software that runs on a PC, and it is most often used as an I/O signal matrix for a Cantus mixing console system. Utilized in StageTec's Nexus are TrueMatch converter systems, which are designed for optimum A/D conversion by getting excellent total harmonic distortion and noise values for both high- and low-level signal values. This is achieved by using multiple preamps for various amplification ranges, each featuring its own A/D converter. When a signal is applied, a processor selects the most appropriate of the several converters on the basis of signal level.

Studer's (www.studer.ch) D19m component system was created to give engineers a flexible, digital modular recording system based on Studer's highest-quality conversion technology. Individual D19m units were designed to fit within a traditional 19-inch rack, occupying one or two units of vertical space each; a 1U card is four inches wide. Input cards feed a TDM Bus, while the TDM Bus feeds the output cards. Each card has a built-in power supply with optional redundant power supply and can be combined with any other D19m card to create a custom system. Along with many D19m I/O and converter cards, the D19m MP4RC Quad Remote-Controlled Mic/Line Input and serial interface-controlled D19m RCC Remote Controller cards give system users the freedom to operate the Studer mic preamps from a D19m GUI via and optical link. The MP4RC features four transformer-balanced mic/line inputs with gain control in 1dB steps. Each channel also features 48V phantom power, highpass filter, external mute, an additional split output, balanced outs and clip protection for all four channels.

The Summit (www.summitaudio.com) MPE-200, the first product introduced for the Element 78 line of solid-state processors, comprises two mic preamp channels with 4-band parametric EQ designed by Mr. Rupert Neve. Designed to be a user-friendly unit with a fully digital front end, the two-rackspace MPE-200 offers 25 onboard presets

and full MIDI support. Other features include a dual-range highpass/lowpass filter, coarse and fine gain control for each section, floating and balanced output transformers and an analog-esque control panel with easy-to-read displays. The MPE-200 and its slave version—the MPE-200S—are remote-controllable via Pro Tools thanks to the new Extension 78 TDM plug-in. While both are fully remote-control-capable, the MPE-200S is specially designated for remote use. The slave unit has no front panel controls, which just so happens to create another added benefit for potential buyers: a lower ($4,400) list price than the $5,000 MPE-200.

Calling remote-control preamps "a need, no longer a luxury," manufacturer Sytek (www.sytek-audio-systems.com) offers the MPX-4D ($2,860), a digitally controlled, 4-channel mic preamp. The unit offers control from either its front panel or from a PC interface. The MPX-4D uses Class-A, hybrid input stage preamplifiers based on hand-selected transistors. Each channel offers a high-quality gain control, three pushbutton controls for mute, phase and 48V phantom power functions, and a peak indicator set at -8 dB before clipping the signal output. Also included is a high-resolution optical encoder for changing gain, which is displayed on a quarter-inch dot-matrix LED screen. Sytek also offers a special operational amplifier configuration of the MPX-4D featuring Burr-Brown op amps in any or all channels. According to Sytek, the Burr-Brown's high-quality amps result in a warmer, "tube-like" response in contrast to the "clean, ultrafast" response of its standard amp. A commonly built MPX-4D configuration includes Burr-Brown op amps in channels 3 and 4 of the unit.

Whirlwind's (www.whirlwindusa.com) E Snake system comprises E Snake Frames (ESF) and the E Snake Control system-management software. Two or more ESF frames are connected to each other through a 100MB Ethernet switch with either Cat-5 or fiber optics that are designed to replace traditional analog multipair audio snakes. Each ESF includes a hardware frame and motherboard that can be configured with up to four input and four output cards available as mic/line or line-only. The cards offer eight channels of audio each, so each frame can simultaneously transmit and receive up to 32 channels of audio. Multiple frames can be used to increase total capacity. The comparatively lightweight E Snake—300 feet of 58-channel multipair cable with connectors weighing 175 pounds—is easily controlled via E Snake Control, which provides manipulation of input features such as mic/line switching, 48V phantom power, pad, limiter, gain control, channel labeling and metering.

The AD8HR ($2,200), an 8-channel mic preamp and A/D converter from Yamaha (www.yamaha.com/proaudio), features head amplifier circuitry gleaned from the company's PM5000 analog mixing console. The unit supports sampling rates up to 96 kHz and easily integrates into digital console setups. Offering a user-friendly front panel, the single-rackspace AD8HR offers a Head Amp Remote-Control function where channel phantom power and highpass filter cut-off frequencies may be switched on and off via remote control. This "stage box" capability allows the mic preamp to be remotely adjusted in 1dB steps from digital consoles. Up to 255 AD8HR units can be daisy-chained together using a standard 9-pin RS422 and a digital connection via AES/EBU. The rear panel AD8HR connections include eight XLR inputs, BNC-type I/O connectors for word clock and two D-Sub 25-pin AES/EBU digital output terminals.

MIX ONLINE EXTRAS

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

Homeward Bound

The Move to the Small Studio

PART TWO: REFLECTIONS, SURFACE TREATMENT AND EQ

[During the past 25 years, acoustical consultant Bob Hodas has worked in studios all over the world, from Sony Music Entertainment in Tokyo and Abbey Road in London, to Avatar and Electric Lady in New York City, Skywalker Sound in Northern California, and O'Henry, NRG Recording and The Mix Room in Los Angeles. These days, as many top producers and engineers are building their own facilities, Hodas finds himself increasingly dealing with the challenges posed by building professional studios at home. In our two-part series, he shares his tips for building—and tuning—the project studio. Last month, he discussed the unique isolation challenges in existing rooms and detailed the finer points of speaker placement. This month, he moves on to room reflections and EQ.—*Eds.*]

As I mentioned last month, you can't just put up a pair of speakers in a room and expect everything to sound good. There are many variables affecting room response (and hence, the quality of your mix) if you're building a studio within the limitations of an existing space, so I'm suggesting options that are reasonable for the project studio designer. Last month, I went over the most costly issue: achieving ideal isolation within an exisiting structure. I also explained the significance of room dimensions, especially orientation and symmetry issues, and ways to determine ideal speaker placement.

This month, I'll explain room reflections, talking about easy ways to control those reflections with surface treatment, and tackle the difficult task of bass management.

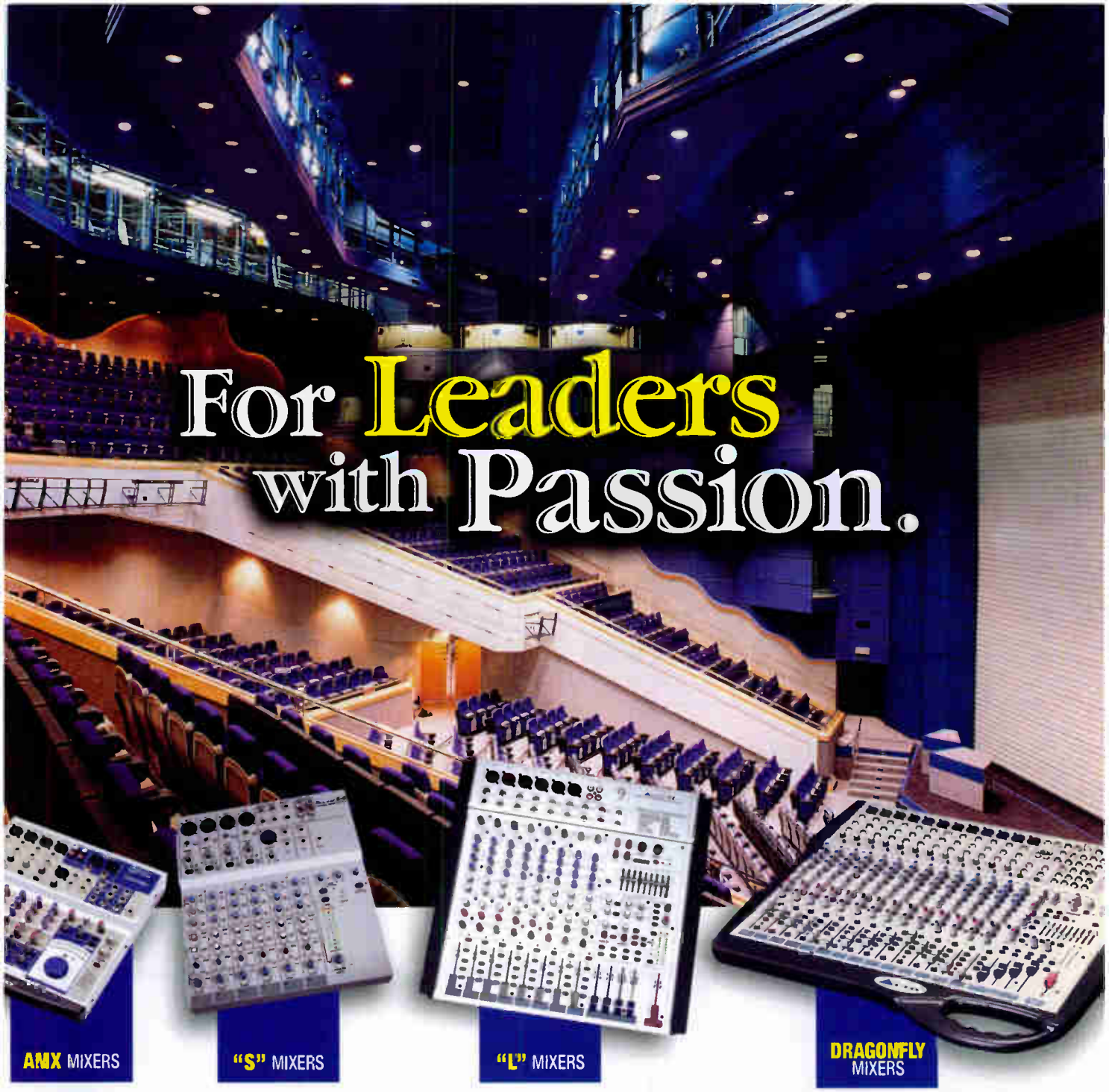
DEEP REFLECTIONS

First-order reflections are the initial signal reflections that bounce off the walls, floor and ceiling and mix in with the direct speaker signal. In most home spaces, the reflections are short enough that your brain cannot differentiate them from the direct signal. These destructive reflections cause holes in the frequency response so that you miss parts of the music. They will also affect the phase response, creating problems in the soundstage and imaging, both side-to-side and front-to-back. This theory also applies to reflections off of the console if your speakers are sitting on the meter bridge or too close to the back of the desk. Your high end will be much smoother and more coherent if you put the speakers on stands and move them back from the console to a distance where the tweeter won't interact.

Perhaps you're working at a desk with a controller or keyboard rather than an actual console. The flat desk surface can be even worse for reflections than the raked surface of a console, so you should be especially aware of speaker placement. Also consider the positions of your computer monitors and how they interact with the speakers. If the monitors are right in between the speakers, for example, then you could get low-frequency loading into the surface of the monitor. You will also experience a loss of front-to-back depth imaging. Place the monitors below the speaker level and, if possible, build them into the desk and place them at an angle so that they are easy to view but don't interact with the speakers.

Because sound and light waves behave very similarly above 400 Hz, you can use a mirror and simple geometry to find unwanted reflections. Invest about $30 in a 2x2-foot plastic mirror without the frame. Have someone sit in the listening position while you hold the mirror *absolutely flat* against the sidewalls and ceiling. Slide the mirror all around to see if the listener can see the speaker components (not the side or top of the speakers) in the mirror. When the speaker is seen in the mirror, that is a first-order reflection point, so you will want to treat in that area. You will probably be able to outline one large area on the sidewalls that shows the reflection of both speakers. Be judicious with the absorptive treatment—there is nothing worse (to my ears) than an overly damped

BY BOB HODAS



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room. Just treat the areas that need it and leave the rest alone.

I like to absorb rather than diffuse the ceiling and side reflections, because absorbing them increases the coherence of the system. Coherence is very important for imaging. (See Figs. 1a and 1b.) Diffusing the rear wall reflections adds space to the room. The diffusion gets rid of the discrete reflections, but leaves most of the energy intact; the energy spreads out over time. Don't try to equalize first-order reflections because they are completely dependent on your position and will change at different seating positions throughout the room. EQ will not fix a high-frequency reflection problem.

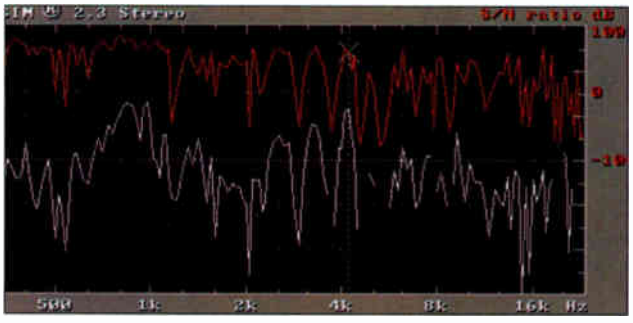


Figure 1a: a room with bad coherence (untreated reflections). The red trace shows coherence, and the white trace shows frequency response.

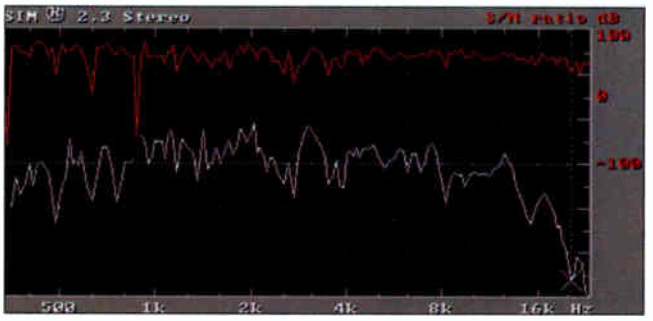


Figure 1b: A room with good coherence (treated reflections). The red trace shows coherence, and the white trace shows frequency response.

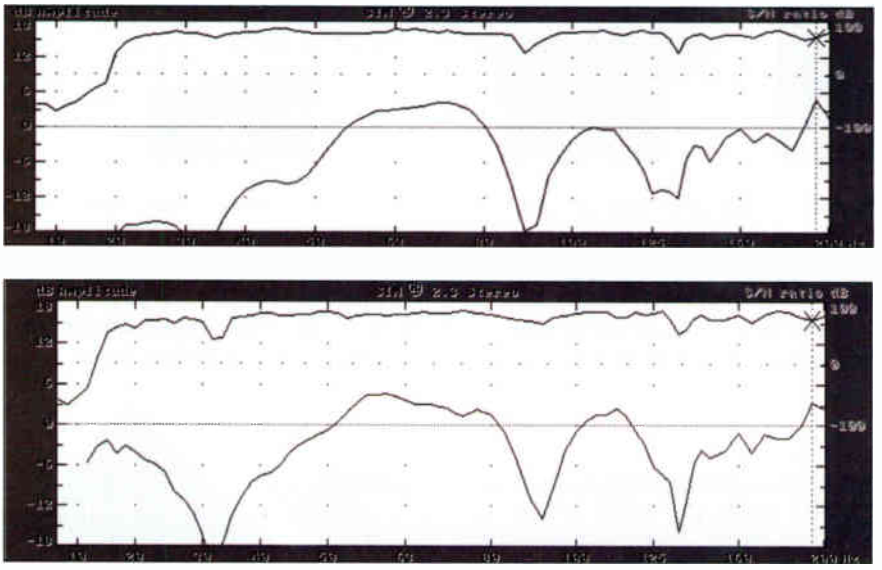
BIG BOTTOM

Bass control is a tough subject. I see the same mistakes repeated over and over in small rooms, mostly because people make assumptions but don't take measurements. I really can't tell you how to trap a room without measuring it first. To do so would be irresponsible of me. So I'll start with a few concepts.

Just because you have corners doesn't mean that they are causing a problem. If you're working with a particular room dimension (an 8-foot ceiling height, for example), that doesn't mean you have a problem based on the relative wavelength. I have been in rooms where corners were trapped and the traps were causing more problems than they solved. Or else, clients bought traps that were sold as broadband but turned out to work on fairly specific frequencies with a high Q. Take it from me: In a small room, you'll need to find the problem with measurement tools and treat that problem surgically. It's a process that may require some degree of experimentation, so measure the room after you have treated it to ensure that you have gone about it all correctly.

I'm a real fan of membrane absorbers for smaller rooms because there is generally not enough room in a home studio to do large-scale trapping. These rooms also seem to have specific problems that require more targeted trapping. I would not install membrane absorbers without experimenting to see exactly where in the room they need to be installed and how many are needed. If you put a membrane absorber in the wrong place, it won't do anything because it will not be stimulated by sound waves—and that's a big waste of money.

Here's an example: A client's room had a 29dB hole at 71 Hz. So how could absorption possibly fix this problem? In this case, the hole was caused by excessive out-of-phase information arriving at the mix position. So if we can remove that information, the hole will fill in. The big question for this client was where to place the traps for the most effective results. Because the cancellation frequency corresponded to the room width, we tried placing the traps on the sidewalls centered at the mix position. This didn't give us results at all. Then we tried placing the traps in the front corners of the room behind the speakers. This was quite effective when we placed them as high in the corners as possible, and less effective when down by the floor. We also tried trapping the front wall/ceiling juncture with little result, but had good response in the rear corners when the traps were placed up high. Any wall/ceiling juncture we tried didn't work; in fact, noncorner placement generally yielded poor results. Trap placement needed to be very specific to be effective. We ended up with five RPG Corner Modex traps in each front corner and three in the rear, reducing the notch by about 20 dB. While we did not solve the entire problem acoustically (as EQ needed to be applied), we made significant improvement given the allowed budget. With more money and time, we could have filled in the hole



Figures 2a and 2b show improper subwoofer alignment. Top: speaker without sub. Bottom: speaker with sub added. Compare with example of proper placement on page 50 (Figs. 3a and 3b).

MXL

Studio photo courtesy of Solid State Logic Inc.

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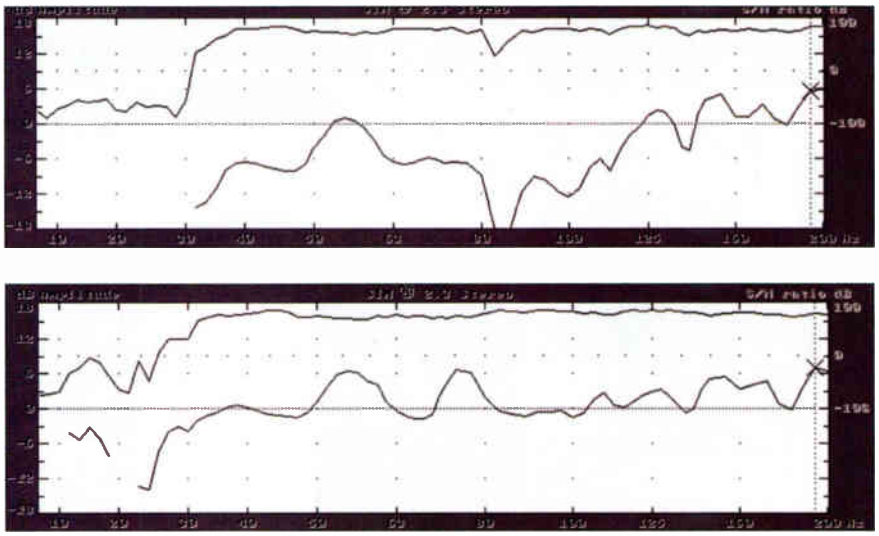
completely by just using bass traps.

I cannot say that this trap will always be the perfect solution. I measured a room that had a large hole at 70 Hz and an 8-foot ceiling, which indicated an ideal situation. We found little or no change in this room utilizing the traps. The reason for this was that one wall was sucking out the problem frequency, so the wall needed to be reinforced to fix the problem. Test each individual situation and base your placement decisions on science—not rules of thumb. That's a good philosophy no matter what type of treatment you plan on using. As this is a complex acoustical problem, I can't give you a single solution. Remember that some bass issues can be solved just by placing the speakers in the proper spot.



Figures 3a and 3b show proper subwoofer alignment. Top: speaker without sub. Bottom: speaker with sub added. Compare with improper placement, page 48 (Figs. 2a and 2b).

SUBWOOFERS

A number of my clients have asked me if they should add subwoofers to their main system. There is often the need to hear deeper bass when working on small close- or mid-field monitors with limited low-end response. Also, we cannot always place the monitors in the best position or properly trap to get a smooth low-end response. In these cases, adding a sub allows you to place the main monitors without a great deal of concern for their low end. In small rooms, the proper mains placement may be bad for imaging or simply be unachievable due to room dimensions or lack of symmetry. A subwoofer, on the other hand, can be placed just where it needs to go.

I am a firm believer in stereo subwoofers. There's a common misconception that bass is omnidirectional and subwoofer room position is not important. Place your subwoofer off to one side and listen for its location. I'm sure you will be able to find it. If you use a mono subwoofer, then it's very important to place the subwoofer symmetrically between your speakers. Placing the subwoofer off to one side will cause an asymmetrical response in the left and right speakers at the crossover point based on the uneven distance of the left/right speakers to subwoofer. This will require equalization to balance the system.

If the room is quite small, however, you may get away with an asymmetrical sub placement due to the long wavelength at the crossover point.

If you are buying a sub to make up for poor low-end response in your mains, then there are several features to consider. Phase adjustment will allow you to dial in the phase crossing at the crossover point and help make up for placement problems. The downside is that this is really difficult to do by ear, so you will want to measure phase with an analyzer. The sub should have a lowpass frequency adjustment if you really want to dial it in to the maximum—although many subs are fixed at about 80 Hz and can still get the job done. Make sure the unit has both high- and lowpass frequency adjustments; in other words, true crossovers. It would be great if you could passively integrate the mains without putting them through a crossover, but most rooms have mains with a very erratic low-end response and you don't want to add that in with the sub.

Placing any subwoofer system requires a good analyzer and someone who knows how to use it. Subwoofer manufacturers often suggest that you use test tones to set up subs, a valid option but with crude results; personally, I have not seen a studio that set up subs properly without analysis. To get the best frequency response, you'll want to achieve a linear phase response at the crossover point. An analyzer with phase display is a must for this process. The process can be time-consuming and requires experimenting with multiple sub placements and phase switch adjustments. The best results

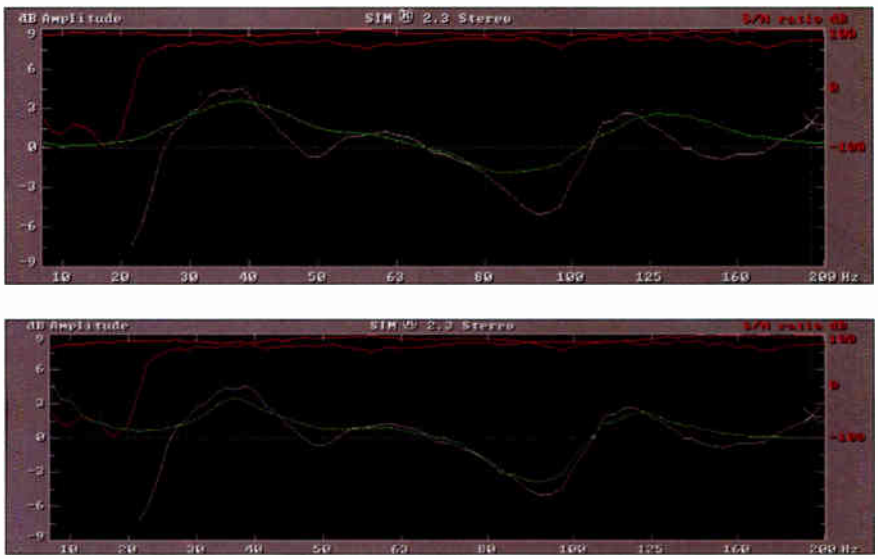


Figure 4a and 4b show a room's low-end response with EQ curve applied. Top: ½-octave EQ applied. Bottom: parametric EQ applied. Note the more precise curve match.

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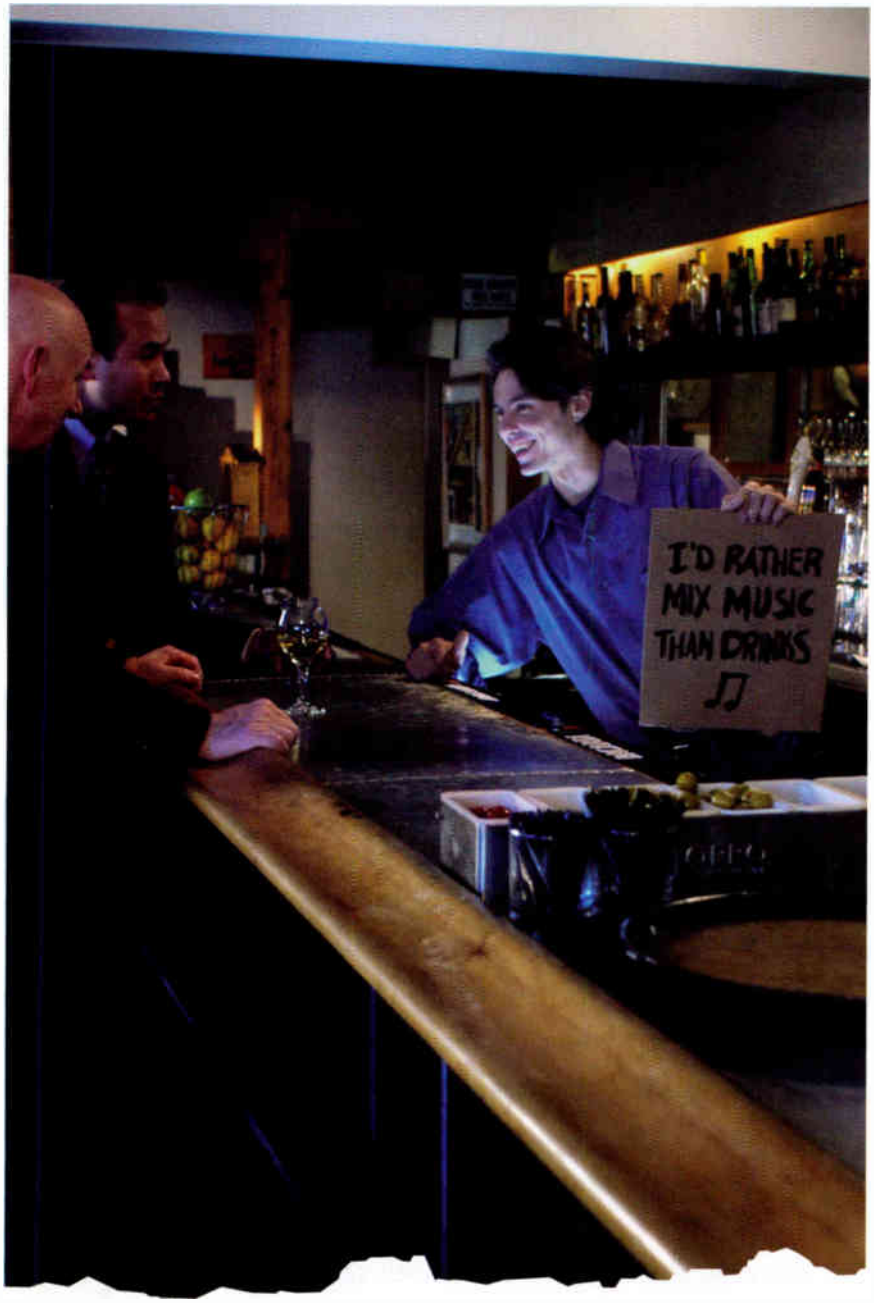

can sometimes be achieved by raising the sub off the ground, turning it upside-down or even backward. Moving a subwoofer a mere six inches to a foot can make a significant difference. Unfortunately, if there is a rule of thumb, I haven't found it yet. (To see the results of improper and proper sub placement, see Figs. 2a, 2b, 3a and 3b.)

EQUALIZATION

The whole point of the above instruction is to get your studio into shape so that the music you make translates properly to the outside world. If you take your mixes to mastering and there is more than a dB of EQ being applied here or there, then you need to tune your studio. With the right room dimensions and proper speaker placement, there is no need for EQ. Ideally, you should do everything possible to fix your room acoustically because that will create a nice large sweet spot. But EQ can be a very cost-effective means of solving low-frequency room problems.

The proper tool to tune a room is a parametric equalizer because it allows you to dial in the exact center frequency to address your problem. Then it allows you to shape the curve to give a proper fit solution. A ⅓-octave equalizer is simply hit or miss on the center frequencies and employing brute force with its fixed Q, so that you'll wind up EQ'ing more than necessary or often won't fix the problem at all. Parametric solutions just make sense.

Figures 4a and 4b demonstrate this point: Figure 4a shows the low end of a room curve with a ⅓-octave solution applied to it. Notice that you can't quite get to the problem and wind up affecting more frequencies than necessary, especially around 150 Hz. Figure 4b shows the same room with a parametric solution. (Note: The EQ curve is an inverse of the EQ that is being applied to show how it fits into the room curve.) The parametric solution allows a better match. I also encourage you to tune your room with an analyzer that displays frequency in at least ½-octave resolution. Phase display is also very important.

I hope the above information has been helpful in transitioning your acoustics in a smaller room. Remember, simple solutions apply to these complex acoustics issues, so experiment! ■

For more of the author's practical tips for optimizing your personal studio listening environment, visit www.bobbodas.com.

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RØDE® MICROPHONES

Down in the Delta

The Heart and Soul of Memphis Recording

BY RICK CLARK

Memphis is a town of contradictions, a seemingly illogical place where nothing seems to happen and a lot of things are happening at once. More than a million people live in the area, yet it feels like no one's in a hurry and they'll arrive in their own time.

The music that has come out of the River City has in many ways changed the world, thanks to iconoclasts, renegades and dreamers such as Sun Records founder Sam Phillips, Estelle Axton and Jim Stewart, who started Stax Records (Isaac Hayes, Sam and Dave, Otis Redding), Willie Mitchell and his Hi Records label (Al Green), Quinton Claunch of Goldwax (O.V. Wright, The Ovations) and John Fry of Ardent (Big Star, Cargoe). So much important music has come out of Memphis that it is easy to overlook fresh, new homegrown talent such as the North Mississippi Allstars, hard-rockers Saliva and hip hop act Three 6 Mafia.

Even though there are studios throughout the metro area, the heart of the Memphis recording scene is in Midtown, a patchwork of neighborhoods with blocks of stately old homes and huge trees, as well as funky commercial areas and apartments.

Big Star co-producer Jeff Powell (l), guitarist/vocalist Jon Auer, Jody Stephens (drummer/vocalist) and Ken Stringfellow (bassist/guitarist/vocalist) play offstage.

THE HEART

At 2000 Madison Ave. is one of the city's finest and largest facilities, Ardent Recording, which boasts three studios and a mastering suite. Studios A and C feature Neve VR60 48x48 and V Series 40x48 consoles, respectively. Studio B is outfitted with an SSL 6056E with G computer. The mastering room is built around a 24-bit/192kHz SADiE workstation.

Founded in 1966 by owner John Fry, Ardent has been the recording destination for R.E.M., B.B. King, Led Zeppelin, the Allman Brothers, Stevie Ray Vaughan, Bob Dylan, Al Green and James Taylor, as well as more recent Platinum acts such as Evanescence, Sister Hazel, Riddlin' Kids and 3 Doors Down. In addition, Fry has nurtured the successful producer/engineer careers of Jim Dickinson, Joe Hardy, John Hampton, Paul Ebersold, Skidd Mills, Jeff Powell, Tom Laune and Pete Matthews.

In the 1970s, the Ardent Records label was home to a handful of distinctively melodic pop rock bands. One of those bands, Big Star, put out two albums (*#1 Record* and *Radio City*) on the label and recorded a third at the studio (*Third/Sister Lovers*). Thirty years later, Big Star returned to Ardent to record their still-untitled fourth album, this time for Rykodisc, produced with Jeff Powell, who also runs the Madjack label, home to local singer/songwriters Rob Jungklas and Cory Brannan and Americana bands Lucero and The Pawtuckets.

"We recorded and mixed on the Neve VR in Studio A," says Powell of the Big Star sessions. "I used ProAc Studio 100 monitors, and we used all the plates and echo chambers at Ardent and stayed away from all digital reverbs. The record was recorded 24-track analog and mixed to half-inch. We were using some old compressors, including this ADR F-700 that we ran drums through that sounded like a million bucks. I think the biggest thing the studio brought to the picture was some of the same gear that was used to make the original Big Star records. There is still that thread that ties the new album to the old stuff."

During the 1990s, Ardent retooled its label toward Christian rock with the A&R help of Dana Key, whose local group, DeGarmo & Key, was one of the first acts to bring meaningful visibility to the fledgling format in the '70s. Producers Paul Ebersold and Skidd Mills also helped sign acts such as Big Tent Revival, Skillet and Todd Agnew, which brought the label significant success. Ardent recently brokered a secular-market licensing arrangement with Lava/Atlantic for Skillet, whose latest Ebersold–produced album, *Collide*, has already done well in the Christian rock market.

In front of Young Avenue Sound/Memphis Records (l-r): Cameron Mann, Willie Pevear, Chuck Goin and Don Mann

THE SOUL

Gospel music has always been a large part of Memphis' scene, and ensembles like the Grammy™-winning O'Landa Draper's Associates have helped set the standard for the best in the genre.

On April 1, 2004, one Memphis locale known for keeping the gospel tradition alive, Hope Presbyterian Church, went online with a serious music studio setup. "The room is what we would like to think of as the future in recording," says Hope's chief engineer, Keith Compton, who has enjoyed a lengthy career working with Christian artists such as Shirley Caesar, Steve Green, Jars of Clay, Julie Miller and Michael W. Smith. "There is no console in the control room. The studio is built around a Pro Tools|HD Accel system with Digidesign 192s. We have 24 channels of API pre's, 20 channels of API EQs, eight channels of Neve 1081s, eight channels of JB mic pre's, four channels of Martech mic pre's, SSL, Tube-Tech,

Massenburg EQs and compressors, and other odds and ends. The main monitors are the Munro MP4-plus system with Chord amps. Our mic selection includes all of the basic array of expected mics with a few extra old tube Neumanns."

Hope's music director, Bruce Carroll, has had a long career as an artist with multiple Grammy and Dove Awards. He is excited about the role of the church's studio in the community. "I want to facilitate great art coming out of the church again, and I want to train, equip and mentor artists, musicians and worship leaders to do what they do skillfully, intentionally and with excellence without having to sell their souls and/or copyrights and masters to do great things that can impact the world in a positive way," says Carroll. "My goal is to give away as much as possible in guidance and studio time, and to rebuild a community in Memphis among artists, writers and musicians."

Bruce Carroll and Keith Compton of Hope Presbyterian

THE ROCK

Jim Dickinson, a producer, musician, artist and all-around champion of Memphis music and culture, has served as mentor to many in the community. He's recorded with the Rolling Stones, Bob Dylan and Aretha Frankin, and produced important albums for The Replacements, Toots Hibbert, Big Star and Ry Cooder, as well as his sons' band, the North Mississippi Allstars. The Allstars just landed a track in the upcoming *SpongeBob Squarepants* movie, which was recorded at Ardent with John Hampton engineering and Dickinson producing. It was also co-written by Dickinson and his son, lead singer/guitarist Luther Dickinson.

Although he owns his own facility, Zebra Ranch studio, Dickinson is currently producing the next Allstars album, *Electric Blue Watermelon* (which features rockabilly guitarist Roland James), at Phillips Recording studio. Another project underway at Phillips is Nate "The Rat" Whitlock, whose album, *Rat On*, is being co-produced with Jim Blake, founder of the Barbarian Record label.

THE BUSINESS

Over in the Cooper Young area of Midtown, near the old musician's union, is Young Avenue Sound, the brainchild of Don Mann and Willie Prevear which has generated quite a buzz by marketing itself as a "performer's recording co-op." Young Avenue Sound is a turnkey organization that offers artists recording, manufacturing and distri-

PHOTO: MARY LINDSAY DICKINSON

Mark Neil (left), studio designer, and Jim Dickinson, producer/musician, at Dickinson's recording studio, Zebra Ranch.

bution services through the co-op's label, Memphis Records. Artists purchase the CDs at $5 a unit until an initial deposit is recouped, after which CDs are bought at a significantly reduced amount.

"Music is everywhere in Memphis, but there's not a lot of music *business*," says Prevear. "The musicians here play for people 'cause they love it: It's in their blood and bones. It's who they are, not who they want to be when they get rich and famous. This is a player's town and I love it here. There is a real sense of community, an arrogantly shabby, 'up the establishment' vibe that gets an old hippie like me off."

The facility's main room features a Neve VR36 console with Flying Faders automation and Total Recall, Genelec 1036C tri-amp monitors, a Genelec 7071A active sub and Yamaha NS-10Ms. Analog gear includes a Studer A827 2-inch 24-track and an Otari MTR-12G 2-track.

Studio B features a large complement of Mackie and Tascam gear, a Pro Tools MIX-Plus system, and Tannoy 1200 and Yamaha monitors. Studio C features Pro Tools | HD 3. There is also a mobile studio with a 32-channel Soundcraft Ghost, an Avilex CMX 24/4 sidecar and a Tascam MX-2424 hard disk system with a Furman AR-1230 power supply. Mics include multiple matched sets from Earthworks, Neumann, Sennheiser, RØDE, Royer and others.

Clients have included the Blues Foundation, NARAS and B.B. King's Blues Club, as well as releases by Richard Johnston, Memphis Jazz Orchestra, Kirk Whalum, The Subteens, Susan Marshall and Jesse Winchester. Currently, Memphis Records' Free Sol (a quirky synthesis of hard rock, retro soul and hip hop) is getting quite a bit of attention with their debut release, *11:11*.

PHOTO BY CRAIG CRAWFORD

Artist Jimmy Davis (l) and Jack Holder (producer/singer/engineer/studio manager) at Sounds Unreel

THE REAL MADE UNREEL

Less than a mile away is Sounds Unreel, co-founded by Jon Hornyak and Don Smith in 1981 and whose SUR label had regional success with The Crime and Good Question. The studio is still owned by Smith, though Dawn Hopkins and Jack Holder handle the day-to-day and engineering duties. Holder is one of Memphis' finest multi-instrumentalists; Hopkins is a solid engineer with impeccable musical instincts and a loyal clientele—predominantly blues and R&B artists such as Irma Thomas, William Lee Ellis, Rod Piazza and Jimmy Thackery.

Sounds Unreel features a Neve 8128 console, Otari MTR-90II 2-inch 24-track, Pro Tools TDM 5.1.3, Otari MTR-10 ½-inch 2-track, Ampex ATR-102 ½-inch 2-track and a nice complement of outboard gear, including a UREI 1176 Blackface and LA-4s, API 3124+, and JFL Audio mic pre's and compressors by Frank Lacy.

Jerry Lee Lewis, Mojo Nixon, The Gunbunnies, Joe Walsh, Flat Duo Jets, James Cotton and Tracy Nelson are among those who have recorded at Sounds Unreel. Holder and Hopkins are currently working with up-and-

coming local rock band Crippled Nation and Little Rock, Ark.–based ensemble Pop Sonic.

THE BLUES, THE HOP

Down the street from Ardent is Cotton Row Recording, owned by producer/engineer Niko Lyras. During his 23 years in the business, Lyras has been involved with numerous Gold and Platinum records and received many international awards.

Lyras has been deeply involved with R&B, funk, jazz and blues-influenced music, having worked with Bobby "Blue" Bland, ZZ Top, Bonnie Raitt, John Lee Hooker, The Barkays, Mavis Staples, Dr. John and Tony Joe White, among others. During the past decade, Cotton Row has become a hotbed of hip hop and rap, with releases from The Roots, Three 6 Mafia, 8Ball and MJG, Al Kapone, Hot Boys, Raekwon, Krazybone, Gangsta Pat, Project Pat, Gangsta Boo, Juvenile, Spice One and Lil John.

A top-notch guitarist, Lyras attracts the cream of the local musician crop. His latest creative outlet is forming the group Voodoo Village, whose debut album is getting strong airplay on smooth jazz stations. Other recent productions include the *Soul Comes Home* Stax reunion album and new Memphis metal/hop group Egypt Central.

PHOTO: DOUG EASLEY

Jack White and Loretta Lynn captured a spirit of rebellion on her latest, Van Lear Rose, *at Easley Recording Studios.*

THE VIBE

House of Blues Studios was founded in 1987 by Memphis native Gary Belz and Eagles guitarist Joe Walsh. Through the years, the four-room facility has hosted genre-crossing luminaries including Pops Staples, Jonny Lang, John Hiatt, Isaac Hayes, Janet Jackson, Rodney Jerkins and Kenny Wayne Shepherd. Studio A, with its 1,400-square-foot tracking space and three iso booths, is fitted with a 72-channel, 144-input Neve VRSP console with Memphis' only 8-channel film monitor section, and was the site of the mixes for Matchbox 20's multi-Platinum *Yourself or Someone Like You*, as well as the guitar recording for Stevie Ray Vaughn's *In Step*. Studio B, with its 52-input Westar console, is a favorite with urban artists, and has hosted some of hip-hop's finest, such as Tela, E-40, SkaFace, Three 6 Mafia and Yo Gotti. Under the di-

Memphis House of Blues, founded in 1987

rection of in-house client Chilmark Entertainment, producers including Malcolm Springer have been developing a variety of new regional artists such as King James and Justifide.

"Our Memphis studios have always reflected an inspirational vibe that stimulates creativity and comfort," comments Belz, who in addition to owning East Iris Studios in Nashville and House of Blues Studios in Los Angeles, developed and owned the award-winning Ocean Way Nashville. "It is, honestly, my favorite of all my studios."

PHOTO: RICK CLARK

Saliva lead guitarist Chris Dibaldo fakes stage antics while Paul Ebersold (in "Neal Schon" wig) and Matt Martone mug for the camera.

THE HIP

In a rough-and-tumble area off Lamar Avenue lies Easley Recording, owned by Davis McCain and Doug Easley. Most recently, White Stripes' Jack White wrapped up production of Loretta Lynn's new album, *Van Lear Rose*, at Easley, where it was mixed by White and Eric McConnell. Through the years, Easley has been the favored destination for a huge list of alternative and indie bands, including the White Stripes, Pavement, Modest Mouse, Wilco, Sonic Youth, Iggy Pop, Jeff Buckley and Cat Power.

The Reigning Sound's first two albums, *Break Up Break Down* and *Time Bomb High School*, are examples of the great regional music to come out of Memphis since Big Star's work in the '70s. The band has a new album of raw garage-rock chaos called *Too Much Guitar*, which was engineered by Alicia Trout, Jay Retard and Easley.

THE EVERYTHING

Out in East Memphis in a gutted '50s-era ranch house is 747 Recording, which is co-owned by producers Paul Ebersold and Skidd Mills. Ebersold has produced a number of Platinum acts through the years, including Sister Hazel and 3 Doors Down. Most recently, he produced two more Platinum-level acts: Saliva and Christian rockers Third Day.

"This studio is like our personal toolbox," says Ebersold. "It was built for us and what we like." The studio opened in January 2003, and is equipped with an SSL EG console, eight Neve modules, 16 API mic pre's, a couple of Focusrite modules and two Pro Tools systems, among other gear.

When asked, "Why Memphis?" Ebersold quickly replies, "Soul, blues, rock, gospel—everything that I love is in Memphis. You've got Al Green. Amazing gospel music. Not too mention Elvis, Carl Perkins and so much more. Part of this is because I was raised here—it is who I am."

Jon Hornyak, executive director of the Memphis chapter of the Recording Academy, adds, "During the last 50 years as a recording center, Memphis continues to be a great place to make music. The independent creative and entrepreneurial spirit that historically put Memphis on the map continues be alive and well here." ■

Rick Clark is Mix's Nashville editor.

THE 20TH ANNUAL

TECHNICAL EXCELLENCE & CREATIVITY AWARDS

Listed below are the nominees chosen by the Nominating Panel of the 20th Annual TEC Awards. A special TEC Awards nominees supplement and voting ballot will appear in the September issue of *Mix* magazine.

Please note that in the category of Outstanding Creative Achievement, a complete list of all nominees for each project may be found at www.mixfoundation.org.

The TEC Awards

Saturday, October 30, 2004,

at the Marriott

in San Francisco.

For more information, contact Karen Dunn at 925/939-6149 or Karen@tecawards.org.

OUTSTANDING TECHNICAL ACHIEVEMENT

Ancillary Equipment
Apogee Big Ben 192kHz Master Clock
Audio-Technica ATH-M20 Headphones
Sennheiser HD650 Headphones
SPL Surround Monitor Controller (SMC)
TerraSonde Digital Audio Toolbox
Whirlwind E Snake Digital Snake System

Digital Converter Technology
Apogee Rosetta 800
Dolby DP563 with Pro Logic II
Metric Halo ULN-2 +DSP
MOTU 828mkII FireWire Audio Interface
Prism ADA-8 with DSD Interface
Universal Audio 2192 Master Audio Interface

Amplifier Technology
Architectural Acoustics ICS 4200
Camco Tecton Series
Crown I-Tech
Hot House Model One Thousand
QSC SRA-2422 Studio Reference Amp

Mic Preamplifier Technology
Demeter VTMP-2c
Focusrite ISA 430 MkII Producer Pack
Millennia Media TD-1 Recording Channel
Oram Pro GMS-Al Schmitt
SPL GainStation 1
SSL XLogic 4-Channel SuperPre

Microphone Technology/Sound Reinforcement
AKG Emotion TriPower C5900m
Audio-Technica Midnight Blues MB3k
Audix Micros
DPA 4088 Cardioid Headset
RØDE S1
Sennheiser Evolution e935

Microphone Technology/Studio
Audio-Technica AT3060
Neumann TLM 127
RØDE K2
Schoeps CMC6 xt
Soundelux e49
Telefunken Ela M 12

Wireless Technology
AKG WMS 4000
Audio-Technica Artist Elite AEW-4250
Electro-Voice RE2
Sabine SWM7000
Sennheiser Evolution Wireless G2

Sound Reinforcement Loudspeaker Technology
Bose L1
Community M12
EAW KF730
Martin Audio W8LC
Meyer Sound MILO
SLS RLA/2

Studio Monitor Technology
ADAM S4V-A
Dynaudio Acoustics AIR 25
Event Studio Precision 8
Genelec 7073A subwoofer
JBL LSR 6300 Series
Tannoy Ellipse 8/10

Musical Instrumental Technology
Arturia Moog Modular V Virtual Synth
Korg Triton Extreme
Moog PianoBar Controller
MOTU MachFive Sampler
Roland V-Synth
Taylor/Rupert Neve Expression Guitar System

Signal Processing Technology/Hardware
Drawmer SP2120 Limiter
Eventide H8000 8-Channel Effects Processor
Roger Linn Design AdrenaLinn II
SSL XLogic Multichannel Compressor
TC Electronic Reverb 4000
Universal Audio 2-1176 Twin Vintage Limiting Amplifier

Signal Processing Technology/Software
Antares Filter
Eventide Octavox Harmonizer
Focusrite The Forte Suite
TC Electronic Restoration Suite
Unique Recording Classic Console EQs
Waves IR-1

Workstation/Recording Technology
Digidesign Accel
Lexicon Omega
MOTU Digital Performer 4
SADiE DSD-8
Steinberg Nuendo 2.0
TC Electronic PowerCore FireWire

Sound Reinforcement Console Technology
Allen & Heath PA28
Crest HP-Eight
InnovaSon SY80
Midas Verona
Soundcraft LX7II
Yamaha PM5000

Small Format Console Technology
Allen & Heath Xone:92
Mackie Control Universal
Soundcraft Compact 4
Tascam FW-1884 DAW Controller
Trident S100
Yamaha 01V96

Large Format Console Technology
API Vision
Fairlight Dream Constellation
Oram Pro/Trident 24/80 Combination
Soundtracs DS-00
SSL C200
Studer Vista 6

OUTSTANDING CREATIVE ACHIEVEMENT

Record Production/Single or Track
(Awards go to Recording Engineer, Mixing Engineer, Mixing Facility Producer, Recording Studio, Mastering Engineer and Mastering Facility.)
"Bring Me to Life," *Fallen*, Evanescence
"Calling All Angels" *My Private Nation*, Train
"Crazy in Love," *Dangerously in Love*, Beyoncé
"Hey Ya!" *Speakerboxxx/The Love Below*, OutKast
"Where Is the Love?" *Elephunk*, Black Eyed Peas

Record Production/Album
(Awards go to Recording Engineer, Mixing Engineer, Mixing Facility, Producer, Recording Studio, Mastering Engineer and Mastering Facility.)
Dangerously in Love, Beyoncé
Elephunk, Black Eyed Peas
Fallen, Evanescence
Hail to the Thief, Radiohead
Speakerboxxx/The Love Below, OutKast

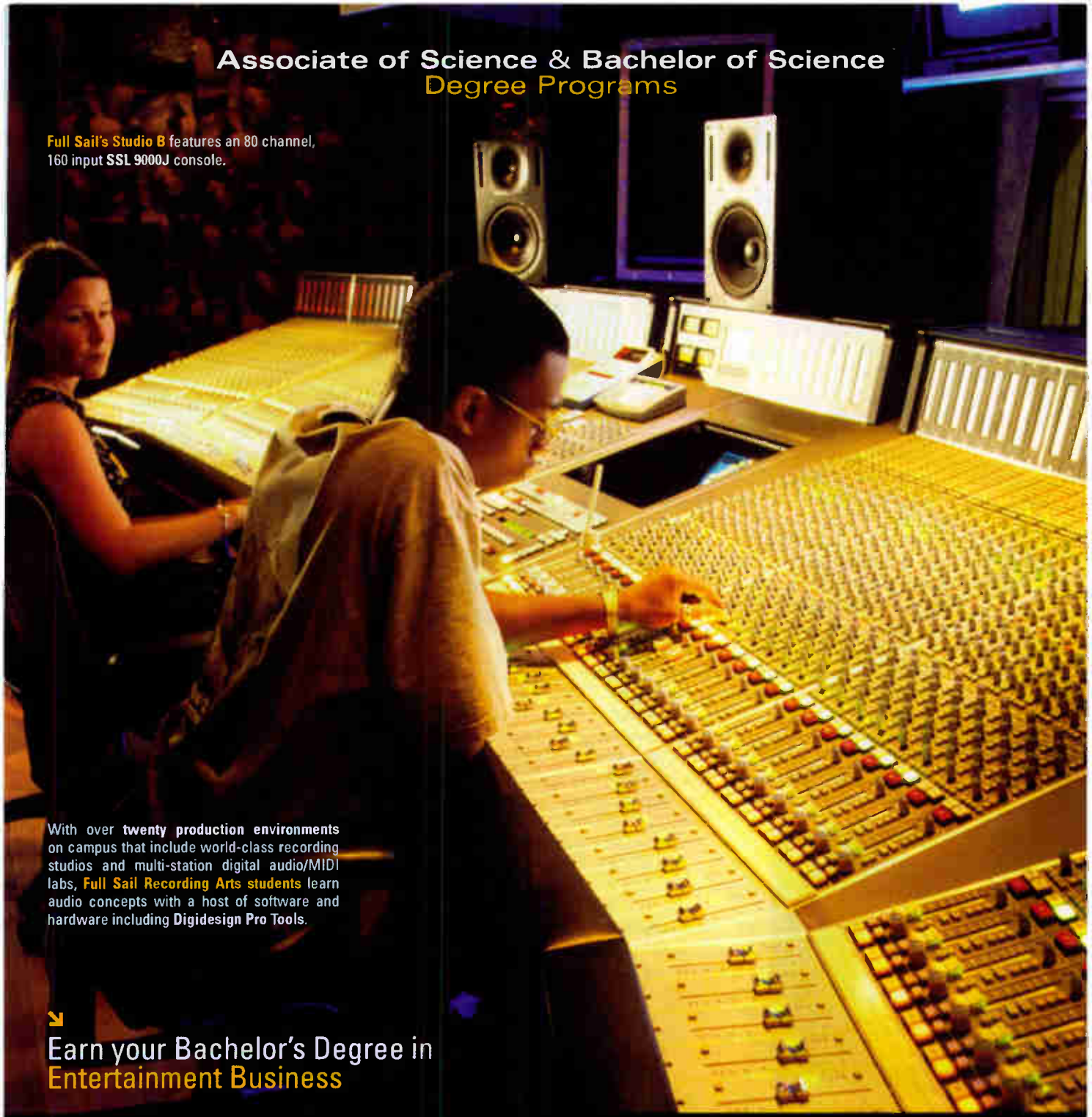
Tour Production
(Awards go to Tour Company, FOH Engineer and Monitor Engineer.)
David Bowie, Firehouse Productions
Toby Keith, Sound Image
Radiohead, Firehouse Productions
Simon & Garfunkel, Clair Brothers
Rod Stewart, Sound Image

Remote Production/ Recording or Broadcast
(Awards go to Remote Engineer, Production Mixer, Music Mixer and Remote Facility.)
Alison Krauss + Union Station Live
Dave Matthews: The Central Park Concert
Bruce Springsteen & The E Street Band: Live in Barcelona
The Concert for George
76th Annual Academy Awards

Film Sound Production
(Awards go to Supervising Sound Editor, Sound Designer, Re-Recording Mixer, Production Sound Mixer, Score Mixer and Audio Post Facility.)
Finding Nemo
Matrix: Revolutions
Master & Commander: The Far Side of the World
Pirates of the Caribbean
The Lord of the Rings: The Return of the King

Television Sound Production
(Awards go to Supervising Sound Editor, Re-Recording Mixer, Production Mixer and Audio Post Facility.)
Alias, ABC
Late Show With David Letterman, CBS
Saturday Night Live, NBC
The Sopranos, HBO
24, Fox

Studio Design Project
(Awards go to Architect or Studio Designer, Acoustician and Studio Owner.)
Bicoastal Music, Ossining, NY
Boston Skyline Studios, Boston
Forge Recording, Oreland, PA
The Hospital, London
Sterling Sound Chelsea Phase III, New York City



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BY MAUREEN DRONEY

Tom Laune

High-Tech on the High Road in Nashville

People unfamiliar with the Christian music industry are often surprised to discover not only its diversity, but just how big it is. Christian music sales in the past three years, according to the RIAA, have constituted almost six percent of the industry total, outselling jazz and classical combined.

This is a world that Nashville-based engineer/producer Tom Laune knows well. Some 15 years ago, after honing his recording skills with rock and alt-rock bands, Laune was searching for a career direction in harmony with his values. The contemporary Christian market proved a fit, and it wasn't long after that he became one of the busiest engineers in the genre. Now, with a number of best-selling albums under his belt for such artists as Amy Grant, Chris Rice, Nichole Nordeman, Rich Mullins and Michael W. Smith, along with a Dove Award and a Grammy™ nomination, he's been able to create his dream home studio.

Known as a technology maven, Laune is an avid gear collector with a serious penchant for customized systems. When I hooked up with him by phone one afternoon for a chat, his enthusiasm for new and innovative equipment was contagious; obviously, this is a guy who loves both his work and the tools he uses to do it.

You don't sound like you're from the South.

I grew up in Nebraska, where I played electric bass in bands all through high school. I also took it upon myself to try to record one of them—hilarious. It was, "We don't sound anything like my favorite Tom Petty records! What's the problem?" That's when I decided to go to college and get a degree in recording engineering. Back in 1983, Memphis State University had a really nice studio they'd just opened.

I knew early on that I wanted to be on the technical side. But in high school, I had the rather false notion that being an engineer wouldn't be as competitive as being a musician. I thought it would be easier and more stable. Of course, the truth is, being a recording engineer is just as competitive as anything else in the music industry.

What happened after school?

After two years at Memphis State, I was accepted for an internship at Ardent [Studios in Memphis]. That turned into a job as the "night guy," answering phones and cleaning up. After I graduated, I was hired on as a staff engineer. That's where I learned my chops working with amazing artists from R.E.M. and the Fabulous Thunderbirds to The Radiators and Keith Richards—all incredible rock albums. I was on-staff for six years, and I got some really good breaks. Someone like [R.E.M. producer] Scott Litt would bring in his own engineer and I would second, but for the indie bands, I'd get to first engineer.

Why did you move to Nashville?

Out of total necessity. I got involved in the contemporary Christian music industry with my good friend and spiritual mentor, Pat Scholes. We found an artist—Steve Wiggins—who I produced and shopped, and we got him a record deal. He was just a guy who sent me a tape, but he went on to front the band Big Tent Revival and had several Number One songs.

You were specifically looking for Christian artists?

Yes. When I was 23, I became a Christian and I wanted to get into the genre. I was really excited to do that kind of music because of its positive message. I thought I could take my experience and produce a really good Christian record.

Anyway, it worked. I got Steve Wiggins a deal with Sparrow Records, one of the largest Christian labels. And that got me inroads with the person who was the head of A&R back then, Peter York. Peter is now the president of Sparrow/EMI. I credit him with being *the* guy who opened doors for me to get involved in the Christian music industry. He hooked me up with [producer] Brown Bannister, and the next thing I knew, I was *slammed* busy. For a while, I got producers to come to Memphis and work at Ardent. But pretty soon, they wanted me in Nashville. I love Nashville, but it was hard to leave Memphis and the people I knew there.

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Tom Laune always has a good time in the studio with new Christian artists. Pictured from left: Clearly Blind drummer Brent French, bassist Chris Burks, Laune and guitarist/vocalist Joey Dornbos

tion, I was co-producing a record with Phil Keaggy for Word Records. I decided that if I bought a system, we wouldn't have to rent a studio. That's what I did, and I was hooked. I got Michael Cronin, an amazing studio builder, to build my studio in our walk-out basement. I knew we'd be there a long time and that I'd be bringing a lot of high-profile clients, so I had him do it right. It's a great, isolated, acoustically treated facility, but it's in my house where I can just walk downstairs to go to work.

> Starting out, I had to learn how to make things sound great before they hit the recording media. I never got accustomed to having tape help me get the sound I wanted.

Your setup is a hybrid?

The sound that I enjoy is a combination of lots of analog signal processing with Pro Tools. I record to Pro Tools, but because I like the depth and imaging you get from an analog mixer, I use an external mix bus. I do all my automation inside of Pro Tools, so I have the advantage of Pro Tools recallability, but I take individual channels out of it and use an analog mix bus.

So you need a lot of D-to-A converters.

I generally use 48 D/A converters for the mix, with an extra eight I/O for the analog equipment I use as inserts. I have four Digidesign 192s, which I think sound great. Three of them have 16 D/As each; the fourth one I use for eight analog I/O and eight digital I/O.

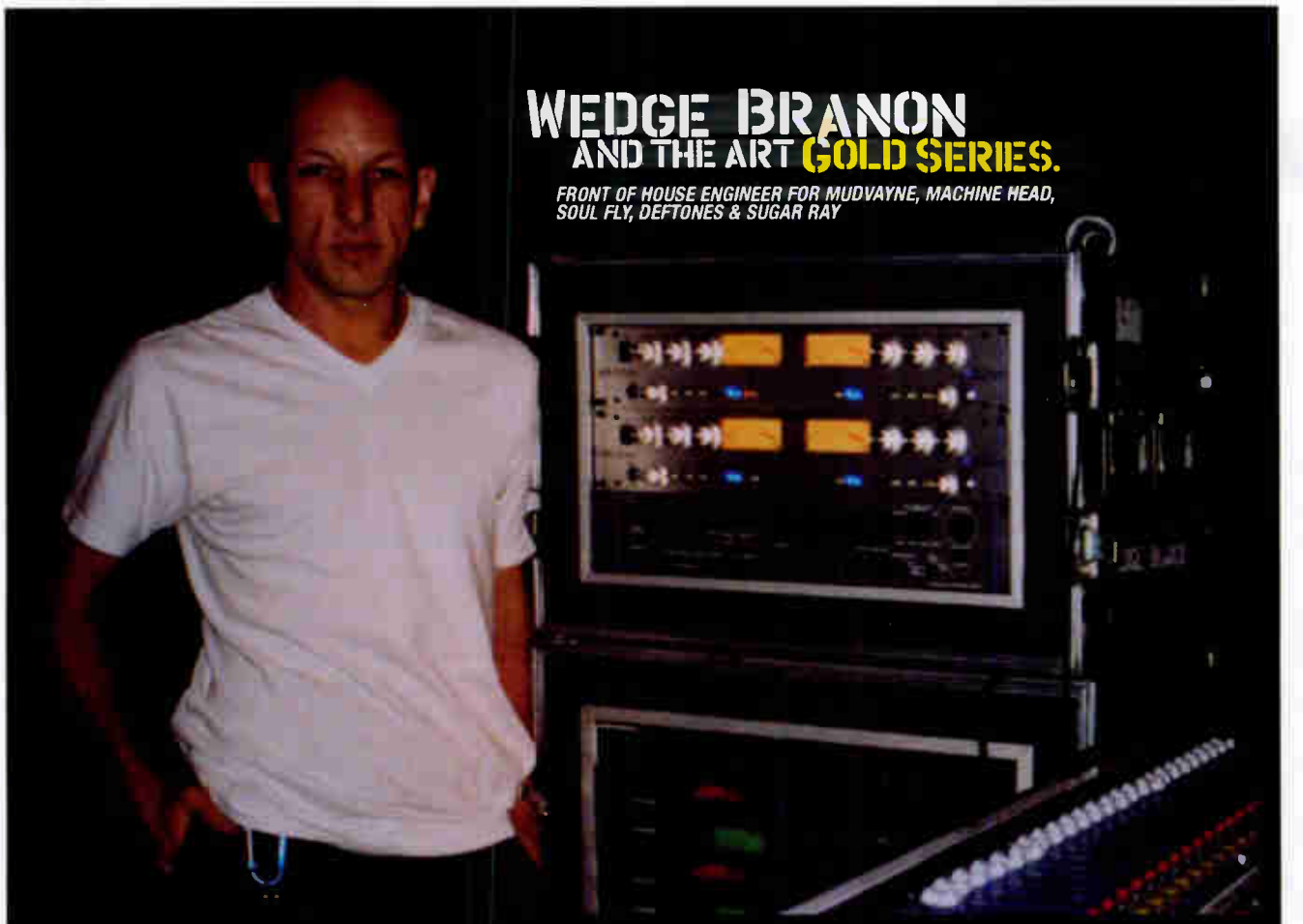
Can you describe your custom-built console?

I wanted to create a mixer that had 64 inputs with the ability to run the mix through five different-sounding mix buses. The idea was to pull up your mix and decide—based on the song—what flavor of console you would like to mix through. The hardest part about building this one-of-a-kind mixer was finding all of the original parts. Some are from a vintage API, some from a Neve 8068, some were Daniel N. Flickinger parts. I also had Cameron Labs create a unique tube mix bus, which sounds amazing! For the absolute SSL-type, colorless, ultraclean mix bus, we included one based on Jensen 990 operational amplifiers and discrete electronics.

You also have a new API mixer.

I'm a fan of the newer API sound, and I use their modular mixer as another color to choose from. I have six of the 8200 8-channel line mixers. They have level, pan, sends, mute and solo. I also have the 7800 master control module, which they all plug into. The 7800 gives me all of the stereo bus controls, with inserts for a compressor or mastering EQ.

I also had something very cool made. With this system, there are no faders, only knobs. If you want to do an analog fade, you literally have to do it with a big knob, which doesn't work for me. API had the insight to put external fader inputs onto the back of the 7800. There are two ¼-inch TRS jacks that allow you to plug in an external master fad-



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Tom Laune's way, right away: "I love being able to work in my own environment with no one coming in and messing things up."

er. But API doesn't sell an external master fader and neither does anybody else. So I had one made, which took a couple of months, but was worth it.

The API modules and the 192s are in my machine room. In my control room, I have the master fader. If I'm mixing to my ½-inch analog machine, I can go right out of the 7800 and into that. If I'm mixing to my Alesis MasterLink, I use a Crane Song HEDD [Harmonically Enhanced Digital Device] 192 converter. It sounds awesome, and what makes it really special is something that Dave Hill, the designer, just added on the newer model: It has a great tape saturation feature that allows you to simulate what it sounds like when tape overloads.

What's really magic about all of this is that I can get the sound of mixing through a console, but I still have the total recall of Pro Tools. To give you an idea, I've been mixing a live record for the last week. Yesterday, everybody signed off on the mixes. Last night, I recalled and printed 13 mixes from 10 p.m. to 2 a.m. I don't think I could have done that any other way than with my current setup.

You use a lot of analog processing. How does that fit into your recalls?

Since I have so much analog gear, I can leave the individual units set. I have a rack of eight channels of API 550B EQ, which I use for premastering. If I want a different EQ setting on a different song, I can just switch to another pair of modules. If I need to change something on them, they're easy to recall because they're all detented. I try to buy as little analog outboard gear as possible that isn't detented.

What's your setup for recording?

Ardent Studios had one of the first Mitsubishi 32-track digital recorders, so, starting out, I had to learn how to make things sound great before they hit the recording media. I never got accustomed to having tape help me get the sound I wanted. For me, digital was always the means of capture; it's about getting the sound right on the front end.

To do that, I use a wide array of gear. I use API and Neve mic pre's and EQ. I'm also into a company called Thermionic Culture, which I discovered when I was working in London a few years ago. I've got their Culture Vulture, which is a really awesome-sounding rackmount tube distortion box. I've used it on vocals to give them a nasty grunge sound for rock mixes and on drum overheads to push the drums forward in the mix.

I also have four channels of Aurora Audio GTQ2s, which are 2-channel, Class-A, mic pre/3-band EQs with transformer I/O. They sound similar to a Neve 1073 mic pre/EQ and are built by former Neve engineer Geoff Tanner. They have limited EQ, but they're very musical. I love them on toms and guitars. I also love the Alan Smart compressor for that wonderful SSL quad bus compressor sound.

In the music you work on, vocals and lyrics are key. What equipment do you use to record them?

Definitely my first choice for a mic pre is a custom-made tube pre by Fred Cameron, which, when I'm cutting vocals, adds a really nice texture. It's huge and open-sounding. It also has limited EQ, but just enough to make a vocal sparkle.

What about that first thing in the chain: the mic?

Lately, I've been loving the Korby convertible mic. It has the ability to switch between

four different capsules. My favorites are the 251 and the U67.

Do you use a lot of older mics?

Not necessarily. I'm a really big fan of B&K. I've got a pair of 4011s, their cardioid mic, which has a nice 20dB pad. You can do great stuff with that on acoustic guitars and drum overheads. They're probably one of the most clear and open-sounding mics made. I'm also a big fan of Royer, who I had custom-tune my ribbon for a hotter output.

After they did that, I sent my Royers, which are very low impedance, to Fred Cameron, who matched the impedance of the microphones to his mic pre. Now I have a condenser ribbon switch on my mic pre that gives me 10 to 12 dB more gain when I switch to the matched impedance position.

Obviously, you're a guy who really needs his own studio customized to your own particular taste.

I love being able to work in my own environment with no one coming in and messing things up.

Do you leave a drum kit always set up?

Actually, I never leave a drum kit set up. I start fresh every time. With drums, it just varies too much depending on the project. Somebody might want a vintage kit; another person might want it really ambient. The next person will want it completely dead and dry. I like to start from scratch. That's how I was brought up at Ardent.

I pretty much do that with everything. Instead of leaving things up, I strike and start over, because you can definitely get in ruts. That's part of why I'm also such a big proponent of checking out and cycling new gear. I always want to know what's new out there. I have to admit, I hang out a lot on Gearsluts.com.

Just by nature, I enjoy trying new things. Lately, I'm really into mixing for picture; I've been doing a lot of live DVD concerts in surround. I find it a lot of fun, for example, that when there's a close-up of a certain instrument, you need to make it pop sonically. And once you get the surround bug, it is real hard to go back.

What's your surround setup?

Surround is part of the reason I've got eight channels of the API 550B detented 4-band parametric EQ. I use that for premastering to

Selected Discography

M: Mixer; P: Producer; E: Engineer

Audio Adrenaline: *Lift* 5.1 DVD (M, 2002)

Rich Mullins: *Songs* (E/M, 1993), *A Liturgy, A Legacy & A Ragamuffin Band* (E/M, 1993)

Nichole Nordeman: *Woven and Spun* (M, 2002)

Passion Worship Band: *Passions: Hymns Ancient and Modern* (E, 2004), *Sacred Revolutions* (E, 2003), *Our Love Is Loud* (P/M/E, 2002)

Chris Rice: *Smell the Color 9* (M, 2000)

Michael W. Smith: *Worship* box set (P/E/M, 2004), *Second Decade 1993-2003* (P, 2003), *Worship* (P/E/M, 2001)

Bruce Springsteen: "Gypsy Woman" (M, 1994)

Watermark: *All Things New* (P/E/M, 2000)

get the overall balance and add a little analog warmth. I do use the internal mix bus in Pro Tools for doing surround. But when you're able to spread out sounds over six or more channels instead of two, it really sounds great. I also have an Edit Pack by Digidesign. It's two channels of motorized joystick surround panners, which work amazingly well. It's like grabbing a motorized fader—it connects up right to ProControl. Check it out on my Website, www.tomlaune.com.

What about speakers?

I've tried just about everything, but I've been into [Yamaha] NS-10s since the early '80s and I still use them. For a long time, I used Dynaudio M2s, but they were too big for this control room. Now I have a pair of Dynaudio BM15As. I still do 99 percent of everything, including surround mixing, on five NS-10s with a Bag End Infrasub. As a matter of fact, I've got another surround setup upstairs in my living room with five NS-10s.

I just think NS-10s rock, but they need two things: supplementary subwoofers to complement the low end and you have to kill them with power. I've got Hafler P3000 amplifiers in mono on every NS-10. I'm giving each one a 400-watt monoblock power amp. When I run them full-on, they sound absolutely amazing.

I have three 18-inch Bag End subwoofers in this studio: the ELF system. I use it to extend the low frequencies of the NS-10s, and then I have a totally separate Bag End 18, the Infrasub, with a built-in 400-watt amp that I use as my LFE channel for mixing in 5.1. I like to keep the frequency extension speakers and my LFE speaker totally separate. That way, I really know what I'm doing. With the turn of a knob, I can listen to the NS-10s either flat or with the low frequencies extended down to below 20 Hz.

So you have all of these different listening environments.

I'd never be able to rig all this stuff if it wasn't my own room! A client can hear the NS-10s flat with no subwoofer if they want, and then I have the ELF system set up so, just where the NS-10s roll off, they supplement. It's a very seamless transition. And I have the Dynaudio BM15As, which I run completely flat without any LFE for a totally different viewpoint.

I also have another room in my studio set up for 5.1 with the Alesis ProActive 5.1 monitoring environment with built-in Dolby and DTS decoder. It's wild: The power amps for the subwoofer and the five satellite speakers are built into the subwoofer. It's awesome for referencing outside my control room, and it's something you can buy off the shelf for about $400! It's one of the few things that interfaces well with game audio, and it's also a great secondary reference system. I have it so that I can burn reference surround discs and listen in that environment for a totally different perspective.

In my control room, I've got a Pioneer Elite universal player, which plays all formats: DVD-A, SACD and CD. In the other room, I have Pioneer's new, inexpensive universal player that sells for less than $200. It works great and sounds great. I also have Playstation 2 that I listen to, set up in surround, going into the Alesis. It's optical right out of Playstation into the Dolby decoder.

I get the impression that you're pretty excited about the future!

Absolutely. The record business is changing every day, and I'm always trying to stay as far ahead of the curve as possible. It's easier for me because I'm not a huge corporation: I can react quickly to new trends and technology. Squeezing every drop of energy and emotion from the music I work on is what really gets me excited. Getting to play with new gear is just a bonus! ■

Maureen Droney is Mix's L.A. editor.

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BY HEATHER JOHNSON

Renaissance Recording

Hard Rock Gets Reborn Bluegrass-Style

Somewhere between the Lost Highway and the Highway to Hell lies Renaissance Recording, where heavy metal becomes bluegrass, Appalachian standards morph into raunchy rock 'n' roll and an occasional songwriter demo or alt-country release gets cranked out—just to keep things interesting.

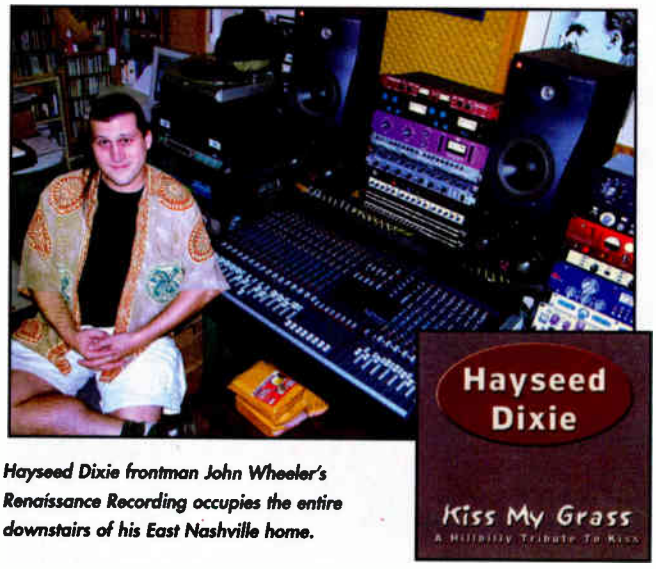
This intersection of tongue-in-cheek humor and raw talent takes place in the lower level of Hayseed Dixie (www.hayseed-dixie.com) frontman John Wheeler's East Nashville home, where he uses his 17x25-foot live room and Soundcraft Ghost LE-equipped control room to record his own band, a raucous outfit that achieved "copper album status" with their 2001 debut, *A Hillbilly Tribute to AC/DC*, and their alter ego, the Kerosene Brothers, who are known for playing a mix of twangy, guitar-fueled originals and old-time hillbilly songs.

Wheeler built the studio in 1995 as a place to record publishing demos for Nashville-based songwriters. "I bought a blackface ADAT, a Mackie mixer and an AKG 414 and just started goofing around as I'd record demos for people," says Wheeler, aka Barley Scotch. "Every time I'd get more work and a little money, I'd get another piece of gear."

Wheeler gradually built his inventory to include the Soundcraft board and a wide variety of outboard gear, including items from Buzz Audio, Great River, dbx and Focusrite preamps; compressor/limiters such as the UREI 1176, Manley Variable-Mu, dbx 160 and 1066; and Buzz Audio, Lexicon, TC Electronic and Yamaha reverbs, among others. Wheeler purchased these items piece by piece to achieve specific sounds, but has since discovered several useful equipment chains. "I really dig the U47 or the Soundelux E47—I think that mic is fantastic—plugged into a Great River NV mic pre into a Purple Audio MC76 straight into the recorder. That's the way I normally record male lead vocals," he says.

For the past couple of years, Wheeler has recorded to a 24-bit, 96k iZ RADAR 24 hard disk system. He also chooses from a mic collection that includes pieces from Soundelux, Neumann, AKG, Shure, Sennheiser and Schoeps, which he uses on all Hayseed Dixie projects. "All of them were cut on eight tracks," Wheeler says of the Hayseed Dixie albums, on which he sings, plays guitar, fiddle, bass and also engineers. "Nothing was stereo-miked, and the only reverb I used was the TC [Electronic] 2000. The guitar tracks were all Schoeps through the Buzz. For acoustic instruments, I think they're the bomb."

Rather than isolate his bandmates, Wheeler keeps everyone in the main room, a converted downstairs living room that Wheeler built the same way he learned how to record: by trial and error. "I'd frame up something, set up a drum kit and go, 'That sounds kind of weird, but what would happen if we moved this wall?' I'm kind of a wacko that way. I figure, if I figure it out for myself, I don't ever forget it.



Hayseed Dixie frontman John Wheeler's Renaissance Recording occupies the entire downstairs of his East Nashville home.

"I've got a couple iso booths but I don't use them much," he continues. "My preferred way [to record] is to just sit everybody around in a big circle. As far as things bleeding into one another, well, let 'em bleed! Can you play or can't you? If you haven't got it together good enough that you can sit around in a circle and get a take, then maybe you shouldn't be recording. You should be practicing. All this 'Let's paste and cut and fix it in the mix' stuff is crap. For one thing, I think that the majority of the people out there could care less about technical perfection. If they did, the Rolling Stones wouldn't be one of the biggest bands."

Wheeler may not cut and paste, but he does own a Pro Tools 6.1 system equipped with "more plug-ins than you'd ever want to use. I mainly use it to mix down to two channels, trim the beginnings and ends, and whack off counts," he says. "It's basically just my DAT desk."

With Hayseed Dixie touring more than 100 dates a year, Wheeler uses his studio mainly to record his own projects now that he has less time to produce other acts. In fact, Hayseed Dixie takes off this month for a lengthy European tour—pretty impressive for a bunch of moonshine-fueled fellas from the underbelly of "Deer Lick Hollar." "We never thought the Hayseed Dixie stuff would be released," Wheeler confides. "We never thought it *couldn't* be, but that wasn't why we did it. It was just a fun excuse to get together with friends and drink some beer, really." ■

Heather Johnson is Mix's editorial assistant.

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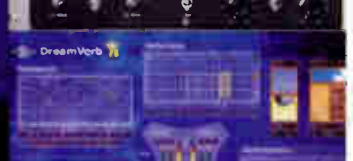

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Maroon 5

Photos and Text by Steve Jennings

Having just toured Europe and Australia, Maroon 5 are out on the U.S. college circuit. This summer, they will be out with John Mayer on a co-headlining shed tour. *Mix* spoke with front-of-house engineer Brian Boyt about the band's current tour.

"On this leg, we're just carrying a mic package with assorted DIs, [Shure] SM98s, KSM 32s, 81s. Our general requests consist of a Midas Heritage 3000, three SPX-990s, an Eventide H3000 and a TC [Electronic] 2290," Boyt says. "For P.A., we usually ask for V-DOSC or VerTec, but sometimes we have to use whatever we get. In terms of the overall mix, the band loves bottom and vocals on top. The tricky thing is finding a place for the keys so they don't get lost in the shuffle. Using the house graph in these event centers/basketball arenas is probably your best friend in this situation." For vocalist Adam Levine, Boyt relies on a Shure U4D wireless with a Beta 58 capsule, as Levine has a really strong voice. Other mics packed in Boyt's mobile closet are Audix models for keyboardist Jessie Carmichael and drummer Ryan Duskic "for the rejection factor."

"We use 30 inputs: 10 for drums, two for bass, seven for guitar, seven on keys and four for vocals," Boyt says. "My rack rider consists of six dbx 160 comps, two BSS 404 comps, one BSS 901 dynamic frequency comp, six Drawmer 201 gates and one nice tube compresser—Summit, Avalon or Manley—for lead vocal. For house EQ, I use a BSS 960.

"One interesting aspect of this run is trying to get everything the band needs while remaining within the college's budget. For most shows, we were booked before the band had a Number One single, so it makes for some interesting days. But working with this band is a great experience; they're a pleasure to mix."

Front-of-house engineer Brian Boyt

FixIt

Brad Madix

Brad Madix, who is currently front-of-house engineer for Rush, has also mixed for Shania Twain and Def Leppard.

If you're having trouble capturing the "complete" snare sound, multiple microphones on the snare top might be a solution. Place two dynamic mics at the edge of the snare in an X/Y pattern and blend them evenly in the console. This dramatically increases the area of the snare top that you pick up while keeping phase issues to a minimum. If you're working with a drummer who plays cross-stick, put a second microphone near the rim where he hits it. I did this on a recent tour and forgot to button it out when he went back to regular snare hits. With some fairly drastic compression, it wound up being an everyday part of the snare sound! This also shows that you can discover cool tricks by accident.

inside

News

Midas Consoles Holland recently sold a Heritage 1000 console to concert hall and congress center De Doelen (Rotterdam).

Meatloaf chose 12 **Martin Audio** W8L line arrays for his recent tour, provided by **Sirius Show Equipment AG** (Germany). The system was driven by Martin MA 4.2 amps and required four additional speaker/MA 4.2 amps combos...**Pechanga Resort & Casino** (Temecula, CA) recently had **Muzak** (Riverside, CA) and **AMT Systems** (Santa Clarita, CA) install an **L-Acoustics** V-DOSC concert system. The 1,200-seat venue now has a four-way loudspeaker system with six V-DOSC cabinets per side and 16 SB118 single 18-inch sub cabinets onstage; all are powered by L-Acoustics LA 48a amps...**Christian Mariners Church** (Irvine, CA) installed a new **ATI Paragon PII** production console for FOH mixing duties...Indianapolis live venue **The Jazz Kitchen** recently upgraded with additional **Klipsch** loudspeakers by Klipsch lab tech **Trey Cannon**, including three KI-362 three-way flown loudspeakers, two KP-682 subs, two KI-102 two-way flown speakers and a KSW-15 sub.

Oxnard, Calif.–based Rat Sound was named Sennheiser Tour Sound Dealer of the Year. Shown receiving the award are (L-R) Lee Stein (Sennheiser), Dave Rat, Jon Monson (both of Rat Sound) and Kelly Fair (Sennheiser)

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PHOTO: BRIAN J. DUFFY

On the Road

Train

During their last tour, Train listened to each evening's soundcheck on CD, which brought ideas for their current album, *My Private Nation*. While FOH engineer Jack Knoebber (who has been with the band for three years) did this last year, Train has upped the CD-burning ante: offering clubgoers that show's first set on CD. The former Tonic/Sister Hazel/Remy Zero/Verve Pipe/Infectious Grooves' FOH engineer takes *Mix* into his private nation.

How much production gear do you carry?
We carry everything but stacks and racks. We have full FOH and processing, snakes and a full monitor rig.

Because Train plays in so many different venues, how do you compensate?
I have everyone on in-ears and have all of the amps offstage to cut down on stage volume. I don't even use any mics for the guitars; I just run the amp head into the Palmer DIs. We don't use any speakers for the amps because the DIs simulate a load so the transformers don't lock up.

Do you have any must-have pieces of gear?
An Audio-Technica 3300 wireless on Pat [Monahan, lead vocalist]. He really likes it a lot and it has really tight pattern so I don't get a lot of cymbals in it.

Are you doing anything new on this tour?
Train is doing multiple nights in a small club. I record the sets and burn them to a CD. We have seven CD towers that burn seven CDs a piece, so we can burn about 50 every seven or eight minutes. We give everyone a free copy of the first set when they walk out the door. If they want the second set, they can go to the Website and download it.

What do you do when you're not on tour?
I have a scuba dive master certification and I am working on my instructors certification. I live in Seattle and the Puget Sound is one of the most beautiful places to dive—if you like cold water.

Now Playing

P.O.D.

PHOTO: JON KIESEL AND GARON KIESEL OF TCS AUDIO

Sound Company: Showco/Clair Bros.
FOH Engineer/Console: Chad Olech (also production manager)/Midas H3000
Monitor Engineer/Console: Barry Kimmel/Midas H3000
P.A./Amps: local racks and stacks/Crown Macro 3500s
Monitors: TCS 1800s, 1500s, 2120M wedges, 2500s sidefills, ML18s, BFM600s, R4s; Shure 700 Series IEMs
Outboard Gear: Clair Contour IO, Alan Smart, TubeTech, dbx 120, BSS, Drawmer, Yamaha SPX-900 and 990s, Eventide H3000, Roland 330, TC Electronic M2000 and D2
Microphones: Shure KSM32, KSM27, Beta 56, Beta 98, SM57, Beta 58, KSM141, KSM137, wireless U4 with Beta 58 capsule

Nickel Creek

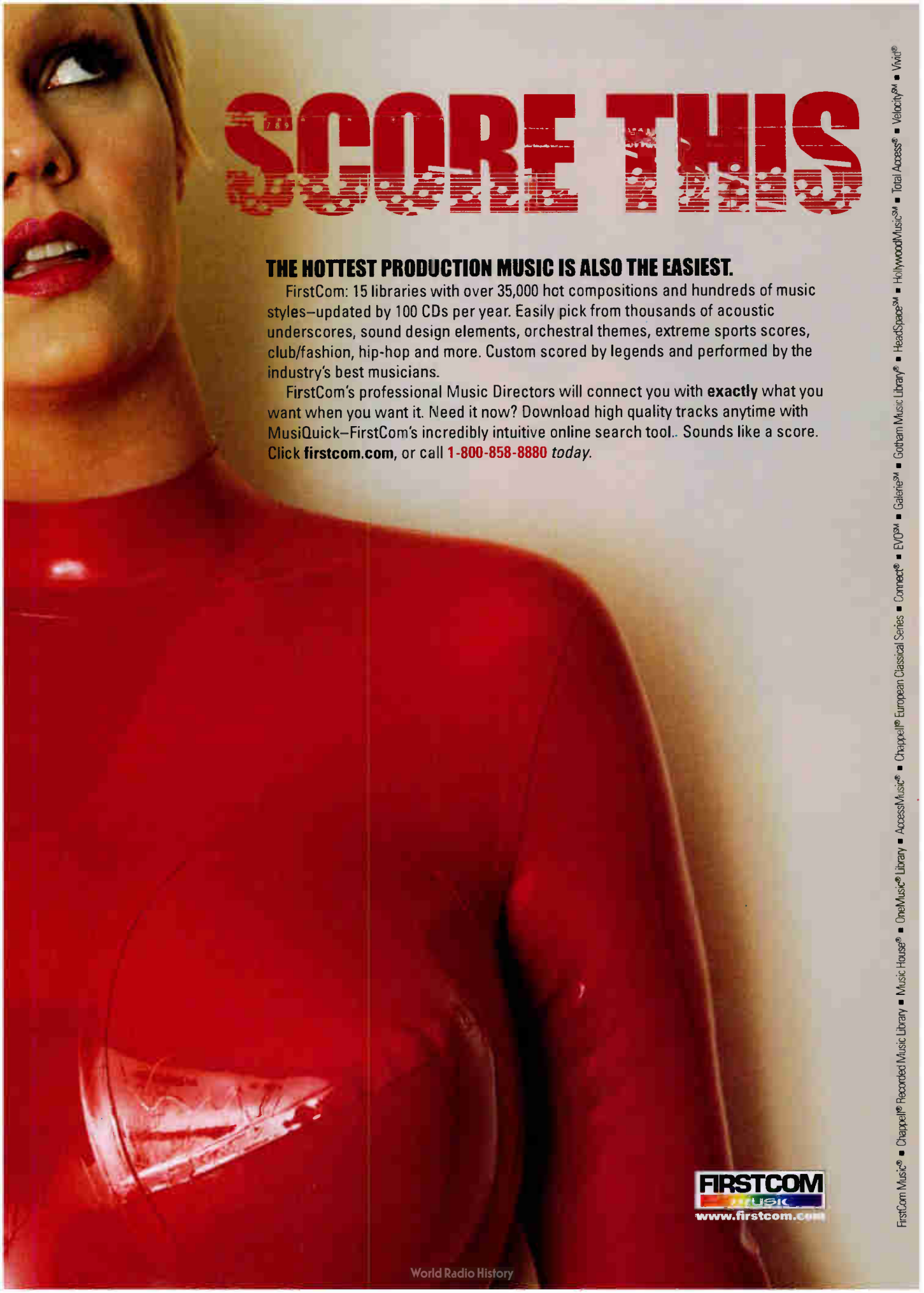
Sound Company: Showco
FOH Engineer/Console: Danny Poland (also production manager)/Midas Verona 320
Monitor Engineer/Console: Rich Weant (also instrument tech)/Yamaha DM2000
P.A./Amps: provided via local sound contractors. Line array systems are requested and preferred over conventional systems/Shure PSM 600 (five), PSM 400 (spare), Shure E5 earphones
Outboard Gear: Ashly Protea (two), Ashly 2-channel parametrics, Summit Audio TLA-50 (six), BSS DPR-904, TC Electronic M-1 (two), HHB Burn-It CD recorder
Microphones: Shure Beta 98H (violin, viola), Schertler Dyn-M pickup (mandolin, bazouki), L.R. Baggs I-Beam pickup (acoustic guitar), Fishman pickup/Shure Beta 98 (upright bass), Shure KSM 44 (banjo), Shure Beta 87C (dance floor, vocals), Shure SM86 (vocals)

Prince Sets Out on New Tour

For the first time in six years, pop star Prince and the New Power Generation band (John Blackwell, drums; Greg Boyer, trombone; Candy Dulfer, saxophone; Chance Howard, trumpet; Renato Neto, piano and synthesizers; Maceo Parker, saxophone; RAD, vocals and keyboards; and Rhonda Smith, bass) are embarking on a coast-to-coast concert tour of the United States, hitting arenas through September 2004, with sound reinforcement duties handled by Eighth Day Sound (Highland Heights, Ohio). Press was not allowed into the show.

The tour comes on the heels of Prince's induction into the Rock and Roll Hall of Fame and his Grammy-opening performance with Beyoncé. The launch of the tour also coincides with the release of Prince's new CD, *Musicology*, celebrating the 20th anniversary of *Purple Rain*.

To catch Prince in your hometown, visit his Website at www.npgmc.com.



MOVING RECORDS

Men on the move (l-r): Braden Stadlman, Wes Schuck and Luke Harper

Routing High-Fidelity Audio to Concertgoers

In our May 2004 issue, *Mix* spoke with front-of-house engineers and business entrepreneurs who were knee-deep in recording a live show, burning it to CD and selling it to concertgoers 15 minutes after the curtain fell. Taking advantage of consumers' "bootleg" mentality, the on-the fly semi-mastered CDs seemed to be a viable and profitable product to sell. However, remote recording company Moving Records is offering a step above: fully mastered CDs *still* available right after the show.

Created in 2002 by Two Fish Studios' owner Wes Schuck, mobile recording and distribution company Moving Records (Mankato, Minn.; www.movingrecords.com) affords front-of-house engineers the ability to stay "in the moment" while mixing a show by coming on-site, recording high-fidelity audio and selling it—staying as much out of the FOH's hair as possible: "After we've plugged in, we're not there," explains head engineer Luke Harper.

Harper, a self-described studio rat, was a Pro Tools

operator at Two Fish for eight years before he jumped into the company's trailer and hit the road with String Cheese Incident last year. "There's a huge learning curve and I respected FOH and live engineers a great deal before, but I respect them even more now," Harper says of making the leap to becoming a live sound engineer. "The time factor is the main issue: It's gotta be done perfectly and it's gotta be done now. There's absolutely zero room for any kind of mistake. When I'm in the studio, I have the luxury of rectifying issues as they come up and dealing with it in a slightly more leisurely pace. When I'm on the road, it's such a, 'This must work now and it must work perfectly and you don't have a second chance.'"

"The other thing about the road that's different than the studio," pipes in Braden Stadlman, Moving Records' bounce engineer and tech partner, "is the sheer amount of variables that we have to deal with: travel, deadlines to get to places, a variety of setups in different venues."

However, their evolution into becoming live sound engineers was padded by the help of String Cheese Incident's sound crew, including Peter Dressen and Jon O'Leary, who took Harper and Stadlman under their wings "and really helped us out as far as liaising with them and future FOH people that we'd have to deal with," Harper recalls.

But where their studio chops are put into play is on the rig's tech side. "We needed to consider everything, as this is more or less uncharted territory," Schuck says. "We needed to 'ruggedize' and rack the odd assortment of gear that was originally designed for the climate-controlled and permanent install conditions of the studio to keep the gear safe and operational out on the road."

"We have two ways of [creating CDs]," Harper explains. "We can either take a 32-channel feed—we have a split snake that we can provide—or we can take a 4-channel feed, which we did for String Cheese: two basic mix channels [a left and right] off the main console and then two channels of crowd to retain that live feel. What these do is from FOH or from our split, they go into Apogee AD16 converters and into a CobraNet box, which converts it so we can send it through Cat-5e to our truck."

According to Stadlman, CobraNet was ideal because of the distances that they found themselves running cable, such as in historic venues or outdoor festivals, and because of the ease of setting up a Cat-5 network, achieving 96k sample rates through it and branching it off as many times as needed through hubs.

Once inside the 35-foot semi-tractor/trailer, signal passes through another CobraNet box via AES/EBU into a Pro Tools system. "That's where the magic happens," Harper says, "because we've got three Pro Tools|HD 3 systems running at all times to a 2.5-Terabyte Apple Xserve RAID." Or, according to Stadlman, "one of the most hot-rodded Pro Tools rigs on the planet!"

"Three of them are always on—we're always directly interfacing with these three," Harper continues. "I interface with one directly as a mix and master station. I'm using a lot of Waves plug-ins to do my mastering, as well as Filterbank, McDSP and standard Digi stuff. The other two are our bounce stations that Braden's running [where he breaks each track up into markers, adjusts lead-in and fades and then encodes for CD]. We have another setup that is just a pure backup. All of this is on batteries, so if we had a catastrophic loss of power, we'd still be able to go. So we have learned the joys of UPS redundancy and having massive battery backups. We can be without power for a good 30 minutes and be fine."

Because Moving Records is using this system and not just a board feed, they are able to go back into a file and change things around. "We can bring up crowd noise retroactive to where we are in the set at that time," Harper notes. "If they wanted a crowd swell on one song, we can go back and give them a little extra crowd in that one part." This retroactive mixing is also useful when a band—or their label—is particular about how they want to sound on the finished product.

All three stations are interfaced through Studio Network Solutions' SANmp, creating a Fibre Channel SAN within the truck so that all three workstations can actively work on the incoming audio to share files—in *real time*. "This is similar to the system that Studio Network Solutions provided Abbey Road with to mix *The Lord of the Rings* series," says Schuck.

"We knew we wanted to be able to record a show at the highest fidelity possible," Stadlman says. "We also wanted to ensure that we could edit things as we were going so that we weren't just recording directly to an uneditable media."

"If we simply hooked a Finalizer up to a CD player," Schuck emphasizes, "we wouldn't be able to edit audio or adjust track markers very easily."

Once the CD is encoded, a disc image is finalized on the computer and transferred via gigabit Ethernet to the duplication nodes (aka kiosks), duplicated on the spot as they

After a roll-over crash on Interstate 80 in Oklahoma destroyed the studio—no equipment was harmed—Moving Records invested in this 35-foot semi-tractor/trailer.

MOVING RECORDS

come off of Stadlman's station—about 300 in five minutes—as a two- or three-disc set.

The duplicators were custom-designed by Stadlman. "The drives interface with a controlling computer via a combination of FireWire and IDE technologies," Harper explains. "Each duplicator contains multiple TEAC and Plextor drives. Multiple duplicators are mounted in custom racks made by Rock Hard Cases. Each rack case makes up one duplication unit. These duplication units are the soul of our distribution kiosks and enable each kiosk to be completely modular. If we need more output at one kiosk location, we can plug in more duplicators there. If we need more dispersed output for an arena-sized event, we can set up more smaller kiosks located further apart to lessen time spent by customers in line. It's really cool."

Once the master disc image is downloaded by the controller computer, the duplication process is initiated. Before and after the disc is written, diagnostics are run on each disc to ensure that a disc containing an error is never released. It is only a matter of a couple of minutes before the first run of discs is handed out.

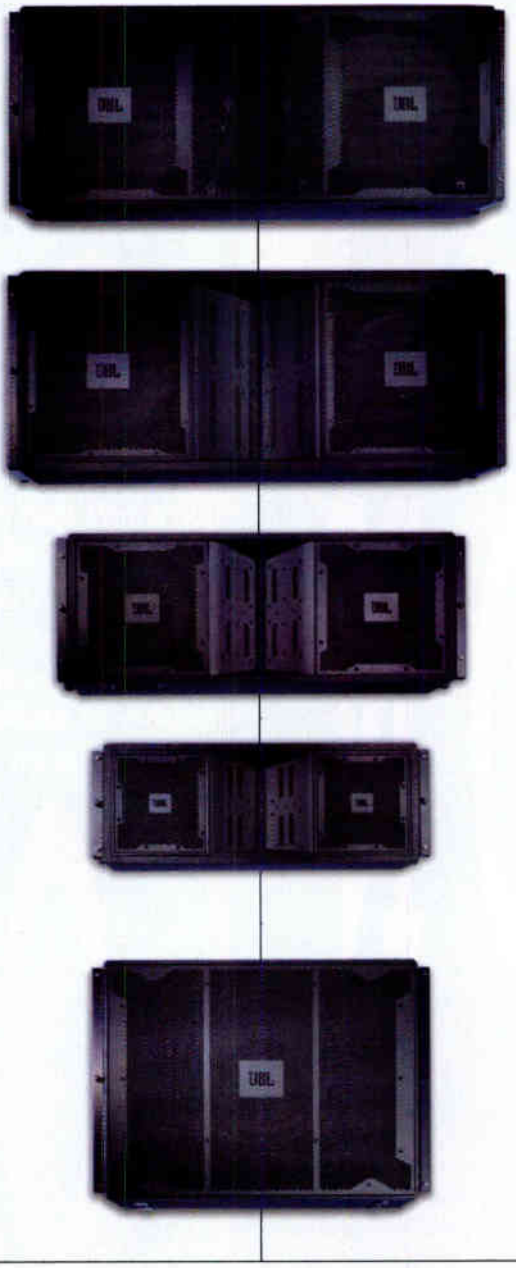
"It's an exciting new world and the fans *love* it," Harper enthuses. "We have had people hug us, we've had people screaming at us that this is the most wonderful thing. Tapers love us to pieces because now they can enjoy the show; they don't have to sit there and monitor their mics."

"Even the sought-after board recordings," Stadlman interjects. "This blows them out of the water."

Future plans for Moving Records include providing a DVD after the show, perhaps even in surround, one of the front-running reasons for producing at 96k. New gear currently being tested for the rigors of the road include the new CobraNet digital audio protocol by Cirrus Logic and free-space optics (open-air laser networks capable of 1000BaseT throughput) for content transfers and sending the final masters to the dupe kiosks. "We have affectionately called the implementation of these new technologies 'Project Hour Glass,'" Schuck reports, "as it has drastically improved our turnaround time and also describes the web of networked distribution kiosks by bringing to mind the hourglass markings of a Black Widow spider."

"We're certainly looking into all of this," Harper emphasizes. "It's constant R&D. We're just waiting for the technology. We *will* do this if it becomes feasible." ■

Sarah Benzuly is Mix's senior associate editor.



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Photos and text by Steve Jennings

ELTON JOHN

Elton John's Red Piano dates in Las Vegas' The Colosseum at Caesars Palace went from 18 shows a year (over three years) to 31 shows this year alone. The home of Celine Dion's mammoth undertaking is now under the visual direction of photographer David LaChapelle, who takes us on a road trip of John's music.

"We've got the Yamaha PM5000 board here [the second one made] and I love it!" enthuses front-of-house engineer Clive Franks (pictured below right with Clair Bros. systems audio engineer Jo Ravitch). "It's a lot warmer and cleaner-sounding. I use a lot more EQ on this board, but that could have to do with the room. I like that the PM5000 has more VCAs [12], more effect sends and a whole bank of aux sends—it's a great improvement.

"I've worked with Elton for 32 years on the road with various bandmembers. Musical director/guitarist Davey Johnston has always been there. Now that [original] drummer Nigel Olsson's back, it sounds like the Elton John band again."

Franks is carrying much of the effects, including an Eventide Harmonizer 3000 to thicken the backing vocals, a Lexicon 480 for reverb, dbx 160 limiters on vocals, an old AMS-Neve RMX16 digital reverb for drums and a TC Electronic 2290 for delay. "I have bassist Bob Birch play through all the notes on the bottom two strings to find what notes set off a resonance in the room," Franks explains.

"I find that frequency and fine-bandpass it, so when it's mixed with Nigel's kick, you hear every note he plays."

On this tour, Clair Bros. systems audio engineer Jo Ravitch's main duties comprise assisting Franks with interfacing with the house P.A., providing support for the Clair equipment used and dealing with the various playback cues that pop up during the show. "The Colosseum is a well-thought-out installation of Meyer line array gear," Ravitch says, pointing out that Francois "Frankie" DesJardins designed and installed the system. "I enjoy working with Clive and we've had a great working relationship since we met on Elton's European tour in 1986! We lean on each other to make the audio presentation as perfect as we can. I've learned more about how to mix a band the right way from Clive than anyone else."

It's hard not to get lost in such a spectacular stoge setting, but John's audio crew ensures that each bandmember is heard crystal-clear. Pictured from left: Elton John, keyboardist Guy Babylon, Bob Birch (bassist/vocals), Nigel Olsson (drums/vocals), Davey Johnstone (musical director/guitars/vocals) and percussionist/vocalist John Mahon

Monitor engineer Alan Richardson (below) is using all of the Yamaha PM-1D's onboard EQ, limiters, gates and effects. "The only external gear I have is a Crown D-75 headphone amp for my cue," Richardson relays. "I don't use cue wedges—I mix on Sony cans—so I need an amp that's a little beefier than the one in the desk. Other than that, it's just output signal to Sennheiser in-ear systems and my amp racks. It's great to be able to take a simple PC laptop anywhere on the stage and be able to operate the PM-1D fully.

"Elton's vocal mic is the old reliable Shure Beta 58A. We've tried other mics for him, but the 58A, so far, is the only one that has the ability to take his vocal pressure without bottoming out and has the rejection that Clive needs out front. The background vocalists are on Audio-Technica 5400s. They sound great for in-ears and are pretty warm-sounding for a condenser mic."

"Elton's piano is a 9-foot Yamaha grand with a MIDI output," Richardson explains of John's instrument of choice, "but 90 percent of the sound we use for the show comes from his rack of digital piano sounds. There's an assortment of gear, but the main sounds come from rack-mounted Yamaha Motifs. That's the only way I can get the monitor levels to where Elton wants them. Clive has mics in the piano for the house, but I can't even attempt to use them because of feedback."

KENNY CHESNEY AND KEITH URBAN

Guitars, Tiki Bars and a Whole Lot of Love

By Strother Bullins

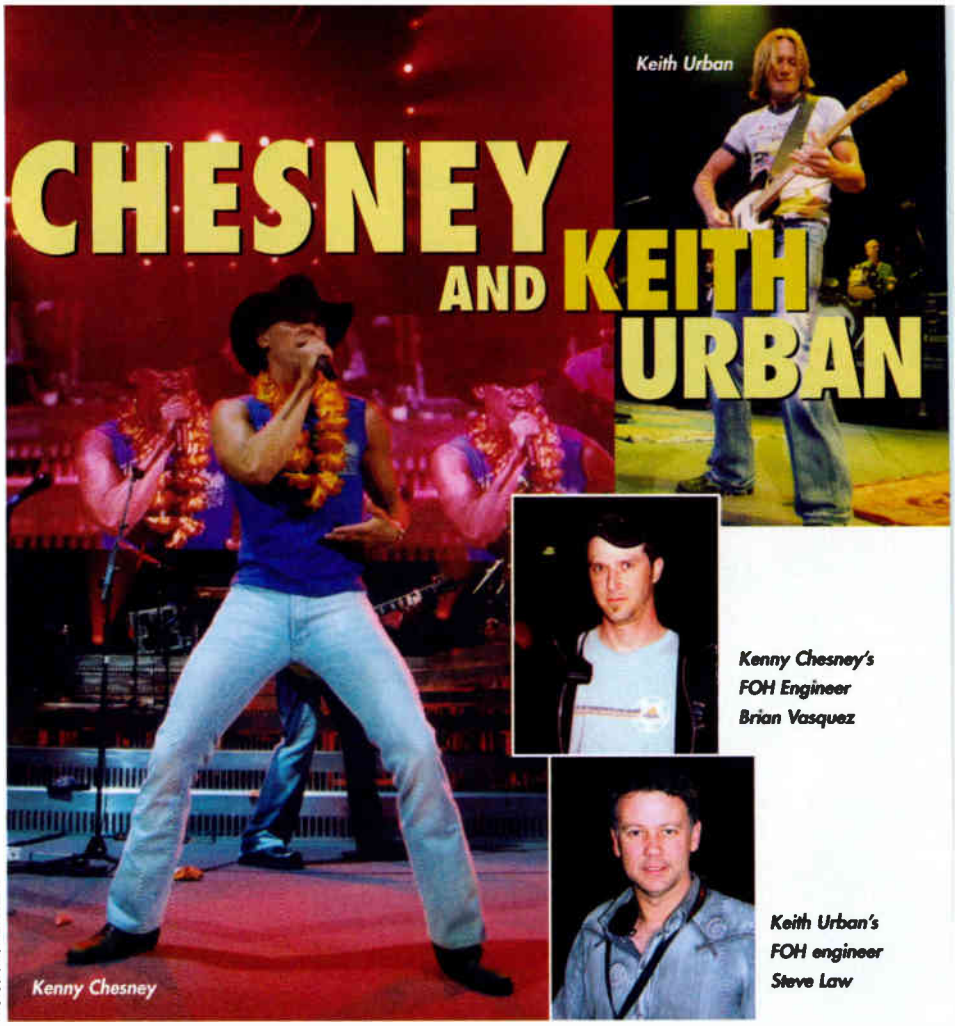
Kenny Chesney's current tour isn't your father's country music show—it isn't even your older brother's. It's a whole lot of Abercrombie & Fitch–outfitted Gen-Y fans donning cowboy hats—not as a uniform, but as kitschy-cool accessories in place of designer trucker caps. There's also a whole lot of rocking going on, as opposed to twanging. Add the faint aroma of spiced rum to the air (Cruzan Rum Company sponsors the Caribbean-themed tour) and you have one of *the* party concerts for this summer.

Chesney, along with opener Keith Urban and special guest Dierks Bentley, brought his party to a sold-out crowd at North Carolina's Greensboro Coliseum on April 29. As previous dates on this tour have proven, the party vibe rubs off on the musicians and crew, who are having just as much fun as the audience is.

The tour is using a completely Crown-powered EAW 750/755 P.A. system bolstered by EAW SB1000 subwoofers. Out front, it's Midas desks for both Chesney and Urban: a Midas XL3 and Midas Heritage 3000, respectively. "The XL3 is such a warm console," says Chesney's front-of-house engineer Brian Vasquez. "It's so round-sounding."

Calling Chesney's voice "what the crowd is here for," Vasquez mixes with lead vocal intelligibility at the top of his priority list. "I try to fit everyone else around him. Of course, I still want to make everything round and full, but not have too much band so that he's buried." Chesney uses the Audio-Technica Artist Elite 3300 wireless microphone system straight into an XL3 mic preamp. "I don't do much to his vocal and really don't have to," says Vasquez. "The only thing I do is EQ the vocal for the room."

According to Vasquez—who started in the monitor position with Chesney—current monitor engineer Phil Robinson keeps the stage volume comparatively low, while providing a performance-enhancing live feel. Robinson uses a Soundcraft Series 5 desk, Westone ear molds and Sennheiser transmitters and packs, striving to keep the mixes very simple—just as Chesney and his multi-instrument–wielding band likes it.



"The band likes everything lean and mean," says Vasquez. "Phil doesn't do a lot of processing—just straight in and straight out. Onstage, we have some guitar amps, but that's all part of a high-energy rock 'n' roll show. We also have two single 18-inch sub cabinets under the deck firing in the direction of the bass player and drummer—they want air movement along with the clarity they get from the in-ears. Phil is really good about rocking that stuff, but not so much that it kills me out front."

Urban's hour-long performance is expertly mixed each night by his FOH engineer, Steve Law, who calls the set a "grooving thing. I try to get the groove factor going, while starting with the kick/snare/hat and bass guitar. I make that really prominent and set the instrumentation around it so the kids can get into it and feel the groove."

Once that groove is present, Law addresses Urban's vocals, using Shure Beta 87C mics for all vocal mic placements. "I love 'em," he states simply. "I've been using them for several years now and have found that they offer a nice response in a variety of different situations." Integral to Urban's vocal chain is the API 7600 channel strip, which Law describes as "very warm, very rich."

Like Chesney, Urban prefers a mix of onstage amps and in-ear monitors. Urban's monitor engineer Ken Beachley, also mixing on a Midas Heritage, allows the stage volumes to get a bit boisterous while providing a blend of detailed ear mixes for the players. "You don't get the live gig feel with only in-ears," Law comments. "For the crowd up front, running only in-ears gives them a P.A. off in the distance and maybe some sidefill. If you were sitting in a club watching Keith, you'd hear the band coming offstage. We're trying to create that sound in the arena."

While Vasquez and Law agree that stress levels are low for this tour, consistent room wrangling is a daily assignment. Compared to touring amphitheaters, Law says that arenas are a mixed bag, usually presenting frequency issues: "You'll have a resonance around 80 Hz in the arenas, and every time the bass guitar goes to a low E, it's just going to ring forever. It's very important to keep that under control, especially for what we're doing."

"When I started with Kenny, we were doing theaters," Vasquez notes. "It's been a rocket ship ride from there: theaters, sheds, arenas, last year's show at Neyland Stadium [Knoxville, Tenn.]. As long as we have a good crowd, I'm happy mixing anywhere." ■

[LINKIN PARK]

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Phoenix (bass)	**AEW-T1000** guitar UniPak™ transmitter (4000 series wireless system)
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UK Sensation Delivers Pristine Yet Powerful Sound

By Heather Johnson

"Don't cross me," Dido teases, introducing her song "See You When You're 40" during one of two nights at Berkeley, Calif.'s Community Theatre. Despite her gentle voice and petite frame, the British singer/songwriter proves her point onstage, when one enthusiastic fan shouts, "You've got a sexy ass!" "Who cares about the songs—it's all about the ass," she jokes wryly, and then continues a set of cool, modern pop.

The London native became an international star when rapper Eminem sampled "Thank You" from her 1999 debut, *No Angel*, on his hit, "Stan." Supporting her 2003 follow-up, *Life for Rent*, Dido kicked off the U.S. leg of this tour in mid-May, with production provided by Canada-based Sound Arts.

Front-of-house engineer Mark LeCorre mixes the six-piece band on a Yamaha PM-1D console. "We decided to beef things up sonically," LeCorre says. "We're running 48 channels of True Precision 8 preamps—bypassing the Yamaha preamps—into the line inputs on the PM-1D. We're also clocking with the Big Ben."

For Dido's vocals, LeCorre uses Focusrite mic pre's and his own Pro Tools|HD rig. "I run her vocal through the Focusrite ISA 110 onstage and then line-in to the ISA 220 for EQ and compression," he says. "From there, I go directly to Pro Tools and run her through the Waves C4 multiband compressor, a Waves de-esser and the Bomb Factory LA-2A. I use plug-ins for dynamics processing on almost all the tracks. I also use a TC System 6000 for vocal effects and reverbs and the PM-1D for instrument reverbs and delays. There are a lot of effects cues in the show and it would be hard to reproduce them consistently every night without a digital desk. We've fully embraced the robots, we like to say!"

Dido sings through a Sennheiser SKM5000 handheld transmitter paired with an 865 capsule. The mic setup also includes Shure SM91s and SM57s, Sennheiser 609s, 604s and E602s and Neumann KM184s, all used on drummer Alex Alexander's kit and Jodi Linscott's elaborate percussion rig. A pair of Sennheiser MKH 416s serve as audience mics. Bassist Keith Golden and guitarist Vini Miranda use Line 6 Pod Pro, with Miranda adding an Avalon 767 stereo compressor. Both instruments and John Deley's keyboards run direct.

These delay-laden instruments, percussion samples and ethereal effects are presented through a Meyer P.A. system: 20 Milo self-powered loudspeakers and two M3D subs flown per side and four M3D subs on the ground per side. "I use MSL-4s on the stage side of the subs to the centers of row three to six and eight UPM-1Ps across the lip of the stage," adds system engineer Jamie Howieson. "I also have two UPA-2Ps for coverage right in front of the subwoofers. This gives the people sitting in front of the subs some mid- and high-frequency intelligibility."

Howieson uses a host computer to run XTA Audio core, SIA Smaart Live software, .WAV files and the PM-1D PC software to operate and tune the system. The computer talks to a wireless tablet PC, which he uses with a wireless test mic to tune various zones in the venue. "I can go to the zone and measure it, play music and actually listen to it with my ears."

Monitor engineer Paul McManus creates six stereo mixes for Dido and band on a second PM-1D, using 24 outputs and seven of the board's eight effects. "I've got vocal delay on about half of the songs and hi-hat delay—stuff that's on the record that they want to hear."

McManus uses a Focusrite ISA220 on Dido's vocals and a Manley leveling amp for the two bass lines. McManus also takes a dry guitar line for Dido. "That goes through one side of a dbx 160 SL," he adds, "I insert the other side of that on her acoustic guitar."

Dido and band all use a Sennheiser-provided EW300 ear monitor system—Dido and McManus wear the G2 Series—with Westone ES-2 custom mold dual drivers. "The techs get a spare pack so they can hear what their guy is listening to," McManus adds. One Electro-Voice X-Line double 18-inch sub per side also helps.

"Live, it's about trying to get more of that reggae dub thing with lots of big bottom end," LeCorre says. "To get those two worlds together—powerful yet pristine—that's a unique challenge." ■

From left: system engineer Jamie Howieson, monitor tech Korey Sherwin, monitor engineer Paul McManus, FOH engineer Mark LeCorre

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Harry Connick Jr.

Jazz Man Embraces Digital Tour

PHOTO: SAM JONES

Jazz isn't the first genre that comes to mind when one thinks of beautiful and intense light shows, Plexiglas stage risers, music stands that dynamically display sheet music on flat-panel monitors, a Wi-Fi network for backstage Internet access or a digital front-of-house console that remembers every audio parameter and can be fully reset between songs. But then again, Harry Connick Jr. is no ordinary jazz artist.

PHOTO: SAM JONES

By Paul Verna

A consummate singer, pianist and entertainer who likes to push the envelope of performance and technology, Connick and his live sound crew have upped the ante for the artist's latest road jaunt by embracing an all-digital audio path based around a DiGiCo D5 console. *Mix* caught up with the tour in mid-May 2004.

At the center of the audio team is Gregg Rubin, Connick's live and studio engineer with a career-long affinity for analog technology—and a burning curiosity to explore the digital domain. Rubin had been happy with the setup on Connick's previous tour, which was centered on a Midas XL4 console.

Pictured (front row, L-R): Ted Jonas and Gregg Rubin. Back row (L-R): Mike Wenning, Alan Alford and Randy Cole

However, he and the rest of the audio crew reached a point where the high-tech orientation of the show warranted a new look at the console configuration. Plus, given the sonic benefits of stage-side mic pre's with a MADI link to FOH, the decision to go with one thin fiber-optic cable instead of hundreds of feet of analog snake was easy.

"The difference has been awesome," Rubin says. "There's virtually no extraneous noise from any of the mics. We haven't had to track down a hum since the beginning of the tour."

The D5 also offers space savings over a comparable analog board and the preamp racks are onstage. All of the effects processing—expect for Tube-Tech CL-1B compressors (vocals) and XTA DP-226s (crossovers, house EQ and delays)—takes place in the console. "We've gone down to two racks at the mix position from five."

The D5 also offers an unprecedented level of control. "You can create a selective snapshot of any or all of the mix parameters so you can change only the effects or only the gates, for instance, without affecting anything else on the board," Rubin explains. "With a jazz band, you don't want to rely too heavily on presets because you have to be ready to react to the spontaneity of the band, but sometimes you could use a little help."

Rubin makes extensive use of the D5's delay architecture: "The abundance of delays on inputs and groups allows for a certain degree of time alignment: tightening up the horn section, making up for the fact that there *will* be bleed when you're talking about a dynamic big band, even with fairly close-miking."

Rubin also uses the D5's delays when making a reference CD of each show. "The stereo mix is delayed to a [Shure] VP88 [stereo mic] at the mix position, pointed to the stage. The stereo bus and mic signals are mixed and sent down a stereo aux to the burner. The delay allows me to keep the mic level fairly high—depending on my distance to the stage and the acoustics of the room—with minimal time slur."

Connick's touring rig employs a JBL VerTec Series line array with Lab.gruppen amplification, a Midas XL4 monitor console (which was previously used for FOH), and EAW 850 and SM200 stage monitors, Galaxy Audio Hot Spots and Crown amps. This lineup helps Rubin achieve his ultimate goal: "You just want the band to sound larger than life."

Mics include Neumann KK105 wireless (with Sennheiser SKM5000 N RF system) and Neumann KMS105 wired units for vocals; Shure KSM32s and Schertler pickups for piano; Neumann KM185s and Electro-Voice RE-20s for bass; Neumann KM184s and Shure Beta 52s, Beta 98s and SM57s for drums; Neumann TLM193s for saxes; Neumann TLM127s for trombones; Royer R-122s for trumpets; and Sennheiser MKE-4, Audio Technica ATM-35s and Shure Beta 98HC for instrument RFs.

Besides Rubin, the crew comprises monitor engineer/production manager Ted Jonas (of Jonas Productions), audio crew chief/stage manager Alan Alford, audio system tech Randy Cole and monitor tech Mike Wenning. ■

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CROWN SHIPS I-TECH AMPS

Crown (www.crownaudio.com) is now shipping its flagship I-Tech Series stereo amps. These two-rackspace, less-than-28-pound units feature Crown's patented Class-I switching output design and operate from 120 to 277 VAC lines. Crown TCP/IQ interfacing allows IQ control over Ethernet and a front panel LCD provides fast access to setup parameters and diagnostics. AES/EBU digital audio inputs are standard, as are analog XLR inputs; optional CobraNet digital audio inputs are planned. The I-T4000 has 2,000 watts/channel, the I-T6000 has 3,000 W/channel and I-T8000 has 4,000 W/channel—all into a 4-ohm load.

KLARK TEKNIK HELIX PC REMOTE

The latest add to the ELGAR software control shell is PC remote control for Klark Teknik's (www.klarkteknik.com) Helix DN9340 digital EQ system. The controller mirrors the unit's operation, allowing instant and simultaneous online control of up to 64 channels of EQ from a laptop, tablet computer or compatible device. A FastNav feature provides access to any function of any channel with two button-clicks for quick, simple control of even the largest systems. The software is available as a free download from the company's site.

GARWOOD APM MONITOR SYSTEMS

Audio-Technica (www.audio-technica.com) is now distributing APM Series personal monitoring products from Garwood (www.garwood-radio.com). Using headphones or in-ear monitors, the APM Series offers simplified wiring, superb audio and freedom from batteries and AC cables onstage, as the APM 200/APM 400 main units supply power and stereo audio to local monitor stations over a single XLR cable. The system lets users balance their own sound with the ensemble or with a click track via a miniature mixer on the 3-channel APM 31 headphone amp. A simpler APM 12 dual headphone amp is available for applications in which individual user-mixing is not required, such as orchestras and choirs.

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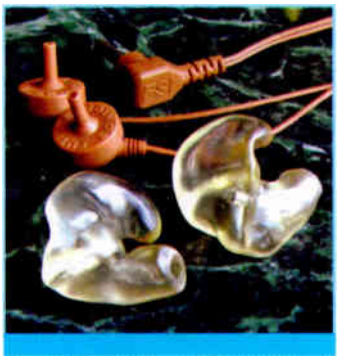

Future Sonics (www.futuresonics.com) announces SofterWear™ custom-fit sleeves for use with its universal-fit products. The option ($135, plus the cost of ear impressions) offers an affordable alternative for those who want custom-fit personal monitoring, and provides a "stepping stone" to the company's Ear Monitors® brand custom-fit professional products. The SofterWear sleeves will fit all Future Sonics Model EM3 and Sennheiser IE3 (packaged with the Evolution 300 wireless monitor system) earphones.

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De-Lovely: The Cole Porter Story

Timeless Sound for Timeless Music

By Maureen Droney

Martinis, cigarettes and tinkling pianos. Witty lyrics, clever melodies, high society and Broadway: Even today, the name Cole Porter evokes images of a particularly romantic and sophisticated lifestyle. A prolific composer from the late '20s to the 1950s, Porter was unmatched as a tunesmith, with a legacy of songs that are still admired and performed.

In the stylish musical film *De-Lovely*, Porter, played by Kevin Kline, looks back on his life as if it were one of his elaborate stage shows. Set against the background of such classic Porter hits as "Anything Goes," "Night and Day," "Begin the Beguine" and—naturally—"It's De-Lovely," the film moves back and forth in time, enhanced by a soundtrack that supports its numerous layers, montages and transitions. The music is paramount, juxtaposing simple songwriting sessions with large production numbers—and an abundance of pianos.

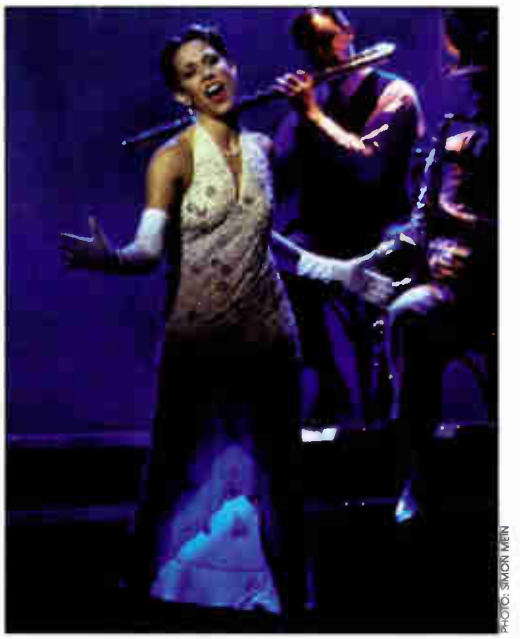

PHOTO: SIMON MEIN

Sheryl Crow sings "Begin the Beguine" as a cast member of Cole Porter's Broadway musical, Jubilee, *in* De-Lovely.

De-Lovely's soundtrack is complicated and subtle. Visuals and sound constantly switch back and forth between different settings and different eras. Add to that director Irwin Winkler's penchant for live sound and a slew of cameo production numbers, featuring such high-profile singers as Elvis Costello, Sheryl Crow, Diana Krall, Alanis Morissette, Natalie Cole and Robbie Williams.

Mix dropped in on the final mix on Stage 2 at Todd-AO's Lantana Center in Santa Monica, Calif., to visit with some of the team: supervising sound editor/dialog and music mixer John Ross, arranger/music producer Stephen Endelman, music editor Christopher Kennedy and sound effects mixer Michael Keller.

Fueled by pizza, the sound crew for De-Lovely *came together at the Euphonix System 5 on the Todd-AO West stage: (L to R) Jason Barnowski, Walter Spencer, Rob Cowen, Christopher Kennedy, Michael Keller, Stephen Endelman, Charles Winkler, Irwin Winkler and John Ross.*

SUBTLE SOUNDS

"The interior of the Wallace Theater serves as a staging ground for the film's action," explains Ross, an industry vet known for his work on such films as *American History X*, *Austin Powers*, *Lost Highway*, *Blade II* and *The Butterfly Effect*. "A scene might begin there with Cole playing piano and then venture off into different eras of his life using different mechanisms to travel backward and forward in time. Because of that, we had to design a very nebulous soundtrack that was basically nonlocational. For example, we'll have a hint of traffic with some background sounds that are identifiable as New York City. But instead of being specifically 'period,' they can't be recognized as either modern or old.

"The sound of the theater itself is sort of hollow," he continues, "with a continuously echoing atonal pulse, the kind of thing that would be generated by piping systems and the distant, muffled city and traffic sounds. We filtered out anything that would signify period—sirens or cars—to ultimately suggest the interior ambience of a theater anywhere from the 1900s to the 1950s."

"All of the locations have a very distinct sound," adds sound effects mixer Michael Keller. "The theater is a timeless, isolated capsule, acting as a kind of bridge between the past and the present."

According to Keller, the balance between ambience and dialog was a delicate one, especially during scene transitions. "We had to listen to the dialog during predubbing," he explains, "because there were so many pre- and post-laps, where the visuals had already cut to the new time period but the dialog remained in the past. Our backgrounds had to shift with the cue of the dialog and not necessarily with the picture."

—CONTINUED ON PAGE 94

Surrounded by Dr. Octopus!

Spider-Man 2 Offers Fresh Sounds and a Cool Mix

By Blair Jackson

PHOTO: SONY PICTURES IMAGEWORKS

When we last left Spider-Man, the web-slinger had finally triumphed over the nefarious Green Goblin, while his infatuation with lovely Mary Jane Watson had more than his Spidey Sense tingling. Now, two years later, Watson is headed toward the altar with some other lunk-head and (surprise!) there's a creepy new villain in town: Dr. Otto Octavius, better known as the steel-tentacled Dr. Octopus—or you can just call him "Doc Ock"; everyone does.

"This film was mixed in true comic book fashion, with plenty of *wham*, *bam* and *pow*!" enthuses effects re-recording mixer Greg Russell during a break from the final mix of *Spider-Man 2* at the Cary Grant Theatre on the Sony lot in L.A. Russell and his partner, dialog and music mixer Kevin O'Connell, were also onboard for *Spider-Man* in 2002, earning an Oscar nomination for their work on the film. Both note that director Sam Raimi has an intense interest and involvement with the sound for his films.

"Nobody dissects a soundtrack like Sam Raimi," O'Connell says. "We'll go into [mixing] an action scene and he'll say, 'Okay, take *everything* out. Take all the air out, take all the backgrounds out, the traffic, the wind, *everything*. Now I want you to put in Spidey's web sounds and then put in that chin sock. Now I want you to put in Doc Ock's feet and hands and whatever.' He likes to build from scratch rather than going the other way, where we have everything in there and then try to figure out what's *not* working."

Though *Spider-Man 2* naturally shares some sonic similarities with its predecessor, it also presented plenty of new sound opportunities, from the complexity of the Doc Ock character to rethinking the noise of Spider-Man's webs. On the recommendation of film editor Bob Murawski, Raimi hired a new supervising sound editor/sound designer for this show: Paul Ottosson, who has had limited supervisorial experience, but quickly showed himself to be both creative and adaptable to Raimi's work methods.

"Paul really stepped up to the plate and delivered some amazing sounds," O'Connell says. "Over the course of 140 films or so, I've heard it all, but this guy came up with some stuff I've never heard before. That's really exciting to a mixer."

"One of the first things Sam said was that he wanted the sound of the spider web to be a little more organic," Ottosson says. "So I went to one of the biggest stages they have here on the lot—it's about 300 feet long—and I rigged it up with microphones and I went in with a sling shot and started shooting all these objects past the microphones. I shot everything from pieces of copper piping to coins, hoping to get some sounds that would work for the trail of the web as it goes through the air." Ottosson recorded these effects using matched-pair arrays of Oktava microphones and a Deva 4-track. "The Oktavas sounded great and they're not expensive, which was good because I kept hitting them," he says with a laugh.

Not surprisingly, Doc Ock proved to be one of Ottosson's greatest challenges. "I saw him as a man first, so I didn't want it to be just machine noise," he explains. "I wanted the tentacles to sound more *alive*, like he is, because they really do have their own personality. So I got the heaviest grade of motorcycle chains that I could find and washed them in acid to get some more metallicness out of them. Since each link in the chain is perfect in shape and size, it gave the tentacles more fluidity. Then we would throw the chains or roll them in different ways and it would have a particular rhythm. I also wanted the sounds of the tentacles retracting. Again, I didn't want it to just be a machine

—*CONTINUED ON PAGE 96*

L-R: Paul Ottosson, Kevin O'Connell, Greg Russell, Jeff Haboush

Recording the Score for *Troy*

Thirteen Days to Deliver an Epic Soundscape

By Matt Hurwitz

How do you write and record a new score for a major studio feature that's already been dubbed with only seven weeks before release? In a big hurry. That's what film composer James Horner and scoring mixer Simon Rhodes were up against for Wolfgang Petersen's *Troy*, released by Warner Bros. on May 14.

"James had 13 days to write the music," Rhodes says. "There was a moment when he was writing 10 minutes of music a day and there's about two hours of music in the film, a fair amount of it orchestral, and we had 12 days to record it." Recording began on April 10, working seven days a week until completion on April 21, with final dubbing done in London the following day.

Rhodes' setup at Todd-AO comprised two Pyramix workstations and two Pro Tools systems. One Pyramix rig served as the primary recording system (recording to an SATA RAID hard disk recorder, with a pair of 2-inch analog tape recorders for backup), while the other was used for editing. The engineer used one Pro Tools rig for recording overdubs and small ensemble cues, while the other was used for mixing. The mixer and music editor's workstations were equipped with a pair of keyboard video monitors (one to display the system's edit page, the other its mixer) with a single screen for the recordist. The systems were switchable, permitting control of both the Pyramix and Pro Tools systems by any user.

Rhodes recorded directly to the main Pyramix rig, utilizing all of the system's available 56 tracks: 48 for instrumentation, plus a live 5.1 mix and a stereo mix. "I actually used all 96 inputs of the studio's SSL 9000 console," he says. The 118-member orchestra—the largest such group ever recorded at Todd-AO—and the 20-member London Bulgarian Choir were recorded without a click track, conducted by Horner himself.

Rhodes had the studio's acoustic panels removed for the occasion, preferring the room's natural resonance. "I get bolder and bolder each time we do a show here, in terms of how many to pull down!" he enthuses. "The room is tuned so it has a color to it. When you remove the panels, it makes a more naturally acoustic color rather than a dry, colored one."

PHOTO: SIMON SMITH-HUTCHON

Brad Pitt stars as Achilles in Warner Bros. Pictures' epic action adventure Troy, also starring Eric Bana and Orlando Bloom.

Top: Brad Cobb, DMT Pyramix engineer; Jim Henrikson, supervising music editor; David Marquette, Todd-AO scoring recordist; Simon Rhodes, scoring mixer; and Marc Gebauer, Todd scoring technical manager. Bottom: Doug Botnick, president DMT Rentals, and Ramiro Belgardt, music editor/operator

The orchestra was miked using a selection of the engineer's favorite microphones, including Neumann M50s used for primary overheads through EAR preamps. The orchestra was unusually seated, with groups of similar instruments on either side to allow pickup of stereo pairs of such instruments. "James actually writes antiphonally," notes Rhodes. Rhodes also miked the choir, including soloist Tanja Tzarovska, with a large grouping of U67s, KM84s and U89s. "I wasn't sure if they'd be singing across a full orchestra, in which case they wouldn't carry, so I had an extra 10 microphones covering them."

Another interesting trick was using several octave dividers, a favorite tactic of Horner's dating back to his work on two *Star Trek* films from the early 1980s. Contact mics were placed on the third and bass trombones. The signal was fed through a TC Electronic M5000 octave pitch-shifter and then through a loudspeaker.

Recording was to a SATA RAID hard disk recorder. Rental house supplier DMT's Doug Botnick notes the importance of recording at as high a sampling rate as possible to reduce Nyquist effects. While Rhodes was able to record a previous film at 96 kHz, storage limitations came into play

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Flaming Tar Balls!

It's a New King Arthur

By Blair Jackson

PHOTO: COURTESY WARNER BROS.

The story of King Arthur, his brave Knights of the Round Table, the fair Guinevere and the magical sword Excalibur has been told in many films during the years, but it's safe to say that there's never been an interpretation quite like this summer's *King Arthur*, directed by Antoine Fuqua, whose best-known film was the very modern and very violent *Training Day*. Fuqua's take is high on realism and on the political machinations of fifth-century England and low on the mystical/magical aspects of the tale.

"Fuqua is a guy who really wants to tell a story through characters," comments co-supervising sound editor Lon Bender of L.A.-based Soundelux. "Even though this story takes place in A.D. 425 and is in a sort of epic surrounding, it's really been driven down to a more intimate place where the characters can really shine. A lot of the movie is very moody: The colors are blues and greens and black; there's not a lot of yellow and white and bright colors. It's dark for the Dark Age. Everything is very organic and that goes for the sound, too."

The word organic gets tossed around a lot by film sound people to imply natural as opposed to artificial sounds. I asked Bender what it implied in this case. "A lot of the [electronic] devices we would usually use to create motion have been eliminated. For instance, there's a lot of fire in this movie and a huge sequence with catapults shooting these flaming tar-filled balls. Because we wanted it to sound organic, I honed in on fire material instead of anything that might make it sound modern or synthetic. We wanted everything to sound like it came from the Earth. So then it became a question of finding ways to use [the sound of] both small flames that had movement in them and large flames that could give weight to the impact of these flaming balls. We spent a lot of time burning things to get all the material we thought we'd need. There are all sorts of different fires, too, from small, intimate fires where people are sitting around outside or fires that are lighting up interiors and big fires that are rampaging."

"Lon and co-supervisor Eddy Joseph have gone to great lengths to provide an authentic period feel for this film through the result of many hours of extensive field recordings, which has led to a cleaner overall mix," says supervising sound mixer Kevin O'Connell.

Field recording sessions, using both 4-track Deva and stereo DAT, took place at various spots in the north of England. "A lot of the story takes place in the snow, so we spent a lot of time recording horses and carts on snow to get that sense of the ice—the way it sounds when heavy things hit it or slide on it or when the ice cracks," Bender says. "These are very specific sounds we needed. On a Foley stage, you can put down corn starch or whatever and make it sound like snow, but to get something to sound like ice, you have to get the real thing."

A few years ago, Bender won an Oscar for his work on *Braveheart*, but he notes, "Every time I do a movie, I treat it like it's the first time I'm doing a movie. With this film, I really tried to clarify what the different weapons are like. There are bows and arrows and flaming bows and arrows. There are axes and swords and, of course, the Excalibur sword, which is very specific—it's King Arthur's sword!" he says with a laugh. "It ended up being a combo of a lot of interesting sword tones combined. It doesn't necessarily just have the biggest, smashiest sound. It's subtler than that."

Bender says that much of the original weapons recording was done by Francis Lindsay, "who cut all the swords for [Yimou Zhang's] Chinese epic, *Hero*. That has some really amazing sword material in it. He did a great job on this one, too. I was looking for consistency and to make the weapons sound interesting instead of just *big*." While some period swords provided by museums and collectors were used—"We get a lot of help from military consultants," Bender says—they also used what are known as "movie

Some of King Arthur's sound crew at Future Post (London), from left: Colin Richie, Kevin O'Connell, Lon Bender, Eddy Joseph and Simon Chase

swords," prized for their clanging metallic resonance. "You know what?" Bender says. "A lot of times, the real thing doesn't sound as good as you want it to sound. It's like, have you ever heard a real car crash? It sounds like a bunch of plastic being smashed. Reality is one thing, but this isn't the movie where the exact sword for that moment is necessarily the sword you're hearing."

Typically, the sword hits have several sound components: "There's the approach of the weapon to the target and then you've got the impact," Bender says. "How deeply do you want the goriness of that impact to be? Is it a glancing blow or does it rip into the guy? And in the case of swords, there are a lot of different types of elements—how they release from the impact of another sword or a piece of wood or a body or whatever—and each of those has to be articulated. We spent months, literally, getting ready for the sword fights so we could get that kind of detail. When you put it all together, it almost works like music." Bender worked closely with Oliver Tarney, who was also instrumental in the sound editing process.

When we spoke in early May, Bender was at Ardmore Studios outside of Dublin, Ireland, working on the temp dub on the studio's Harrison MPC console. "Eight reels in eight days," he notes. "Actually, it's going very smoothly. A lot of it we premixed—I have 28 5-track premixes to work with." The premix was to be scheduled for Future Post and the final mix at De Lane Lea. Both studios are in London and offer Neve DFC consoles.

Soundelux also set up facilities in London for this film and, previously, with *Troy*. Co-supervising sound editor Eddy Joseph worked on other aspects of the sound. "He and I are basically splitting up the creative process," Bender says of Joseph. "He is looking after the background and Foley on the picture and dealing with the crew in London and I'm working in close detail on the sections that have to do with all the weapons and the fire material. We have quite a large operation set up there with 13 cutting rooms. It's like a complete California-style operation.

"It's interesting trying to re-create what the England of that time sounded like," he continues. "We had lots of conversations about birds that do and don't live here. You can't have crickets at night—there are no crickets in England. You can have falcons but not hawks. We've been trying to create the world that represents that place and time, from the clothing to the weapons to the chill in the air." He pauses and chuckles. "If you're around in 425, make sure you've got some good, warm armor." ■

De-Lovely

—FROM PAGE 90

The murmur of an audience before the curtain rises, the rustle as a page of sheet music is turned, the click of a lighter: For *De-Lovely*, small details often dominated. "For the most part, the work on this picture was very subtle," Ross comments. "In some of the scenes, the sound sculpture as a background had to be very still. It's about the performance and the characters, so we had to build little moments that were very deliberate and staged. We're selling the presence of the actors, but we can't be large or over-the-top. We just have to be felt."

To that end, the crew relied in large part on production sound recorded by Tim Fraser. Keller estimates that approximately 90 percent of *De-Lovely*'s effects were PFX. "We had really clean stereo production effects," he comments, "especially in the dance scenes, which are big musical or tap dancing numbers. Having that many channels of production sound is kind of unheard of; it was certainly a first for me. Normally, we have just two or three tracks that a dialog mixer provides during his predubs."

"There are a lot of goodies in production if you go looking," says Ross. "We got the code book—the picture editors' bible—so we could look though alternate takes of a particular scene. In particular, we were looking for things related to the actors: pieces of movements, exhalations, production elements we could use to build up a scene."

SCORE AND SONG

For New York–based composer Stephen Endelman, *De-Lovely* was also an unusual project. As music arranger and producer, he supervised the cameo vocal recordings, most of which were done at Air Lyndhurst Studios in London (with several recorded at New York's Avatar and Sony Music Studios).

"For each arrangement," he explains, "there was a slightly different setup of instruments. For example, for Natalie Cole's song, 'Every Time We Say Goodbye,' we had a string quartet, piano and flügelhorn. For Caroline O'Connor's version of 'Anything Goes,' there was a big band sound with a lot of brass."

Each song, recorded by Endelman's longtime engineer Philip Bodger, took a day to complete. Tracks were laid to analog multitrack tape and then transferred to Pro Tools for editing and overdubs. Final mixing, also by Bodger, took place at Sony in New York. "We recorded the rhythm sections in the morning, along with a basic guide vocal from the artist," recalls Endelman. "The artist would come back in

the late afternoon to do their vocal and then we'd do temp mixes that would be used for the shooting. The only variation in that way of working was with Natalie Cole, who was truly amazing. We had a packed control room with people who'd come in from Air Lyndhurst's other studios just to hear her. She sang it down four times with the band and that was it."

As Cole Porter, Kline played and sang the bulk of his numbers live on the set. "Kevin wanted to do most of his parts live for the feel, and he did a very good job," says Ross. "His performances fit well with the character of Cole Porter, but that meant a lot of singing into a radio mic. There was also a lot of studio piano work, so we ended up with a lot of different pianos."

Live recording of the pianos was to a 4-track Zaxcom Deva. Camera demands ruled out booms, so for the most part, hidden wireless mics had to suffice, often resulting in a piano sound that was mono and, due to placement issues, not always optimal. Studio pianos were recorded in California, London and New York with different players. It was Ross' job to match them up. "For the most part," he says, "I ended up making a compromise between the width and the roundness of the production pianos and the scale and size of the studio pianos. Sometimes the studio piano had to be a little smaller and less full-frequency to marry the two together. Room reverb helped, as well as EQ to blend the two."

"It was an extraordinarily complex film," says music editor Kennedy, whose work on the project was largely done from his home studio in Pennsylvania. "The most important thing for me was to ensure that the editor's cut remained in perfect sync with the original playback track. The picture editor, who was on the show long before me, was using a live guide track recorded on set so that she could use the inherent ambience to make the cut scenes sound more realistic. That worked well for the most part, but there were some occasions when, due to clocking problems on the set, a particular track didn't match the length of the original playback track. On top of that, during the extensive editing process, some cuts would go awry and end up out of sync. It was my responsibility to make sure that every shot in the film was in sync in the final cut.

"In some cases, the musical scenes had lengthy dialog sequences cut into the middle, requiring additional refrains to be added. I had to work very closely with the picture editor to ensure the rhythmic continuity of the music. The challenge was to take the multitracks and switch the instrumentation around so it didn't sound as if I

were looping the same section over and over behind the dialog."

"One of the areas where we were very successful," remarks Endelman, "was that we had very few sync issues; we were able to keep sync the whole time. We sorted through the timecode wars at the beginning so that everyone was on the same page from day one.

"Also, the amount of organization that we were able to do from the very beginning was enormously helpful. The artists were all aware of what they were going to be doing, so they were all prepared. Considering that we had something like 68 musical starts, all in different keys and tempos, and all music that's very difficult to use a click with, the preparation that we did was invaluable. It came together very fast in terms of what we wanted to do with the tempos and arrangements and was quite synchronistic, which is pretty amazing when you consider how easily this all could have gone south!" ■

Spider-Man 2

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sound, like a servo, so I ended up using really heavy-gauge piano strings. I would pull them across different objects—other strings or metallic objects. We used that almost like a motor, but it doesn't sound like a regular motor."

Ottosson built his effects tracks in Pro Tools, manipulated them with various plug-ins and delivered hundreds of possibilities for the full range of Doc Ock's motions to Russell. "There's a lot of nuance to Doc Ock's sounds," the mixer says. "There's his footsteps, which I separated into LCR and LCR surround. Then I had his tentacle predub, which comprises sort of ratchety, spinal kind of metallic sounds and a wire motion, which also has whooshing effects that go with it. Then there's the claws predub—he has big claws and little claws within the big claws, which have microscopic sounds of what's inherent in the larger claws. And then there are vocals for those claws—they talk to him, they communicate with him with sort of high-end screechy vocalizations—and those are separated.

"I probably had about 100 tracks for the tentacles," Ottosson continues, "but we had them on different stems. All the elements for the left tentacle would be on maybe four tracks, and all the elements for the right one on four, and the lower and upper ones would be on four tracks and then each claw would be another two or three tracks each. The vocalizations of the claws would be more—it was huge. Then Sam would like everything except for that one claw way over there to the right," he says, chuckling. "But because we had the stems, we were able to go in and fix things pretty easily."

Russell and O'Connell mixed on the huge Harrison MPC digital console on the Carey Grant stage, and as Russell notes, "Working in surround really gives me the latitude to play. There's a ton of surround work in this movie: a lot of movement, a lot of panning. With Doc Ock, you have his tentacles and his feet and all this motion in every direction—he was *made* for surround. He winds up these tentacles and I just drive these low whooshes and thick metal sounds through the surrounds and up to the front and back to the back."

"A couple of times, we go to the perspective of one of Doc Ock's tentacles," O'Connell says, "and maybe the tentacle perceives things in the surrounds that we don't. So we've done some of that. I used the surrounds a lot in the music to add some depth. I'll have some ambient orchestra in there. Occasionally, I'll put some percussion things out there for effect, too."

As always, the final mix requires an intricate dance between score (composed by Danny Elfman and mixed by Dennis Sands), dialog and effects. "One of the cool things about Sam," O'Connell proffers, "is that unlike a lot of directors, he's not afraid to just let the effects tell the story sometimes, so there are scenes where Danny Elfman lays out and we tell the story with sound effects versus having it be a train wreck where they're both playing at the same time. That goes the other way, too. The effects get scaled back to let the music be heard. We've developed a way to look at a scene, decide who's telling the story and the emotion better—the music or the sound effects—and then make a choice. One of them might go away completely or play subliminally to the other one. Sam usually has an idea of what he wants, and I must say, having worked on two of these films with him, he's usually right." ■

Nuendo Arrives on the Dub Stage

For recording and playback on the *De-Lovely* dub stage, supervising sound editor/dialog and music mixer John Ross put together a total of five systems based on Steinberg's Nuendo Version 2.0. The playback system that fed 168 channels of predubs to Stage 2's Euphonix System 5 console comprised three dual-processor Athlon 2800 CPUs running on Tyan server motherboards with MADI and UAD1 DSP cards and two channels of SCSI 320; Matrox Perhelia cards drove the video monitors. A fourth Nuendo system was used for playback of digital video, and a fifth system, hooked up via Ethernet, was used for stage support, with editor Walter Spencer able to access raw material such as dailies and sound effects libraries.

"With Nuendo, you can build a system that has tremendous track counts," Ross comments. "And with the MADI interface, it's very easy to integrate with the console. Literally, everything we're hearing on the stage is hooked up to the core of the System 5 by just four BNC connectors. We're also running digital video that looks phenomenal.

"Because Nuendo uses a lot of the architecture in the host environment, it's all quite efficient," he continues. "Other workstations would require much more DSP power to do the same thing. Although I have the Nuendo systems running on high-end server machines, they're still essentially stock Windows XP machines. Steinberg's ASIO open architecture allows you to build systems that live within a computer environment with incredible input/output options. You can build enormously powerful systems in a small footprint."

On the dub stage, Ross, depending on the application, reached for both console and Nuendo functions. "The System 5 is, obviously, a very powerful console. The way I'm working with both it and Nuendo is to use the console in its more global scope to solve problems. It's the big lever and Nuendo is the tweezer.

"Nuendo is particularly useful for things like volume mapping. For example, where a piece of production sound we want to use gets too loud, I can go in and map it down. Because the volume graph is superimposed over the waveform, I can do minuscule volume moves that allow the sound to become far more intelligible. Or when someone turns his head off-mic, I can chase the sound very precisely with the built-in EQ.

"What's really great about all this," he concludes, "is that you can design very complex systems to your own specs, scaled to whatever size you wish. The tools are maturing now so that we don't need to work within a monolithic environment. Instead, we can democratize the process and build systems really customized to our needs. I find that a very exciting prospect."

Troy

—FROM PAGE 92

when planning the recording of *Troy*'s lengthy soundtrack. "On *Stroke of Genius*, we were getting through 73 GB a day," Rhodes notes, "so I figured by the end of *Troy*, I'd be up to a terabyte."

The solution, suggested by Botnick and DMT engineering project manager Brad Cobb, lay in recording the primary microphones and mixes at 96 kHz (run through Pacific Microsonics Model 2 192kHz processors for A/D conversion) and recording the spot mics at 48 kHz (through Genex converters). "Though I would have preferred to have done everything at 96, I'm confident the end result hasn't suffered," says Rhodes. The 96kHz tracks were actually split by the converters into dual 48kHz data streams in a dual-wire arrangement. However, Rhodes comments, "If those two signals ever become unlocked, you've had it."

The typical recording day saw Horner rehearsing the orchestra in the morning and then recording one of the film's longer cues, some of which run as long as nine minutes.

Following the morning's session, the orchestra would sometimes be let go early, at which time the music editor went to work. For editing, each take of the morning's cue was copied to the secondary Pyramix workstation located in the tape machine room adjacent to the control room. The data was transferred via a gigabit Ethernet connection, allowing the music editor, listening only on a pair of headphones, to assemble complete cues per Rhodes' session notes and conform them to video. Once completed, the editor simply transferred back an Edit Decision List (EDL) file for the cue, which was placed in the main Pyramix station's document library. The system could then play the completed composition through the control room console, retrieving the data from appropriate takes as notated in the EDL.

"It's faster and better for editing than using Pro Tools," says Rhodes. "In Pro Tools, the system edits each track as an individual file, which is quite cumbersome, while the Pyramix creates just a single-session file. The edits are available instantaneously and can be tweaked quickly and flexibly."

Not to say the engineer doesn't still find Pro Tools incredibly useful, particularly for overdubbing. Rhodes had two Pro Tools rigs at work. His "synth rig" held the synthesizer MIDI files, video, dialog and sound effects. Auricle MIDI data was also imported into the synth rig to act as a tempo map, simplifying the recording of pickups.

It was on the synth rig that, following

receipt of the editor's EDL back to the Pyramix, Rhodes would record overdubs in the afternoon, typically synthesizer parts and nonorchestral cues. "My synth Pro Tools rig was actually quite big: 48 in and 80 out," says Rhodes. "With James, on occasion I've been so tight for tracks, I don't take any risks anymore and give myself a great number of outputs. If James wants to layer with 48 tracks of overdubs, I'm covered. And for doing overdubs, Pro Tools is a joy to work on."

Pro Tools was also the way to go for Rhodes to produce his 5.1 mixes on a second such rig used solely for mixes. Even though Rhodes would, during recording, send 5.1 and stereo mixes to both the Pyramix and mix Pro Tools rigs late each evening, he would produce new 5.1 mixes recorded to the mix Pro Tools station to allow recording at a 48 pulldown rate (47.952 kHz), the same as would be used in the dubbing session. Combining both technologies proved extremely beneficial, says the engineer. "You have to run the edited master through the Pyramix just to hear it. So we're not delivering monitor mixes; we're delivering proper, thought-out, in-depth mixes that we haven't compromised over."

On completion of his nightly surround stems, Rhodes uploaded the mixes to a local Digidesign DigiDelivery FTP server for immediate download 5,500 miles away in Shepperton Studios' Korda Theatre in London. "Because we were on such a short schedule, we actually had to record the cues in order by reel and then provide the mixes immediately for the dub mixer in London the very next day. We finished recording on April 21, and the dub was completed on April 22, and they were print-mastering the following day. For us, DigiDelivery proved to be the fastest and the best solution."

Oddly enough, director Wolfgang Petersen never heard any of Horner's music until it was played during the dub session in London. "Wolfgang wasn't at any of the recording sessions because he was busy on the dub stage in England," says Rhodes. "He was terribly anxious, as you can imagine, but as we started to record the score, people became more and more relaxed, until, at one point, they just ran out of superlatives." And, to its credit, the creative combination of recording technologies helped. "I can't rave enough about Pyramix—it's just been a complete lifesaver. [Without it], we would never have been able to complete the score without dropping our standards." ■

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BY OLIVER MASCIAROTTE

Pedant In a Big Box: Part 3

A Glossary of IT Terms for the Audio Professional

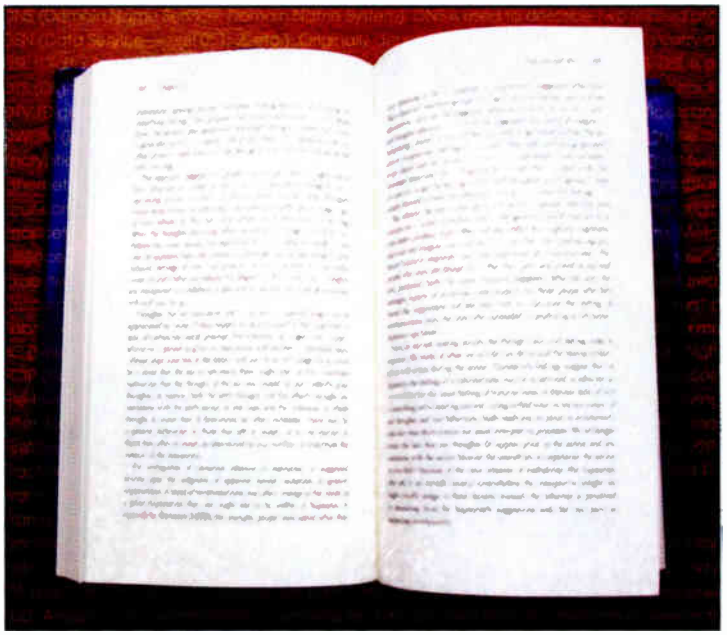

ILLUSTRATION: LIZABETH HEAVERN

In March 2004, *Mix* introduced its IT glossary for pro audio folks. The data dictionary continues this month. Italicized words were defined in past glossaries, some in upcoming installments.

HCA (HOST CHANNEL ADAPTER): the *IB* component that connects a processor to other IB devices. An HCA is really a *bridge* and must be able to communicate with both other HCAs and *TCAs*.

HEAD: the multiplicity of heads in a modern hard disk drive. Disk drives have anywhere from one or more "platters" of polished rigid disks made of aluminum or glass, coated with ferromagnetic material. Each side of each platter has a head, but all of the heads are mounted on the same positioning actuator assembly, so only one *cylinder* can be accessed at any time. The heads "fly" by ground effect at a height of less than 2 microns above the platter, which is about 1/50th the diameter of a human hair.

HEADER: essentially *metadata* that describes what is contained in the essence, *packet*, *frame* or file remainder that follows. Typically, it is the part of a packet or frame that indicates the start of the data *essence* or payload; also, a preamble. Headers usually contain metadata such as *addressing* and *error detection* information.

HiPPI (HIGH-PERFORMANCE PARALLEL INTERFACE): As the guys at CERN say, "It's not just for supercomputers anymore." Also known as GSN, or Gigabyte System Network, HiPPI is one of the original high-speed LAN technologies and interoperates with *Ethernet*, *fibre channel* and *ATM*. It is an *ANSI* standard for a *full-duplex*, low-*latency*, point-to-point interconnect providing 100 to 200 MBytes/second over a 50 twisted-pair copper *PHY* with a maximum length of 25 meters. A serial version uses a glass-fiber PHY at the same speed; future versions will scale up to 6.4 Gbits/second.

HOST,TO HOST: can be thought of as a *server*, though, strictly speaking, a host can be any computer connected to a *network*. Servers range from single-chip *microcontrollers* to 1U rackmounted boxes on up to a refrigerator-sized "big iron" that can simultaneously process millions of complex financial transactions per second.

HOSTING: the process of providing network services to other computers, such as providing Web, database or streaming services.

HOTSPOT: *nodes* or *APs* that provide *802.11*a/b/g services.

HRTF (HEAD-RELATED TRANSFER FUNCTION): mathematical models of the sound pressure that an arbitrary sound source produces upon an eardrum, either real or virtual. A monaural sound, when convolved or processed through an HRTF, can provide varying degrees of 3-D or phantom-image placement—also known as pseudostereophony. Because each person's body shape is different and each brain has adapted to that individuality, it's extremely difficult to create a single HRTF that produces convincing 3-D audio for a large sampling of people.

HTML: The basic *markup language* of the *World Wide Web*, HTML is a common way to deliver *hypertext*.

HYPERTEXT: To quote inventor Ted Nelson's *Literary Machines* (1982), hypertext is "...a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper." Hypertext is machine- and human-readable text that is linked in a nonsequential way. *HTML* is a common way to deliver hypertext.

IB (INFINIBAND): an ad hoc, high-speed *switch-fabric* architecture. The benefits of the InfiniBand specification are improved performance over older standards, ease of *management*, lower *latency*, built-in security and better *QoS*.

IEEE: The Institute of Electrical and Electronics Engineers, or "eye triple-ee" as it's called, is the AES of all things electronic. According to its Website, the IEEE is a standards-setting body responsible for making "engineering decisions consistent with the safety, health and

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welfare of the public, and to disclose promptly factors that might endanger the public or the environment." The IEEE is very aggressive in its standardization efforts, covering a broad range of technologies impacting every aspect of daily life.

IEEE 1394: the *IEEE* standard codifying Apple Computer's original *FireWire* standard. The original 1992 standard covers FireWire 400, a 400Mbps smart protocol over copper. The 1394b, or Beta standard, covers FireWire 800. In the newer standard, the copper *PHY* layer with two twisted pairs didn't change, but the transmission moved to dual *simplex* and channel coding changed to *8B10B*. Also, other PHY choices were added, including *UTP*, POF and glass fiber.

IEEE 802.NX: the 802 working group of the *IEEE* sets the standards for *data* networking. There are many individual committees addressing specific applications. These include:

802.1: *layer* 2 wired LAN standards including ad (link aggregation), Q (support for *VLANs*, or virtual *LANs*) and p (packet prioritization).

802.3: *Ethernet* or wired *LANs* including 10, 100, 1,000, 10GBase-T (twisted-pair), Base-F (fiber) and Base-C (cable).

802.3AF: POE (Power Over Ethernet) defines a standard way for network nodes to be powered over MDI, including 10/100Base-T.

802.11: wireless *LAN* standards including a (54 Mbps [18-22 Mbps *throughput*]), b (11 Mbps [6 Mbps throughput]), d (internationalization), e (enhanced *Media Access Control* layer for *QoS*) and g (harmonizes a and b).

802.15: low-power wireless *PANs* such as low-complexity *Bluetooth*, UWB-based high-rate PANs and *mesh networks*.

802.16: the Broadband Wireless Access Standard that provides secure, *full-duplex*, fixed wireless *MAN* service. Also known as WiMAX, throughput can reach 75 Mbps and does not require line-of-sight to operate. The 802.16e extension adds roaming outside of a "home" service area. Reach can extend from one mile at full speed to 30 miles at reduced throughput.

802.20: Mobile Broadband Wireless Access (MBWA); mobile, as in vehicular.

IETF (INTERNET ENGINEERING TASK FORCE): The IETF bills itself as a "large, open international community of network designers, operators, vendors and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet." In other words, it's the *Internet*'s standards-setting body.

IFCP (INTERNET FIBRE CHANNEL PROTOCOL): allows for carrying *Fibre Channel* traffic over *IP*-based networks. IFCP encapsulates and *packetizes* FC data in IP packets and maps IP addresses to individual *FC* devices, which breaks the distance barrier imposed by a direct-attached FC network. IFCP provides fault isolation.

ILEC (INCUMBENT LOCAL EXCHANGE CARRIER): a commercial *telecom* entity that was in business prior to the Telecommunications Act of 1996. ILECs include tiny regional providers such as the Eastern Slope Rural Telephone Association in Hugo, Colo., and the original RBOCs (Regional Bell Operating Companies): Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Bell, Southwestern Bell and US WEST.

IN-BAND: When an auxiliary signaling channel shares bandwidth on the same PHY as a primary channel, then that allocation of the total available bandwidth is referred to as in-band communication. In-band signaling is the opposite of out-of-band communication. In-band and out-of-band refer to the passage of management, control or metadata related to network resources such as SAN nodes and LAN servers.

INTERNET: the IP-based public network that was created by the Defense Department's DARPA (Defense Advanced Research Projects Agency) for remote command and control.

IP (INTERNET PROTOCOL): Residing in Layer 3 of the seven-layer OSI model, IP provides addressing and control of datagrams or IP packets, the containers or logical information units that all data essence resides. IP is responsible for providing "best effort" delivery from a sender's node to the receiver's address, along with fragmentation and possibly out-of-order re-assembly of datagrams at the destination. IP is part of the modular TCP/IP protocol that makes Ethernet such a success.

IPP (INTELLECTUAL PROPERTY PROTECTION): schemes to control the distribution and/or availability of a digital asset; usually integrated into such systems as watermarking and encryption.

ISCSI (INTERNET SCSI): an IETF standard providing carriage of SCSI commands via IP. ■

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PINK, SPARKS, among others

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Massive Attack, Liz Frazer, Prodigy

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A Literal Feast for the Ears

PRODUCT HITS FROM AES BERLIN

Springtime in Berlin has much to offer: sunshine in what is now being referred to as the new cultural center of the European Union. Inside Messe Berlin, the city's new state-of-the-art fairgrounds center for the 116th AES Convention (May 8-11, 2004), there was a slew of new product offerings. Most European countries still support a thriving state-owned network of radio and TV stations, and as in previous years, the broadcast community outnumbered attendees from the music recording, post and film industries, yet there was plenty to interest everyone.

There was ample activity surrounding the Euro debuts of new consoles, such as SSL's AWS 900, Studer's Vista 8 and the Lawo mc² 66—all of which premiered just weeks before at the NAB show. These were reported in the May 2004 *Mix*, so we'll focus on new launches at AES, listed here alphabetically.

Studer Vista 8

AMS Neve MMC Aquarius

AMS Neve (www.ams-neve.com) announced the MMC Aquarius Digital Console for stereo and 5.1-channel music production. It features new 24/96 DSP, updated operational features and a new I/O matrix capable of accessing more than 600 channel paths. High-resolution TFT meters and GUIs complement an enhanced monitor panel with automation control and displays. Also new: The Model 1073 DPD Preamp comprises a dual-channel mic preamp section from the vintage Neve 1073 Channel Amplifier; analog and optional DSD and PCM outputs are available.

The new Rosetta 200 2-channel AD/DA version of **Apogee's** (www.apogeedigital.com) much-respected 8-channel Rosetta 800 features standard 192kHz sampling frequency, sample rate conversion and MIDI control I/O. Optional X-Series (Pro Tools|HD and Mix) and FireWire expansion cards are also available, in addition to core Apogee technologies such as UV22HR and SoftLimit. Rosetta 200 features the new CODA Processing Engine—a new proprietary tool, Aptomizer, is said to maximize levels without increasing noise or distortion—and Intelliclock, full channel metering and S/PDIF I/O. List price: $1,995.

CB Electronics (www.cbelectronics.co.uk) spotlighted a new PEC/DIR controller that brings familiar, video/film-style button and paddle control to digital audio workstations. Currently, the new panel provides plug-and-play control of Digidesign's Pro Tools and Merging Technologies' Pyramix; other DAWs are in the works. Simple-to-use keystrokes enable setup for eight master groups, 16 stem assignments and 64 record tracks, with full track-arming and I/O switching. Future plans call for downloading/recalling system setup as metadata via a 9-pin serial port that can be saved with the DAW's project data.

Digital Theater Systems (www.dtsonline.com) introduced a new suite of PC/Mac-compatible encoders to create DTS soundtracks. Claimed to provide the only 96kHz solution for both DVD-A and DVD-V projects, two of the encoders are said to comprise the first commercially available solutions for creating 96kHz and 6.1-channel discrete DTS material. Two standalone encoders for Mac and PC are now shipping: a 48kHz/5.1 package and a 48kHz/5.1-channel and 96kHz/ES encoder unit. And the new DTS X Encoder for Apple's Xserve RAID provides for up to 99 different users on either Mac or PC platforms to remotely access and encode information via company Intranet and LAN, or the Internet.

Euphonix (www.euphonix.com) organized a fascinating demonstration of EuCon connectivity. A System 5 surface was controlling not only the firm's Core Engine and a Steinberg Nuendo DAW via the Ethernet-based protocol, but also the new 128fs Oxford Mix Engine from those talented Brits at **Sony Pro Audio Laboratory** (www.sonyoxford.co.uk), the group responsible for developing the Sonoma DSD editor/mixer and OXF-R3 console. The device provides up to 48 channels of EQ, dynamics and mixing, and features SuperMAC I/O; conventional PCM operation and Direct Stream Digital are supported. The Euphonix demo comprised 16 DSD channels feeding six buses controlled from the System 5.

Attendees were wowed by demos of **Genelec's** (www.genelec.com) much-anticipated 8000 Series studio monitors. The 8030A, 8040 and 8050A active bi-amplified trio (which replace, respectively, the 1029, 1030 and 1031) feature a new Minimum Diffraction Enclosure with rounded edges and curved front and sides. According to designer Harri Koskinen, "This specially shaped and very smooth surface is integrated with the enclosure. Its area has been maximized to achieve an astoundingly flat on- and off-axis frequency response." The new design provides a wide and consistent listening window while minimizing early room reflections and other colorations, an assessment that was confirmed during extensive listening sessions. Price per unit: 8030, $595; 8040, $1,150; and 8050, $2,050.

Merging Technologies (www.merging.com) unveiled the new OASIS (Open Audio System Integration Solution) Command Protocol to integrate its Pyramix DAWs with digital consoles. OASIS is similar in concept to Euphonix's EuCon protocol and provides a range of application-specific commands for communicating between console control elements and Pyramix DAW functions via a high-speed Ethernet port. "Integration should

BY MEL LAMBERT

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be based on a worldwide open protocol," stresses Merging Technologies' president, Claude Cellier. "It would then allow customers to select their preferred equipment based on what best suits their needs without being locked into a proprietary, closed, single-manufacturer solution." The company reported joint development agreements with Harrison and DiGiCo. Also shown was a Native version of Pyramix that runs on any laptop or desktop PC; prices start at $550 Euros (about $650 U.S.).

PMC's (www.pmc-speakers.com) new DB1-A and TB2-A studio monitors feature integral digital power amps. The self-powered monitors house Flying Mole (www.flyingmole.co.jp/en) digital Bi-Phase Fusion reference amp modules, each weighing just 1.1 pounds and supplying 160 watts into 4 ohms. Proprietary LF drivers and cabinet design, along with hand-built crossover electronics, are said to ensure ultralow distortion and compression characteristics, enabling consistent performance at high SPLs. Both units incorporate PMC's 5.5-inch and 6.7-inch LF drivers, respectively, with the same 1.1-inch soft-dome tweeter used in the company's larger mid-fields. Flying Mole also showed its range of compact DAD-M100pro digital power amps.

The new compact BB2 and BB2-J portable workstations from SADiE (www.sadie.com) connect to a host laptop or desk PC via a USB 2.0 connection. Designed into an injection-molded casing, the portable units are said to be simple to install and provide a cost-effective solution for location applications; the BB2-J version adds a jog wheel controller. Connections include analog and digital I/O, headphone and a stereo mic input. A simplified user interface is concentrated into a single window and allows recording/editing of up to eight tracks with level and pan controls, transport, clip selection and master output level controls. Full data interchange with SADiE Series 5 DAWs is offered. Preliminary pricing: BB2, $1,155; and BB2-J, $1,695.

A new XL A/D Converter Module for the popular XLogic SuperAnalogue Channel from SSL (www.solid-state-logic.com) runs from 44.1 and 192 kHz at 24-bit resolution, and provides a short signal path from preamp to ADC. The module offers two channels of conversion at multiple sample rates, including allowances for varispeed and conventional pull-up/down ratios; a single unit can be shared between a pair of XLogic Channels.

And, finally, **AES Standards** (www.aes.org) spotlighted practical uses of the AES47 standard for carrying digital audio over ATM networks at the BBC and Capital Group in the UK. Using off-the-shelf Asynchronous Transfer Mode hardware, both broadcast organizations are transferring multichannel AES47-compliant signals between remote studios and transmitter sites. ATM offers extremely low latency (around 1 ms), mixed sample rates and bit depths, and offers a routing structure that can be set up as one-to-one or one-to-many. The BBC, for example, is using 155Mbit/second ATM highways to carry up to 40 channels of AES-format signals in each direction; two unused pairs on each Cat-5 cable carry a backup stereo signal and a dedicated multirate sync reference.

In the formerly divided city of Berlin, it was heartening to see the worlds of broadcast and music/pro coexist so harmoniously—yet why so few live sound manufacturers decided to support the AES Convention still remains a mystery. Next year's European event will be held in mid-May in Barcelona, Spain. ■

Mel Lambert operates Media&Marketing, a consulting service for pro audio firms and facilities. Visit him at www.mellambert.com.

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ABLETON LIVE 4

In a major update to be announced at this month's NAMM show, Ableton (www.ableton.com) unveils Live 4, which brings full MIDI and DAW functionality to this acclaimed live music performance recording/sequencing software. Among a wealth of other features, Live 4 adds a host of virtual instruments with its powerful onboard effects and adds full VSTi and AudioUnits support, while still catering to the improvisational and live users. The program is slated to ship this month and is priced at $499; upgrades from earlier versions of Live are $119 download or $149 box.

GENELEC 8000 MDE SERIES

Designed to replace the 1029A, 1030A and 1031A, respectively, are Genelec's (www.genelec.com) new 8030A, 8040A and 8050A monitors. This slick-looking aluminum Minimum Diffraction Enclosure (MDE) yields large internal volumes with outstanding mechanical strength. The 8030A ($595) has a 5-inch woofer and ¾-inch tweeter driven by dual 40-watt amps. The medium-sized 8040A ($1,150) combines a 6-inch LF driver, ¾-inch tweeter and 90W amps for each driver. The largest model, the $2,050 8050A, uses an 8-inch woofer and a 1-inch tweeter powered at 150 and 120 watts. The 8030A Triple Play system packages the 8030A and 7050A LSE sub combo for $1,999. The 8030 LSE PowerPak 5.1 system ($4,600) includes five 8030As and the 7060A LSE sub.

PSP NITRO

Nitro from PSP (www.pspaudioware.com) is a multimode filter plug-in offering filter types derived from analog models. In addition, it features a phaser, bit crusher/downsampler, waveshaper and interpolated delay blocks. Other features include four sound processing operators, flexible internal routing, two LFOs with advanced sync possibilities, advanced MIDI control and an envelope detector with Adaptive mode and ADSR generator. Supported formats include VST/DirectX for PC; VST and AudioUnits for Mac OS X; and RTAS for PC. Prices: $149 stand-alone or $299 bundled with Lexicon PSP 42 and PSP 84 plug-ins.

DTS PRO AUDIO ENCODERS

DTS (www.dtsonline.com) unveils a suite of stand-alone Mac and PC audio encoders, capable of creating 96kHz and 6.1-channel discrete DTS soundtracks for DVD-A, DVD-V and 5.1 CD titles. New releases include a 48kHz/5.1 package and a 48kHz/5.1-channel, plus 96kHz/ES encoder. The 48kHz solution ($499) lets engineers create 5.1-channel soundtracks and includes 44.1kHz capability for encoding CDs. The 96kHz/ES package ($999) encompasses all of the capability of the 48kHz encoders but adds the ability to create 96kHz or 6.1-channel discrete extended surround DTS soundtracks. DTS has also developed the DTS X Encode facility encoder ($6,450) for Apple's Xserve RAID, which can handle up to 99 different mixing engineers on Mac or PC. It lets multiple users access and encode information via an Intranet or the Internet.

TC MASTERING 6000

Providing a scalable high-end mastering solution, TC Electronic (www.tcelectronic.com) releases a four-engine mastering processor based on its System 6000. Priced from $7,995, Mastering 6000's license-based structure allows it to be updated with optional processing tools, such as reverbs and delays from Reverb 6000, Massenburg Design Works Hi-Res EQ, BackDrop noise reduction and UnWrap advanced stereo-to-5.1 conversion. New algorithms in Mastering 6000 include a 5-band stereo and M/S processor with linear phase split-filter topology, an updated brickwall limiter, custom ADC and DAC filters, 5.1 multiband compressor/expander, 5.1 limiter and 5.1/stereo monitor matrix. Multiple processors can be networked, creating a pool of processing power, and units are controllable with the TC Icon remote or its Mac/PC software equivalents.

SNS GLOBALSAN

Studio Network Solutions' (www.studionetworksolutions.com) globalSAN is an iSCSI-based system aimed at facilities wanting to upgrade networking performance without investing in a full-blown Fibre Channel SAN or point-to-point WAN connectivity. An IP-based storage networking standard

protocol, iSCSI enables rapid transport of block-level I/O data over high-speed Ethernet. globalSAN works with both Windows and Mac OS X and is the first such product available to Mac users. Additionally, globalSAN supports up to 10Gigabit Ethernet and is Kerberos-ready for secret-key cryptography network authentication.

TASCAM CD-RW750

Tascam's (www.tascam.com) CD-RW750 rackmount CD recorder/player features 24-bit digital AD/DA converters, CD-R and CD-RW support, unbalanced analog I/O, S/PDIF digital I/O (optical and co-ax) and CD TEXT. In addition, the $679 unit has skip-free RAM buffer playback and three to 30-second digital fade-in/out. It can also be used as a stand-alone A/D converter or sample rate converter without the need to place a blank disc in the tray.

RTZ 9762 PREAMP

The Neve-inspired, 2-channel mic pre from RTZ (www.rtzaudio.com) features transformer balanced XLR I/O on Lundahl and Sowter transformers, along with hi-Z instrument inputs and unbalanced line outputs. The preamp has up to 75 dB of gain in 5dB increments; its line output amplifier provides an additional 10 dB of gain. Transparent muting logic provides silent audio switching/routing. Other features include 48V phantom power, polarity reverse, DI source select, output termination select and LED input/output metering. Price: $1,534.

AAS TASSMAN 4

Based on physical-modeling technology, Tassman 4 from Applied Acoustics Systems (dist. by ILIO, www.ilio.com) is a modular instrument and sound design tool that lets users create their own instruments. Enhancements in Tassman 4 include an expanded library with updated sounds and presets, audio input processing, improved

algorithms and a new performance mode to better organize sounds. Supported platforms include Windows 95, 98, ME, 2000, XP and Mac OS 10.2 and up. Price: $499. Tassman owners can upgrade for $99 or for free if purchased after January 2004.

RME MADI BRIDGE

The MADI bridge from RME (www.rme-audio.com) is a MADI patchbay, router, distributor, signal buffer and input selector for up to 16 devices that can freely connect to each other via six coaxial (BNC) and two optical input/output pairs. All inputs are routed unaltered to the desired outputs no matter what their sample rate—whether they're 56 or 64 channels or include special invisible control commands, out-of-spec data rates or violations of the MADI protocol. Eight front panel alphanumeric displays show the current signal source for every output. Two buttons per channel allow quick switching of any source, and any output can be fed by any input and even muted across several outputs.

ZERO-X BEATQUANTIZER

The Zero-X (www.beatquantizer.com) drum track manipulation tool proves that the beat goes on and tighter than ever. Featuring tools such as a slice processor, beat re-arranger, pattern controller processor, beat replacer, waveshaper and others, BeatQuantizer runs as a stand-alone program on a PC. It operates on a variety of file formats and can be used in tandem with any program that can produce compatible files. To make the process even smoother, there are time-stretching and crossfade tools to automatically mask the gaps and smooth the overlaps that result from the quantizing process. Supported file formats include .AIFF, .WAV, REX, REX-2, SF2 and ZGR. Export formats include LM4, REX, SF2, .WAV, ZEX, ZGR, MIDI SMF, MAP, TRK and FL Studio. Price: $250.

SOUNDELUX E250

Said to be a "more mellow" version of its ELUX 251, the Soundelux E250 (dist. by TransAmerica Audio Group, www.transaudiogroup.com) is optimized for close-in vocal recording. The cardioid-only mic is derived from the 251 except for a specially designed 1-inch diameter, 6-micron-thick gold-vapor deposited diaphragm and a different output tube and transformer. The E250 has a 20 to 18k Hz response, with a self-noise of only 9 dBA. The $3,000 mic comes in a wooden box and includes a power supply and custom shock-mount.

CONTOUR EZ-REACH KEYBOARD

Contour's (www.contourergo.com) EZ-Reach offers an intuitive computer keyboard layout designed to reduce motions that cause repetitive strain injuries. EZ-Reach has large, light, responsive keys; oversized, centrally located Caps, Backspace and Enter keys; and a full-function numeric pad. Its small footprint fits on all keyboard trays with room for the mouse. The keyboard works equally well on Sun and Apple platforms due to its USB and PS/2 compatibility. Price: $109.95.

NOVATION X-STATION 25

The USB-enabled X-Station 25 from Novation (www.novationmusic.com) is an 8-voice polyphonic hardware synth, MIDI interface and controller that has two phantom-powered mic preamps, 24-bit converters and either USB or digital S/PDIF outputs. The ASIO-compliant unit also features two multieffects processors and dedicated headphone and monitoring connections with separate controls. Price: $799.

SRS LABS DIGITAL ENCODER/DECODER

SRS (www.srslabs.com) releases an all-digital hardware matrix encoder/decoder for professional studio production, mastering and broadcast environments. The new CSE-07D digital encoder ($3,500) and companion CSD-07D ($3,800) digital decoder are functionally identical to the analog versions. The CSE-07D encoder offers AES/EBU inputs and includes analog outputs. The units can encode/decode up to 6.1 channels of discrete digital program material (left, right, center, LFE, surround left, surround right and surround center) for transmission over any consumer stereo medium.

PRODUCTION-MIXING-MASTERING WITH WAVES

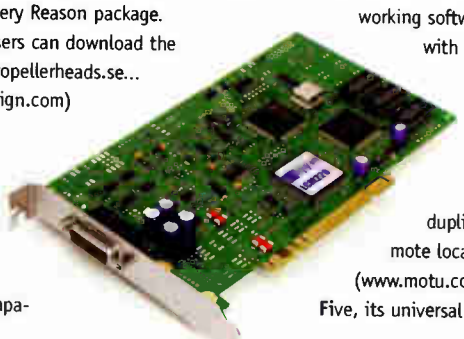
Now in its second edition, *Production-Mixing-Mastering With Waves* by Anthony Egizi is an intensive CD-based course designed to teach the user insider secrets for creating the best sounds in any field—music, film or broadcast—using Waves plug-ins. The $80 course includes the book, a 14-day trial of all Waves software and a seven-CD set of (Mac/PC) production files for use with Pro Tools, Logic Audio, Cubase, Nuendo and Sonar.

Correction: Alesis ProLinear 820 DSP

The review of the Alesis ProLinear 820 DSP speakers in the May 2004 issue was accompanied by a shot of early prototype versions of the speakers rather than the correct photo shown here. *Mix* regrets this error. The two-way studio monitors feature onboard DSP control to configure the speaker for almost any application via included PC software or the front panel control, shown in the photo. For more information about the ProLinear Series monitors, visit Alesis at www.alesis.com.

Upgrades and Updates

A major upgrade for the **Audio Ease Altiverb convolution reverb, V4,** includes tail lengths of 15 seconds or more, multichannel surround processing, ultralow latency, improved processor efficiency (G4 and G5), reverb tone control, automated switching of impulse responses and snapshot automation. V4 is available for Audio-Units and OS X versions of VST, HTDM, RTAS and MAS plug-ins, and costs $99. Visit www.audioease.com...**Dynaudio Acoustics** (www.dynaudioacoustics.com) is **shipping its BM Series subs.** The BM 10S ($1,595 MSRP) and BM 12S ($2,195) have 10- or 12-inch woofers and 200- or 250-watt amps...**Propellerhead Software now includes the ElectroMechanical Refill loops collection** with every Reason package. Registered Reason 2.5 users can download the collection free at www.propellerheads.se...**Digidesign** (www.digidesign.com) is now **shipping ReVibe** ($999), a full-featured mono, stereo and surround reverb plug-in designed for Pro Tools|HD Accel systems. The new plug is 96kHz-capable and features nine new reverb algorithms combined with a wide range of room reflections...**Digigram has released driver set v2.00g for its miXart 8 range** of multichannel sound cards, which includes miXart 8, miXart 8 AES/EBU and miXart 8 CN. Drivers can be downloaded from www.digigram.com...**M-Audio is shipping its new Nova cardioid condenser** microphone. The mic has a 1.1-inch diameter diaphragm, 14dBA self-noise and a 20 to 18k Hz (±1dB) frequency response spec. Visit www.m-audio.com...**Disc Makers** (www.discmakers.com) **cut prices on its Elite and ElitePro** automated duplication systems. In addition to the $500 to $1,000 price reductions, Disc Makers includes DiscJuggler networking software (a $490 value) with its Elite3 and Elite4 units, letting multiple users on a network simultaneously send projects to an Elite duplicator, even from remote locations...**MOTU** (www.motu.com) **releases MachFive,** its universal cross-platform sampler software for Windows. The $399 sampler supports all major Windows plug-in formats including VST, DXi, RTAS and HTDM, in addition to Windows host applications, including Pro Tools, Sonar, Cubase SX and Nuendo...**NoisePump Music from Firstcom** is a unique offering of production music created by veteran UK producer Aaron Harry. NPM will provide styles from orchestral to electronica in a user-friendly layout including long-form titles, commercial-length edits and submix versions. All titles can be downloaded directly from www.firstcom.com...**Nuendo CSi Master** is an interactive CD-ROM providing more than four hours of advanced tips, techniques and interactive movie tutorials for Steinberg Nuendo software. The CD features advanced topics such as loop recording, track automation, latency and timing, the VST instrument rack, surround and more. Price: $49 from www.courseptr.com...**Neutrik's** (www.neutrikusa.com) **C+ Series** offers the thinnest TS or TRS ¼-plugs on the market for the highest packing density, which is 15.88 mm. The all-metal C+ plugs are available with nickel or gold-plated contacts and nickel, black or velour chrome housings. ■



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Mastering 6000 is the latest addition to the prominent System 6000 family. Packed with a choice selection of precision tools for the mastering engineer, it is dedicated to the highest audio quality and the lowest production time. Mastering 6000 comes with the new MD4 5-band Compressor/Limiter, Toolbox 5.1 for mono, stereo, matrixed surround and 5.1 productions, and an enhanced Brickwall Limiter. All of the legendary algorithms from Reverb 6000 and other optional licenses can be added to Mastering 6000 if required. For more info about Mastering 6000, please visit www.tcelectronic.com/mastering6000.

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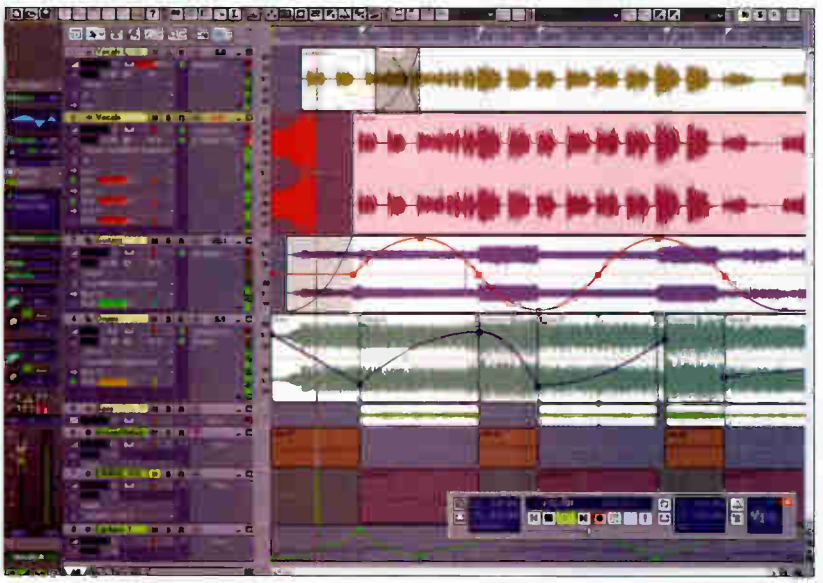
BY DANIEL KELLER

Cakewalk Sonar 3 Workstation

Revamped Interface With Strong Compositional Tools

Cakewalk's Sonar lineage, from Pro Audio 9 to Sonar, Sonar 2 and now Sonar 3, has been a powerful evolution. With the introduction of Sonar 3, the program's interface has added a number of significant improvements while maintaining the basics of what was already a well-designed work space. But beneath the surface, there are some notable improvements to the program's foundation that are powerful enough to change its functionality.

Sonar 3 (the Producer version, including Ultrafunk effects, full Lexicon Pantheon reverb and other processors, is priced at $719; the Studio version is $479) boasts a whole new audio engine that, unlike past versions, is now robust enough to allow for a normal workflow without interrupting the audio stream. Inserting tracks, cutting and pasting, punching in and out, dragging and dropping loops and even tweaking DSP can be done in real time. There is the odd audio glitch with some processor-intensive actions, but it's still a vast improvement. Unfortunately, you still can't delete a track while playing or recording; for nonkeyboardists like myself who rarely nail a first take, this is a minor nuisance. A reasonably acceptable compromise is to set looping points and use Sonar's Layered Takes function, though then you're faced with the task of listening through multiple takes to identify the best one.



Sonar's Track view displays an overview of track parameters alongside the Arrange window, allowing fast modification without scrolling through the Mixer window.

A FRESH COAT OF PAINT

One of the nicest touches to Sonar 3 is the Track Inspector, a very useful feature found in some other DAWs. Select a track and you've got an overview of its parameters—essentially, a single channel from the Console view—shown to the left of the Track view. This allows fast access to tweak that track (or bus and mains) without having to locate and/or scroll to it in the Mixer window. You can also lock the Track Inspector to always display a specific track/bus/main, regardless of track selection.

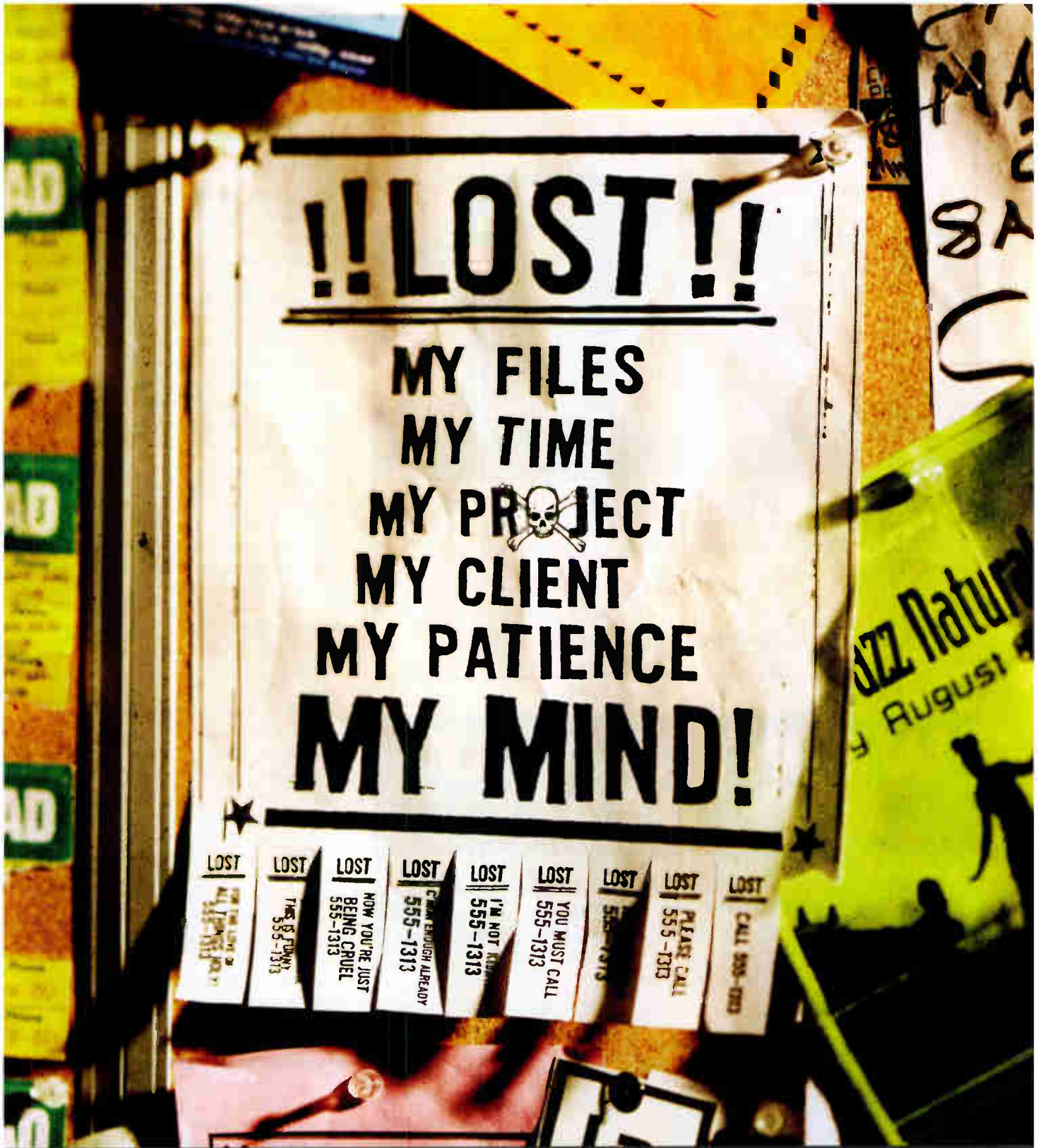
The Console view, Sonar's virtual mixer, is also vastly improved. The mixer can be tweaked to show or hide functions on a per-channel basis, meaning that you only have to look at EQs and aux sends on the channels that you're actually using them on. (The EQ section is global and applies to all visible audio tracks; sends are dynamic and displayed on a per-channel basis.) Another nice touch is the ability to drag and drop effects plug-ins between channels and buses or bypass plug-ins on the fly.

One of the more notable upgrade features is the new flexible busing architecture in which buses can be inserted virtually anywhere in the chain on the fly, and their outputs freely assigned or reassigned by clicking on a drop-down menu. It's easy to create some fairly complex configurations using FX sends and having buses feed other buses; thankfully, Cakewalk's engineers seem to have idiot-proofed this complexity by disabling the option to assign a bus back into itself, thereby avoiding potentially loud and embarrassing feedback loops.

One odd by-product of the new busing architecture is the removal of FX inserts on master output buses. For example, in V. 2, you could insert a compressor into the outputs of an audio device. Now, you need to create a bus to do this. It's not a big issue because it probably uses no CPU overhead, but given the potential complexity of the new busing scheme, I have to wonder if this was really necessary. Cakewalk claims that this is functionally no different, in that the busing scheme is infinitely flexible, hence you simply add another bus if you want to insert an effect on the main outs. Maybe I'm just splitting hairs here, but personally, I'd prefer a master insert, even if only as a visual representation. The program's busing structure is complex enough already without having to add additional buses to accomplish this very commonplace task. Perhaps the inclusion of a graphical display of the buses would make it easier to see which channels/buses go where. If several are being used in a chain, the only way to see how they link is by following each one in turn; i.e., A goes to C, which goes to F, which goes to main out A.

Cakewalk has never been a slouch in its MIDI implementation, and Sonar continues to add to an already deep feature set. Selecting a MIDI channel gives you quick access to all essential parameters (channel, bank, patch, etc.) and right-clicking opens Sonar's keyword-searchable patch browser. The advanced MIDI routing features allow you to easily experiment with layering multiple devices to create some pretty dense multilayer sounds.

Another nice touch is MIDI Groove Clips; essentially, the MIDI equivalent of audio loops. Once you've defined a clip, you can slice and dice it, unroll multiple repetitions onto a track, set it to follow the project's pitch and generally work with it much like



an audio loop. For those who lean toward the aesthetics of their worksurface, Sonar 3 boasts customizable color schemes, a feature some other programs have offered for some time.

VERY SUITE, INDEED

The Producer Edition of Sonar 3 includes a full suite of Ultrafunk Solitus effects, all with DX automation. Included is an assortment of dynamics processors comprising a rather nice multiband compressor, delays (including a very usable tempo sync function), phase, wah and modulator. Also included is the Ultrafunk 6-band parametric EQ, which has one of the nicer takes on a graphic interface that I've seen recently. In addition to the typical EQ plot window, you can display single- or multiband modes or each band in its own window.

Also included in the Producer Edition is the full version of Lexicon's Pantheon reverb plug-in. (The Studio version of Sonar 3 bundles a light version of Pantheon.) Certainly, reverbs in general are pretty subjective, and no 'verb is great for everything. The Pantheon definitely has that lush trademark sound you'd expect from Lexicon, and is fabulous for vocals, pads and plenty of everyday uses.

Sonar 3 bundles a lot of other nice add-ons, making for an exceptionally wide-ranging composition and production suite. Sonar 3 also includes MAZ's VSampler DXi 3.0 virtual sampler, and the Producer version includes two full disks' worth of samples. While VSampler doesn't claim to be in the same league with hard disk streaming samplers like Tascam GigaStudio or Steinberg HALion, it does accept most popular sample formats (including GIG, .AIFF, Akai and Soundfonts) and offers quite a bit of functionality. Sonar also includes a nice assortment of other DX instruments, including much of what was already in the previous update: Cyclone, Dreamstation, ReValver and Roland's Virtual Sound Canvas.

SOMEONE'S LISTENING

It seems like the folks at Cakewalk paid attention to their users. A number of issues, ranging from irksome to infuriating, have been addressed in this update. Cross-compatibility with the rest of the audio world is an area in which Sonar has lagged somewhat in the past, and this has probably kept a number of high-end users away. Thankfully, Cakewalk began to address this in V. 2 updates and even more so in V. 3. Importing and exporting of multiple formats (at any sample rate) is supported, including .AIFF, OMF and Broadcast .WAV, making it easy to move projects to and from Pro Tools, Nuen-

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Radial J48 Active DI - suggested list $199 US
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Radial X-Amp Re-Amplifier - suggested list $199 US
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Radial JPC Stereo DI - suggested list $199 US
Designed specifically for PC sound cards, DVD players and all those cool consumer devices that cause nothing but havoc, the JPC is 100% transformer isolated to eliminate nasty ground loops and equipped with a 48V active drive circuit for long cables. Easy to use. Great sounding. Indispensable.

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do, Cubase, Digital Performer and Logic. Particularly with last year's demise of Logic for Windows, this has the potential to win Sonar a number of converts. Sonar 3 also supports ReWire and VST.

For V. 3, Cakewalk's engineers have clearly been working closely with a number of hardware manufacturers, as this update boasts deep integration with control surfaces from Mackie, Tascam, JLCooper, CM Automation, Edirol, Radikal Technologies and a couple of generic implementations with which to roll your own.

As with previous versions of Sonar, the documentation is first-rate. Writing manuals is a difficult and thankless task, and Cakewalk is to be commended for placing a priority on excellent and thorough documentation, and maintaining a 600-plus-page printed version, as well as copious onscreen help files.

Sonar's Console view can be configured to display or hide functions on a per-channel basis and allows dragging and dropping of effects plug-ins between channels and buses.

A MAJOR PLAYER

It's always difficult and inelegant to compare DAWs, but with the field of Windows-based options as narrow as it is, comparisons are inevitable, particularly with Cubase. Both programs have always had their strong suits, and, in truth, they've become increasingly similar in many ways.

While the layout of Cubase is arguably still a bit more conducive to production and mixdown tasks, Sonar's prowess as a composition tool is truly hard to match. Auditioning, dragging and dropping loops and providing groove clips from the File Explorer make this an invaluable function as a writer's tool, and one I wish all DAWs would implement.

I've listened patiently for many years to loyal Cakewalk users touting the program's superiority, and I'll admit I was never particularly enticed. I wanted to like it, but earlier incarnations of the program always struck me as unwieldy and less than intuitive. So it's no small statement to say that, with the introduction of Sonar 3, Cakewalk has truly won me over.

Cakewalk, 617/423-9004, www.cakewalk.com. ■

Daniel Keller is a writer, musician and audio engineer. He is presently working on a Chinese food delivery plug-in, but an hour later, it needs more CPU power.

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BY ERIK ZOBLER

SSL XLogic Channel

An XL 9000 Channel Strip in a Rackmount Unit

Solid State Logic consoles populate many of the top studios in the world. Now, the company offers every studio that SSL sound for a fraction of the cost of one of its consoles. Taking the electronics from one channel of its SuperAnalogue XL 9000 console, SSL has added a couple of extra features and put it into a 1U rackmount unit.

WHAT IS SUPERANALOGUE?

SSL calls its gear SuperAnalogue because this unit's noise and frequency specs exceed the limits of current PCM digital recording, even when operating at 192 kHz/24-bit. Looking under the hood, I found surface-mount technology and high-quality components. The preamp/input stage is transformerless and very low-noise. Multiple DC servo circuits replace the need for capacitor coupling between each stage in the strip and are largely responsible for the low-frequency response down to 3 Hz. DC servos also minimize the phase distortion inherent in capacitor-coupled designs. The upper bandwidth of 200 kHz is achieved by component choice, circuit board layout and design. High headroom, low distortion, extra attention to transient signal response and custom oxygen-free cables are also touted as reasons for the SuperAnalogue nomenclature.

SEND IN THE CLONES

The XLogic Channel is a clone of the XL console channel strip with a few extras. The XLogic Channel has two inputs that feed the input stage: one in the rear of the unit and the other on the front. The front input uses a ¼-inch XLR jack with a switch that selects the mono instrument input while raising the input impedance to 1 Mohm, which won't load down guitar pickups.

The output section allows for ±20 dB of gain. It includes a seven-segment LED meter that can be switched to show the channel's output or the signal level after the input section. Another LED indicates when the optional A/D card is locked to an external clock.

The original 9000 console has dual-purpose knob/switches in the dynamics section to control RMS/peak sensing, fast or normal attack, and gating or expanding. The XLogic Channel uses separate dedicated buttons and level controllers for these parameters. The Filters knobs have also been changed from the variable fader with a click-off position to a sweepable fader and a separate on/off button. I prefer the new format, especially with the filters, because it's easier to switch them out while keeping your previous settings. On the console, you may have to pull the knobs to see how they are set. The switches on the XLogic channel have LEDs that make it easy to see which modes you are in.

The 4-band equalizer is switchable between the SSL's G and E Series EQ curves. The differences deal with the Qs of the low-mid and high-mid bands and whether or not the LF and HF bands have some overshoot/undershoot. These are the classic SSL EQs. If you've worked on an SSL, you already know how they operate and sound.

The number of routing options is unparalleled. Depending on how you engage the switches, you can completely control the order of signal processing: You want the filter first, then the EQ and then the dynamics? No problem. The XLogic Channel also allows the EQ and filters to be placed in the dynamics sidechain for frequency-dependent compression and/or gating/expanding. All of these processing chains are easily engaged with a press of a button or two. Key input allows external control of the dynamics sidechain, and a Link button can be used with multiple units for stereo operation.

HOW TO GET THAT XL SOUND

I used this unit to record guitars, vocals, horns, bass, kick and snare drums, with and without processing. The mic preamp was particularly nice on vocals. With up to 72 dB of input gain, it also worked well with low-output ribbon mics. This excellent-sounding piece of equipment never disappointed me.

I noticed the transparency of the filters and dynamics when they were switched into the circuit. There's almost something magical about the way the SSL compressor works; nothing was lost in translation from console channel strip to the rackmounted version.

The input stage does not have a traditional line input setting. On the XLogic console, the line input uses a ±20dB amplifier. Like the console, the XL Channel has a hi-Z switch that brings the input impedance of the XLR inputs from 1.2k ohms to 8.45k ohms, but the minimum amount of gain that can be applied at this stage is 6 dB. Translation: If you feed a line-level signal into the input stage without engaging the pad, then you will be adding 6 dB of gain. To set the input to unity, you have to select the pad (fixed at -18 dB) and then set the input gain to +18 dB. This seems like a convoluted way to achieve input unity gain at the cost of increased noise, but SSL claims that even under these circumstances, the unit has an equivalent input noise of less than -90 dBu. SSL affirms that by selecting the combination of the hi-Z input low-gain settings on the mic pre, the circuit will perform as well as the normal console line input. The channel strip set to unity will accept up to +27 dB without any more noise or distortion than you would get from a normal line input. When I tested this unity gain setup, I could not hear any increase in noise.

I'LL TAKE TWO

Some people might find the XLogic Channel's price of $3,600 a bit high, but when you consider that this includes a mic/instrument preamp, high- and lowpass filters, a compressor, gate and an equalizer (with two different characteristics), you realize you're getting a lot in one box. Everywhere I took this unit, people were eager to find out if the XLogic would deliver the SSL sound—and it lived up to its name.

Solid State Logic, 44/1865 842300, www.solid-state-logic.com. ■

Erik Zobler has worked on more than 200 album projects, but is most proud of mixing the Sony/Revolution film Gigli. *You can reach him at ezobler@socal.rr.com.*

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Antares Auto-Tune 4

A More Capable, Musical, User-Friendly Pitch-Fixing Tool

The world's most ubiquitous pitch repair tool just got better. Antares Auto-Tune 4 retains all of the great things you can do—or overdo—with past software versions, while adding a vastly improved user interface, 192kHz capability, a more musical vibrato and more. The tried-and-true ways of setting up the interface, including key and scale choice, input type, retune and tracking, are still the way all users should handle the interface. However, Antares has added new toys that make the interface much more fun and musical.

Auto-Tune's virtual keyboard lets users set pitch-correction parameters.

SO WHAT'S NEW?

Starting with the simplest changes, the Options box now offers selectable graphics colors. This is in response to color-blind users (true story) who had trouble viewing the default colors in past versions. Next, A-T 4 gives you the option of altering the behavior of the knobs. Do you prefer a vertical, horizontal or radial mouse stroke to change parameters? No problem—it's just an option away. The Custom Cursors option lets users turn cursor shapes on or off in the Pitch Graph display in Graphical mode. The last new option, and a very welcome one, is the ability to choose up to 20 levels of undo.

AUTO MODE ENHANCEMENTS

Auto mode now offers a virtual keyboard (a blast from the past) that allows the user to be extremely selective about what does and does not get pitch-corrected. You can set the keyboard to choose the note in all octaves or just the notes you "play." Notes can also be set via MIDI; the onscreen keyboard reacts as notes are played.

The Vibrato mode adds a lot of new functionality. The depth, rate and delay options of old are replaced by rate, variation, onset delay, onset rate, pitch, amplitude and formant. Variation adds a random character, and onset delay sets the amount of time between the beginning of the note and the start of the vibrato. Onset rate sets the amount of time between the end of the onset delay and the point at which the vibrato reaches the full amounts set in the pitch, amplitude and formant settings. Pitch and amplitude control the amount of pitch and amplitude variation in the vibrato. Lastly, formant sets how the timbre of the vibrato changes as it develops.

The mysterious Improved Targeting button uses the theory of Stochastic Optimal Linear Estimation (whew!) to help Auto-Tune 4 differentiate between vibrato and intentional pitch change. In the center section, there are now Set All, Remove All and Bypass All buttons that make for quick note-selects and deselects. Lastly, just under the meter is a Hold button that lets you freeze the meter in time to check exactly how much pitch change is taking place.

STREAMLINED GRAPHICAL MODE

The Pitch Graph display has increased a whopping 22 percent and new streamlined navigational controls make it much easier to get your audio sample centered while working. There are new cursor picture displays at the top of the window and some welcome new tools. The Scissors tool allows you to go in and snip out a section of the sample for special treatment, while the Magnifier and Hand tools make it much easier to blow up and move the window within the interface. Vibrato scaling increases or decreases the amount of an existing vibrato while preserving its original shape and character.

THE EARS HAVE IT

I tried Auto-Tune 4 on a variety of sources, both vocal and instrumental, with great results. The Vibrato mode is much improved and more random, with the Formant option definitely making it more believable. Improved targeting is a nice addition and, as with all parameters in Auto-Tune 4, it seems to work better on some sources than others. What I like most about A-T 4 is that you have to use your ears.

The most apparent improvement in A-T 4 is the interface. In past versions, Graphical mode has always been less than intuitive; this is no longer the case. The navigation is much more flexible and the bigger size makes microtweaking a more pleasant task. The layout and new tools make for improved workflow, and the ability to reverse tasks through multiple layers of undo makes me wonder how I ever got along without it.

The virtual keyboard, and its ability to isolate pitches targeted for correction, is a wonderful addition. It makes Auto mode a breeze to use and the outcome much more musical. The ability to isolate notes as played, or in all octaves, is brilliant.

THE FIX(ER) IS IN

It's clear that Antares has been listening to its users and watching its competition. From the changeable graphics colors to the expanded vibrato options, added tools, variable knob controls and streamlined navigational controls, Auto-Tune 4 is vastly improved. The term "clunky" no longer applies—especially in reference to the Graphical mode. The manual is very well done and highly recommended reading. Even though the UI has risen to a new level of user-friendliness, it's nice to know what some of the more mysterious parameters actually do.

For anyone using pitch correction in production (is anyone not?) or wanting to create *the* next pitch-based effect, Auto-Tune 4 is a must-have upgrade. Prices: OS 9/OS X (TDM), $599; (MAS/RTAS/VST), $399; and PC (RTAS/DirectX), $399. Various upgrade paths are available.

Antares, 831/461-7800, www.antarestech.com. ■

Kevin Becka is a closet auto-tuner and technical editor of Mix.

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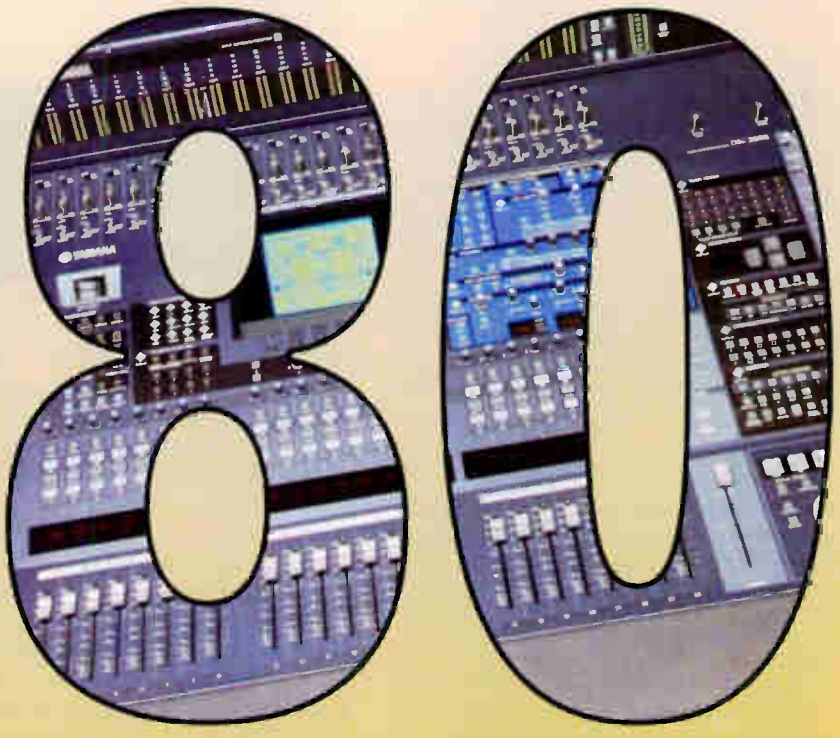

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Z-Systems Z-Qualizer Digital EQ

Bringing z-Q2 and z-Q6 Quality Into an Affordable Unit

The Z-System's Z-Qualizer is a half-rackspace, digital 2-channel mastering-grade equalizer with AES/EBU digital I/O only—no analog. Each channel in this very fine-sounding unit has high and low shelving, plus four overlapping fully parametric bands. As you'd expect, you can link the two channels for stereo operation or set them individually.

The Z-Qualizer uses the same algorithms as Z-Sys' higher-end z-Q2 and z-Q6 models: It was designed to bring a quality product to a moderate price point. Therefore, it's a fairly spartan unit, with a one-line LED and no metering or on/off switch. You just have to trust that its 40-bit engine is not going to overload internally, and, in fact, I wasn't able to distort it audibly; all systems are go when the signal LED tells you it's receiving a valid digital input.

Apart from the AES/EBU digital XLRs (the test unit was screened with the in and out labels reversed) and a connector for the unit's wall wart power transformer, the only thing on the back panel is MIDI I/O for receiving patch changes or loading and dumping the unit's 99 storage slots. There's no word clock in or out; the unit clocks to an incoming 16- or 24-bit AES/EBU (or S/PDIF) signal at sample rates up to 96 kHz. I ran it at 24-bit/44.1 for this review.

One nice value-added feature is the Z-Qualizer's ability to encode and/or decode M/S stereo signals. Among other applications, this lets you EQ and adjust the mid-signal independently of the sides in an M/S recording. But the most interesting application is using it as an effect, playing around with the width of a stereo mix by adjusting the difference signal's level and timbre.

EQUALIZING WITH ROOM TO GROW

Using the Z-Qualizer is simple, and as it is a scaled-down high-end unit, it doesn't present you with the usual frilly set of controls. You can bypass the whole unit, but there aren't individual on/off switches for each band—you have to spin the knobs and zero the controls to make an A/B comparison.

Unlike their analog counterparts, digital equalizers' controls aren't continually adjustable, although the fact that I heard no zippering implies that the Z-Qualizer interpolates between settings. It allows progressively fine adjustments as you get closer to unity gain. When you're within 12 dB (the maximum boost), for example, the increments are 0.1 dB; by the time you get to the -20 to -50dB range, the increments go up to 3 dB.

The same business applies to the Q and center frequency settings, although the latter is calibrated evenly in ⅓-octave steps from 28 to 20k Hz. This is a whole step, of course, and that's pretty surgical. Despite being a little closely packed, the stepped encoders are set to make very precise adjustments easy. Moving the gain encoder from 9 o'clock to 12 o'clock only increases the boost about 1.2 dB. I did not hear any glitches when moving the controls.

This makes sense for a mastering equalizer, although the other side of the coin is that it takes a lot of twisting to make broad adjustments. I timed it taking just under five seconds to go from +5 to 0 dB as fast as I could. A nice addition would be velocity-sensitive encoders or perhaps encoders that you can push to jump larger increments, as would some kind of zeroing command.

Bear in mind that any minor ergonomic considerations are completely overshadowed by the Z-Qualizer's sound quality. Z-Sys is known for its attention to digital details, so it's no surprise that this equalizer sounds so transparent and smooth. The bitscope in Metric Halo's SpectraFoo confirms that it actually truncates to the number of output bits you've set, with or without dither.

If you're going to 16-bit/44.1 or 48, then you can use one of two types of POW-r dither instead of Z-Sys' "carefully randomized floating-point dither." You can also dither to 24 bits from the internal 32-bit floating-point processing.

A STAR IN THE STUDIO

The first thing you notice about the Z-Qualizer is that you don't notice it: It's extremely transparent. You can even use it on complicated sounds like sampled strings without hearing any phase problems at all. I ran several mixes through the unit in a digital send/return loop from a Pro Tools system, trying everything from typical mastering EQ shifts to precise radical surgery (reducing an obnoxious, dominant clave part from a coincident stereo recording). It has none of the hard plastic sound you hear in some of the less-distinguished EQ plug-ins, and at subtle boost settings, I found myself looking at it to make sure it wasn't bypassed.

The closest equivalent plug-in to the Z-Qualizer is the Linear Equalizer in Waves' Masters Bundle, which sounds similarly excellent. For a true comparison, I ran the mixes through the analog equalizers in a pair of Millennia Media STT-1 channel strips, well known to be among the best available. The outcome was very interesting: While the analog EQ does have a pleasing, round sound in the lows through upper-mids, the difference was more subtle than expected with the Millennias in their solid-state rather than tube settings. I didn't prefer one processor over another to bring out air in a mix in the upper frequencies; neither of them was harsh nor unpleasant.

Despite the simplistic nature of the interface, the Z-Qualizer sounds outstanding and its M/S features are really useful. At $1,200, this is one to check out if you're looking for mastering-quality digital equalization without spending a king's ransom.

Z-Systems, 352/371-0990, fax: 352/371-0093, www.z-sys.com. ■

Nick Batzdorf, an L.A.-based music and audio technology writer/composer/engineer/producer, has most recently been writing music for on-air promotion.

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A Designs Audio MP-2r Microphone Preamplifier

All-Tube Stereo Unit Delivers Creamy Concoctions

The A Designs Audio MP-2r ($2,650 list) is a higher-gain version of the company's MP-2 tube preamp, adding an additional 14 dB of gain capability to the latter unit. A Designs Audio markets the all-tube MP-2r as a ribbon preamp (hence the "r" suffix in the model number). While the unit's input impedance (specified to be greater than 100 kilohms) is plenty high for use with ribbons, such low-output mics often require more than the 60dB maximum gain that the MP-2r delivers. That said, this great-sounding mic preamp has far wider applications than just with ribbon mics (and, in fact, also provides defeatable phantom power to drive condensers).

MONO A MONO

Despite its designation as a stereo unit, the MP-2r employs a dual-mono topology and control layout. Each of the unit's two independent channels are served by a continuously variable level (attenuation) control and polarity, phantom power and output impedance switches. The latter switch's 600-ohm setting reveals the preamp's broadcast origins. I found the alternate 10k-ohm setting provided more presence, transparency, detail, depth and output level for recording applications, although the 600-ohm setting was useful for producing a pillowy electric bass guitar tone.

Each channel also sports a beautiful, backlit VU meter. The meter's 0VU reading is calibrated to 0 dBu, which is too low for many direct-to-disk recording applications. The MP-2r's meters were pegged much of the time while recording various sources straight to MOTU's Digital Performer, even with my Apogee Rosetta's calibration trims boosted to the max to +4dBu = -10dBFS reference. (Less output level was required from the MP-2r to attain 0 dBFS.) On tracks in which a compressor also supplied makeup gain, I could lower the MP-2r's output level that much more so that the meters were not pinned nearly as often. But dynamics processing and low preamp gain are not always desirable, and, clearly, the VU meters are not set up to handle the unit's maximum output level of +22 dBu nor do they indicate remaining headroom. A beefy power switch and large, red power status lamp finish off the MP-2r's attractive front panel.

The unit's rear panel sports a separate Neutrik combo input jack and balanced XLR output jack for each channel. The combo jack accommodates either balanced XLR or unbalanced ¼-inch phone jack input, the latter for direct injection of a musical instrument. Thankfully, all I/O connectors latch. An IEC power receptacle mates with the supplied detachable AC cord.

The MP-2r's well-ventilated, 2U rack-mountable chassis houses Jensen input and custom-wound output transformers; 6NI-P and EF86 tubes (one each per channel) sweeten the audio path. The MP-2r's frequency response is stated to be 20 to 60 kHz, with no tolerances given.

STRAIGHT TO THE TEST

I A/B'd the MP-2r with my Universal Audio 2-610 mic preamp on male lead vocals using an AKG TLII condenser in omni mode. The MP-2r's output impedance was set to 10 kilohms and the 2-610's gain control to +5 dB. The MP-2r had a smoother frequency response and produced more detailed transients and more prominent highs and bass frequencies compared to the 2-610, while the 2-610 lent more presence to midrange frequencies. Both preamps sounded extremely lush, but the MP-2r was creamier while the 2-610 had more texture.

Next, I plugged my '62 Strat into a Roland Micro Cube guitar amp (set to a slightly overdriven Classic Stack amp model) and miked the cabinet with a Coles 4040 ribbon mic routed to the MP-2r. The 4040 has a huge proximity effect, necessitating placing it a full three feet from the cabinet to get enough definition. The MP-2r and Coles 4040 delivered a warm, smooth and full-bodied rock guitar sound. Substituting a Royer R-121 ribbon mic for the 4040 revealed a little more of the source's crunchy midrange texture while remaining exquisitely warm. The MP-2r contributed a little noise to the result with both ribbon mics (the preamp's EIN is rated to be -118 dB), but it was only discernable when the track was soloed.

Next up was a trumpet miked 39 inches away with a Coles 4040 on-axis. The MP-2r handled the high SPL without distorting. The track sounded fabulously warm and smooth. In fact, it was one of the best timbres I've ever captured while recording trumpet.

Finally, I recorded electric bass guitar plugged directly into the MP-2r's combo jack. This was my favorite application for the MP-2r. The preamp provided plenty of gain to record a DI'd passive instrument directly to disk. The preamp's 10k output impedance setting gave deeper bass extension and more presence to the sound than the 600-ohm setting. Using the 10k setting and compressing the preamp's output with my Universal Audio LA-2A, the sound was absolutely gorgeous. The MP-2r de-emphasized fret noises and provided a rich, yet nicely focused, sound with a very deep bottom. In a subsequent A/B comparison with my Aguilar DB 900 tube DI, the MP-2r produced less midrange presence, more pronounced upper-bass frequencies and a more saturated sound on DI'd electric bass guitar. Both units sounded great—just different.

A SMALL WISH LIST

I hope that A Designs Audio recalibrates the MP-2r's VU meters to a higher reference level because the current fixed setting is the only substantial flaw in an otherwise wonderfully executed design. Of course, this has no influence on the MP-2r's smooth sound, which ultimately makes this preamp a worthy addition to any pro studio.

A Designs Audio, dist. by TransAmerica Audio, 702/365-5155, www.transaudiogroup.com. ■

Mix contributing editor Michael Cooper is the owner of Michael Cooper Recording, located in beautiful Sisters, Ore.

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Snapshot Product Reviews

SABINE SWM7000 SERIES
Smart Spectrum Wireless System

Wireless technology has turned into a cat-and-mouse game, as once-clear frequencies become more crowded or obliterated and the FCC keeps turning over whole spectrums to non-audio uses such as cellular phones and digital broadcasting. After abandoning VHF, the 450- and 900MHz UHF bands seemed pretty safe, but with more encroachment, a number of companies have sought haven in the spacious skies of the globally accepted 2.4GHz band.

One such example is Sabine's SWM7000 Series, a true-diversity, 2.4GHz system that allows 70 units to operate within a single location. This alone would make the unit notable, but the system also includes onboard FBX Feedback Exterminator®, compressor/limiter, intelligent de-essing and Mic SuperModeling™ digital mic capsule emulation. Also, the receiver stores/recalls up to 10 presets of all parameters for each channel for quick setups or on-the-fly changes during a performance.

The front panel has a lot more than the minimal controls found on the usual receiver, but this is no typical receiver. Each receiver channel has a large LCD showing status of RF signal, transmitter battery, audio signal strength, compressor gain reduction and displays for FBX action, front panel lock, edit parameters, mute, de-essing and more. The hardwired controls (FBX setup, mic model select, de-ess cut, compression ratio/threshold/attack, RF channel select, output level and program save/load/recall) are shared; a quick tap assigns them to either channel. Operation is familiar and fast, and you always feel in control with the SMW7000.

The back panel says a lot about the SWM7000. Each channel has ¼-inch line- and XLR mic-level outs, a threaded antenna connector (with adapters for front or rear mounting) and a DIP switch for setting configurations such as the ⅓ or 1/10-octave width of the FBX filters. Also standard are RS-232 and USB ports that connect to your Windows 2000/ME/XP PC via included remote-control software. Beyond offering signal strength monitoring for 70 channels, front panel lockout, transmitter naming and unlimited preset storage, the software also provides access to channel muting, lowpass and highpass filters, advanced FBX control, compressor knee and release parameters and more. Versions with an "NDR" suffix also have network ports for setting a control network by daisy-chaining up to 35 receivers (70 channels) using standard RJ-45 cables and a stereo 48kHz AES/EBU digital output (with a BNC word clock input), which is always active.

The SWM7000 is available in 1- and 2-channel models with bodypack (lavalier, headworn mic or guitar) or handheld (Audix OM3 or OM5) transmitters. The OM3 version is fine for most applications; however, most pros will opt for the industry-standard OM5. The lavalier beltpack ships with a Voice Technology VT500 lavalier, which is good for voice applications, but there are much better lavs out there to plug into the transmitter's Switchcraft TA4F input. All transmitters have charge inputs and include rechargeable NiMH batteries, which are immune to the "memory effect" of NiCad designs. Alternatively, two standard AA alkaline cells can power the unit. Battery life is long: eight hours per charge or 14 hours on alkalines. The handheld has two mic clips: One is conventional and the other has a built-in charger port. Clever!

Overall, I was really jazzed about the SWM7000's powerful set of onboard DSP, replacing a whole rack of gear. I've been a fan of Sabine's FBX technology for a long time, and having that built into a wireless is a natural. Ten filters are available per channel and any unused for FBX can be assigned as standard parametrics—a nice touch. The compressor/limiter is serviceable. It handles level overload protection, but it won't be replacing UREIs, Summits or dbxs on any riders. But for the smaller band that doesn't pack a dedicated vocal limiter, it's a definite plus. The one-button de-esser was a breeze to use and surprisingly good. The Microphone SuperModeling function is cool, calling up a library of virtual capsules with familiar names such as SM58, ATM41a and D-3800 to flavor the vocal sound. To my ears, these didn't provide perfect emulation, but the vocalists I worked with really liked the feature. In any case, the modeling provides an interesting palette of sounds to choose from.

The top-end 2-channel SW72-NDR receiver retails at $1,659.99; the OM5 SW70-HD15 transmitter is $549.99; and other systems (single-channel, beltpack and non-network) are priced less. But DSP and other features aside, what really makes the SWM7000 stand out is its audio quality, with true 20-20k Hz bandwidth (there's no low-end roll-off whatsoever), 100-plus-dB dynamic range and clear, dropout-free performance that makes it rival hardwired systems.

Sabine, 386/418-2000, www.sabine.com.

—George Petersen

COLES 4040
Studio Ribbon Microphone

British manufacturer Coles Electroacoustics has added the 4040 ($1,541 U.S. list) to its respected line of ribbon mics. The 4040

ships without an owner's manual or specs but simply a solitary sheet detailing handling precautions. A phone call to the manufacturer only divulged the mic's weight (2.2 pounds), dimensions (2.6 inches in diameter and 5.7 inches long) and sensitivity (0.5623 mV/PA).

Accessories shipped with the 4040 include a velour mic sock with drawstring, foam-lined plastic storage case, two standard mic adapters (with different diameters) and a swivel-mount adapter. The 4040 screws securely onto the latter and can then be rotated 360 degrees about its axis and approximately 225 degrees up/down.

The 4040 is extremely sensitive to structure-born noise, moderately sensitive to plosives and virtually immune to sibilance. The rear of this inherently bi-directional mic has a slightly fuller upper-bass frequency response than the front, and the mic's null points (90 degrees and 270 degrees off-axis) offer very good rejection.

Patching the 4040 into the optional ribbon DC input of my Millennia HV-3D mic preamp, I miked up a Roland MicroCube amp to record a rock guitar. Placed two feet from the amp, the sound was warm and smooth but lacked presence and crunch. Pulling the 4040 back a foot brought the upper mids into much better balance with the bottom end. Using the same placement, a Royer R-121 ribbon mic offered a tad more presence and definition than the 4040, resulting in a slightly crunchier sound. The 4040's output was slightly hotter than that of the R-121.

Although the 4040 was not intended as a vocal mic, I wanted to check it out in this application. In a subsequent A/B test of the 4040 and R-121 on a male vocalist—variously placed four to 16 inches away from the mics—the 4040 had a noticeably bigger bottom, darker upper mids and a much more pronounced proximity effect; the latter was especially noticeable in the upper-bass band. The 4040 yields a classic "late-night DJ" sound on male vocals, but is not defined nearly enough for miking a singer up close.

My favorite application of the 4040 was recording trumpet miked on-axis three feet from the instrument. The 4040 produced a wonderfully warm and smooth sound, without the slightest hint of being thin or harsh. The tone was bright in the mids and very understated in the high end. Awesome!

The 4040's huge proximity effect demands this mic to be placed farther away from the source than most other mics to achieve a balanced tone, which may not always be workable in some rooms or when tracking an ensemble. But for adding a warm summer glow to icy, biting instruments, the 4040 is quite simply an outstanding choice.

Dist. by Independent Audio, 207/773-2424, www.independentaudio.com.

—Michael Cooper

METRIC HALO MOBILE I/O ULN-2
Scalable Mic Pre/Converter/DAW I/O

In its simplest form, Metric Halo's ULN-2 is a 2-channel high-resolution mic preamp. I do a fair amount of remote recordings that tend to be a bit on the larger side: around 24 to 48 tracks. I thought this 2-channel box was going to be a simple slam-dunk review, but I was wrong. This small box packs a huge punch both in features and performance. At 13.5x8.25x1.73 inches, it's just about the size of my G4 667 PowerBook's footprint. The unit feels solid and the front panel provides all of the usual controls and metering one would expect from a mic pre, plus more.

The ULN-2's preamps are best described as clean and quiet with a healthy amount of gain. In addition to the microphone inputs, the ULN-2 has a DI and line-level TRS input. The ULN-2 is not just a FireWire audio interface, but it also has great-sounding AD/DA converters. Combined with the AES/EBU or S/PDIF I/O, the ULN-2 is good for monitoring digital signals or converting your analog microphone, DI or line signal to digital. This can be done without a computer present using the nine definable presets.

One of this box's best features is the balanced sends and returns. These are placed between the mic pre and the A/D converter on each channel, allowing the ULN-2 to function as a stand-alone mic pre. Simply patch into the balanced send as you would with the preamp's balanced output. This also allows the ULN-2 to act as both a mic pre and a separate A/D converter.

Each channel has a gold-plated gain adjustment set at 6dB increments. In addition, you can link the trim pots as pairs, which makes 2-channel adjustments a breeze. The meters are set up in nice increments and seem to give a small amount of headroom before clipping. At the back end, there is a stereo monitor out with gain control and a +4/-10dB line out with no gain control.

The separately converted headphone amp has plenty of power and the correct impedance for professional headphones (600 ohms). Combined with its near-zero latency internal mixer, this unit is perfect for those who use native DAWs. The unit can be powered directly from the FireWire bus or an included AC adapter. The inclusion of a DC 2.5mm connector and the XLR power connector show that the ULN-2's design was focused on professional use and portability.

I tested the Metric Halo unit while recording an acoustic bass, acoustic 12- and 6-string guitars, vocals, trumpet and percussion. On this session, I used a fairly wide variety of microphones including an Oktava Ribbon; Shure Beta 52, SM57 and SM81s; AKG C-12VR; Earthworks SR-77s; Neumann TLM-103; and a Groove Tubes AM-62. Using the FireWire cable as an input to a Mac G4 Titanium laptop and Digital Performer as the recording software, I was pleased with the sounds of all the different microphones. The ULN-2's variable gain was flexible enough to handle the high SPLs of the trumpet and quiet enough for the higher gain needed for the acoustic guitars and bass.

The ULN-2 was a solid performer in all categories. It provided plenty of clean gain, had able converters and, at $1,195, provided many extra features that make it a no-brainer for the laptop-based pro looking for versatile I/O.

Metric Halo, 845/223-6112; www.mhlabs.com.

—John Wroble ■

BY BARRY RUDOLPH

Sony C-38B Microphone

All-Purpose Studio FET Condenser Makes Curtain Call

Sony's C-38B is certainly one of the oldest new mics around. The lineage of this latest version goes back to 1965, when Sony unveiled the successor to its famed C-37A tube mic. But the C-38 had one major difference from the C-37A, as the newcomer was the world's first Field Effects Transistor (FET) microphone. In 1969, the C-38 was updated as the model C-38A with a change in the windscreen design, and again in 1971 to the C-38B, which added phantom power (9-volt battery or external DC 24V to 48V). Now, after years of absence, it's back: At the Fall 2003 AES show in New York, Sony "reintroduced" the C-38B, even though more than 65,000 of these studio classics are in use today.

First released in 1965 as the C-38 FET, Sony's new C-38B is beautifully constructed of painted brass, weighs in at 23 ounces and features a large 1⅛-inch, six-micron-thick, gold-deposited Mylar diaphragm with brass back plane. With the same diameter and structure as the C-37A capsule, this is a true condenser capsule polarized with 100 volts. A steel mechanical shutter, operated through a small recessed hole on the back of the mic, changes the polar pattern from unidirectional to omnidirectional.

Also on the mic's backside is the on/off/low-cut selector rotary switch. Not looking like a switch at all, it is actually a knurled metal collar that surrounds the mic cable's entry into the C-38B body. There are five switch positions: off for conserving the internal battery; M for full-range response; and M1, V1 and V2 for bass roll-off starting at 40 Hz, 80 Hz and 160 Hz, respectively. All three roll-offs are 6dB/octave curves.

SECRET COMPARTMENT

A slick pop-open door on the front of the mic allows you to insert a standard 9-volt (6F-22) battery, select the -8dB attenuator pad or engage the -6dB/octave 7kHz roll-off filter. Indicating the relative condition of the battery is a red light bulb visible at the bottom of the mic's body that flashes momentarily when you first turn on the mic.

The C-38B finishes with a gimbaled U-shaped mounting bracket that attaches to either side of the mic's body with two thumbnuts. This feature resembles the C-37A or the venerable RCA DX-77 ribbon mic. The bracket terminates in a rubber shock-mount socket in a threaded base that has a strain relief for the 20-foot attached mic cable and XLR connector. There is no elastic suspension shock-mount available.

IN THE STUDIO

I always do my first general comparisons while talking directly into the mics and having my assistant switch between them on my cue. Compared to the Sony C-38B, a Soundelux U195 sounded less open and less "in your face"; the Sony was much more present. An AKG C 414 ULS had less top, bottom and lower midrange than the C-38B, while a Neumann U87 was thinner-sounding due to an upper midrange boost as compared to the flatter C-38B. Only the much more expensive Neumann M149 tube beat the Sony in overall openness and bigness in sound.

Next, I used the C-38B on drums, bongos, vocals, acoustic guitar and then as a room mic. In all cases, the Sony performed very well, making it a very versatile, first-choice "go-to" all-purpose condenser mic. When recording a set of Gon Bops bongos, the Sony sounded warm and captured more of the overall drum tone.

Through the C-38B, both female and male vocals sounded full, and there was no folding up with loud singing right on the diaphragm. You'll need a pop filter, but the slight high-frequency lift on this mic more than makes up for any loss. The great proximity effect in unidirectional mode was useful to my thin-sounding singer. I had no sibilance problems with close singing and I didn't have to use the -8dB pad.

On acoustic guitars, once again the C-38B's full, fat sound worked great, although I had to move it back from the guitar and crank more mic preamp gain. I tried the M1 roll-off position when I got close to the guitar's sound hole, and it did the trick. Position V1 is fairly drastic but usable if you're close-miking and trying to slim down a large-bodied acoustic, such as a Gibson J-200, to sound more like a bluegrass guitar, such as a Collings 0M-2H. The V2 position is very telephonic-sounding and works for special effects. Switching to omnidirectional also sounded great on acoustic: I could move in closer without the bass build-up.

In general, either pattern is crisp and even—not overly bright or thick in the lower midrange. If you always carve acoustics to fit the part or track with an equalizer (like I do), this mic will start you out in a good place. Finally, for room miking, the C-38B in omni mode picked up everything in good balance. The smooth response de-emphasized the room's inherent boxy sound.

CONCLUSION

The C-38B is the perfect choice for an all-around utilitarian studio microphone that you can freely use with great results for any recording task. I'd recommend a stereo pair for room mics, string sections or drum overheads. The clear high-frequency response and solid low frequencies will present you with a true-to-life sonic picture. The C-38B sells for $2,200.

Sony Professional Audio, 800/686-7669. www.sony.com/professional.

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–Bob Rosa, Grammy®-Winning Mixer/Engineer: Whitney Houston, Mariah Carey, Ednita Nazario, Paulina Rubio

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–Tim Hauser, Vocalist, Manhattan Transfer

"I've now used the ADK Model "S" on almost everything including vocals, guitars, and drums. They remind me of very expensive German mics I have tracked with before."

–Adam Kasper, Producer/Engineer, Cat Power, REM, Pearl Jam, Soundgarden, Foo Fighters

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BY EDDIE CILETTI

Vox Around the Clock

Guitar Amp Surgery to Find the Offending Tube

Troubleshooting and mixing have the potential to be long, arduous journeys, but I've learned to accept them for their educational value. Mixing taught me to pay more attention before pressing Record, while the service business has many benefits, not the least of which is circuit familiarity. Combine the two and you'll find yourself at a fork in the road: One path is a mod to record difficult guitars easier, while the other path details just how long the road to a fix can be. The two stories have an output amplifier configuration in common, so let's rock!

I had never really explored the Vox AC-30 until this year, when Tom Morrongiello, guitar tech on the Bob Dylan tour, requested an emergency visit. The problem manifested itself as a note-specific hypersensitivity that would send the amp into a screaming fit of crunchy static. They gave me four hours to turn the amp around; it didn't have to be fixed, just diagnosed. Of course, I did my homework first, doing the Google thing and opening up Aspen Pittman's *The Tube Amp Book* (www.groovetubes.com) to review the schematic.

The Vox AC-30 is my kind of amp, having one of the same tone-specific features as the Gibson GA-6, a personal fave. Both models do not have feedback in the output amp (see Fig. 1) and this, I believe, contributes mightily to their character by extending the sweet nonlinear range between clean and clipped. When used in a high-fidelity application, feedback reduces distortion, flattening and broadening the frequency response. But for an instrument amplifier that is likely to be intentionally overloaded, an amp with feedback can make some pretty weird tones. In addition, 20 to 20k Hz bandwidth for a guitar is hardly necessary.

BACKGROUND VOX

Upon arrival, I let my kids "play bass" through the AC-30 during lunch. I was hoping for a clue, but nothing remarkable happened. (They're usually pretty good about finding the Achilles heel.) Same on the bench—powering a resistor bank—so I proceeded to look for cold solder joints, arced connectors and burned components. To access the underside of the PCB, I removed all of the knobs and pot nuts. A cathode resistor broke loose when touched, so that item was placed on the "make roadworthy" checklist. I also had a hunch that the amp was noise-prone (based on the grounding scheme), but still no needle in the haystack.

The tubes were cycled through a tester, again with nothing remarkable. After reassembly, I did another resistor bank power test and then went back to the speakers. This time, the frequency was slowly swept from low to high at a decent level. This time, *it* happened! The magic frequency turned out to be 293 Hz, just between an A# and a B.

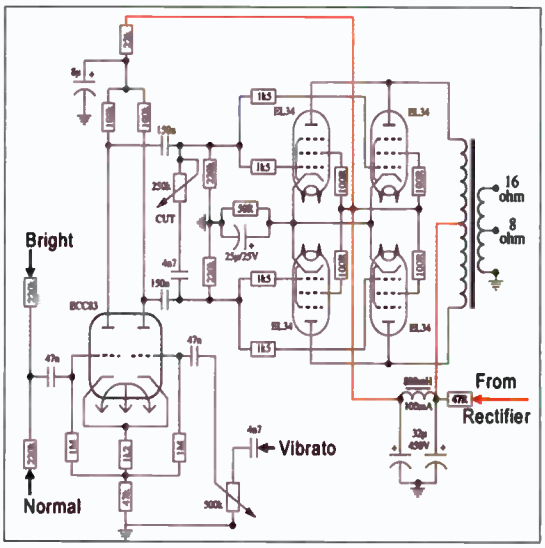

Figure 1: Vox AC-30 power amp schematic. Like Tweed-era designs, this amp does not have negative feedback (typically from the speaker output to the ECC83/12AX7 driver stage).

At first, the Standby switch was suspect, but a quick swap ruled that out. Tapping on the preamp's tubes yielded surprisingly little until the output tubes—not normally microphonic (in an obvious way)—were pulled a second time. The internal construction didn't inspire confidence: I could hear a rattle as each one was tapped, some worse than others. I speculated that the tubes were running hot and that the many expansion and contraction cycles had fatigued the structure.

I don't normally stock the EL84/6BQ5 miniature output tube (it has specs similar to a 6V6) and Yik, the other guitar tech, didn't have access to his stock, so there was no immediate proof of my theory. I did get to see some of the show (a great band with Dylan on keys) and have been checking up on the amp ever since. After the new tubes were installed, the amp behaved for less than a handful of performances and has had three other "specialists" doting on it. I remembered a guitar amp mod from my Record Plant daze and called Paul Prestopino to confirm.

ODE TO DIE(ODE)

In New York City back in the late '70s, Michael Guthrie was a technical engineer at the Record Plant and Bearsville Studios. Well-known for his Ampex MM1200 mods, Guthrie also had a guitar amp tweak: a simple diode clamp to protect the output tubes from "transformer reflections," the type that might occur by plugging or unplugging the speaker while the amp was on and being played. I have a feeling that there may be in-

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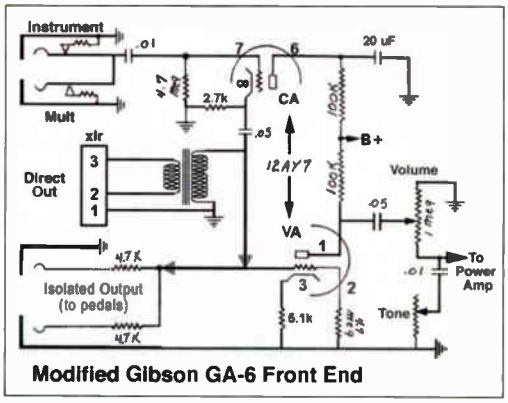
teractivity issues in the Vox speaker/transformer/output tube combo that might benefit from this mod. Modern speakers, even the retro types, tend to have more efficient magnets and can generate more back EMF as the speaker returns to its at-rest position. The speaker's free-air resonance, a bad transformer run or wimpy tubes could all be contributors.

SO, WHAT IS IT?

Unfortunately, life on the road continues to generate some of the strangest problems. Yik told me that he used Vox amps on tour from '92 to '98 without incident. The problem amp was from 2002, and now, the backup amp (circa '98) has started to exhibit the same symptoms. I'll keep you posted.

WHAT IS THAT SOUND?

About 10 years ago, a band asked me to engineer their contribution to a compilation CD, and so I ventured into their basement rehearsal space on New York's Ludlow Street for pre-production. They were "just" a trio—guitar, bass and drums—doing a speed-metal-reggae kinda thang. The vocalist/bass player was having pitch difficulties. I asked the guitar player (who had, like, eight freakin' pedals) to lay low in the verse and—voila!—the vocals improved exponentially.



Modified Gibson GA-6 Front End

Figure 2: The modified input section to a Gibson GA-6 guitar amp allows a guitar or bass to feed two destinations at once without loading the instrument.

Still, I anticipated problems in the studio because "pedal boy" seemed hell-bent on making lots of dense noise; quite frankly, he was eating up sonic real estate big time and I hate that! (Now do you see why I am a geek and not a full-time engineer?) Back in the lab, I modified my fave old GA-6 Gibson guitar amp so that the guitar player could use his rig while providing me with options.

MOD SQUAD

Figure 2 shows the modified front end of the GA-6 with its 12AY7 dual-triode. Originally designed for two inputs (instrument and mic), one channel and half of the tube were sacrificed for the DI. The top triode was reconfigured as a cathode follower to drive the 10k-ohm side of the transformer, the first gain stage (the lower triode) and a medium-Z (isolated) output for driving pedals. It's pretty simple.

The guitarist plugs into the instrument input and can take either the hard-wire mult output or the isolated output to drive an amp or pedals. Obviously, the direct output is handy for bass and re-amping.

I prefer the "overdrive" sound of small amps without feedback to pretty much any high-powered amp, and I am all over the option to set the controls the way I like them—generally, with less gritty distortion—without stepping on the musician's ego. ■

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Out of the garage, into the studio (pictured L-R): Marcie Bolen, Jason Stollsteimer, Carrie Smith, Don Blum

THE VON BONDIES

DETROIT ROCKERS KEEP IT RAW

By Heather Johnson

If we transported Detroit-based rock quartet the Von Bondies to 1977, they might be found opening for such groundbreaking acts as Blondie, Television or, quite possibly, the Talking Heads at Manhattan's legendary CBGB. Fast-forward to 2004, where we find the young group working with former Talking Head Jerry Harrison not in a Bleecker Street punk club, but in three Sausalito, Calif., studios—Studio D, The Plant and Harrison's Sausalito Sound—where he produced their Sire Records debut, *Pawn Shoppe Heart*.

Struck by the group's early rock 'n' roll aesthetics and unbridled live energy, Harrison produced 10 of the album's 12 tracks, the remaining two culled from earlier demos recorded by Jim Diamond at Ghetto Recorders in Detroit. "They have a lot of energy onstage and yet Marcie [Bolen, guitarist] and Carrie [Smith, bassist] have this sort of bored, ho-hum attitude, whereas Jason [Stollsteimer, guitarist/lead vocalist] is really intensely singing," says Harrison. "It's just a wonderful contrast. It's music that I play for my kids and their friends and they love it, but I'll play it for someone in their 50s and they really like it, too."

As key players in the much-hyped Detroit rock scene, the Von Bondies have two indie releases to their credit, including *Lack of Communication*, co-produced by Diamond and White Stripes frontman Jack White (who later beat up Stollsteimer in a well-publicized bar episode). However, the foursome treated *Pawn Shoppe Heart* as their first record, "because to most people. it *is* our first record," Stollsteimer says matter-of-factly.

Though inexperienced in recording at top-notch commercial studios, the group had very specific ideas about the record's direction. The only question was whom should they hire to produce? "All the producers we knew of were dead or not doing much," says Stollsteimer. "Phil Spector was somebody that seemed interesting and Mickie Most, who did The Animals. Those are people that we had heard of."

Stollsteimer, who formed the group in 1998 as the Baby Killers, knew little of Harrison's background as a member of the Modern Lovers and Talking Heads, or his production work with acts such as Rusted Root, Live, Foo Fighters and the Juliana Theory. "All we knew was he was a very honest guy that came from a punk rock background like we did—and that he wasn't just out to get a Platinum record."

Adding another punk and rock scholar to the team, Harrison called upon longtime friend/studio partner Eric "E.T." Thorngren to record and mix the album. "He mixed [Talking Heads'] *Stop Making Sense* and *Little Creatures*," Harrison says. "We just re-hooked up and started working together again." Additional Thorngren credits include albums for Bob Marley, Squeeze, Robert Palmer and Debbie Harry, among others.

The group may not have known many living or

—CONTINUED ON PAGE 139

BEBEL GILBERTO

TAKING BOSSA NOVA TO THE FUTURE

By Chris J. Walker

Following in her family's footsteps, but making her own quick strides to international success, Bebel Gilberto redefines bossa nova with her tantalizing mix of sizzling Brazilian melodies and hip electronica. Four years after her triumphant debut, *Tanto Tempo*, which was followed by a club-oriented remix version of the album, the stunning singer returns with a new self-titled CD. Her approach is similar to the first recording, but with noticeable differences.

Although *Tanto Tempo* was Gilberto's first full-length release, she was certainly no stranger to the music business. As the daughter of legendary singer/composer João Gilberto and the renowned singer Miúcha, Gilberto has been around music her entire life.

Indeed, Gilberto's introduction to the world of recording studios actually came when she was seven years old and sang on one of her mother's records. Two years later, the exquisite mother-daughter duo performed with the great jazz saxophonist Stan Getz at Carnegie Hall. Since those extraordinary introductory occasions, she has supported and/or collaborated with a wide array of singers and instrumentalists, including David Byrne, Kenny G., Gal Costa, Laurie Anderson, Nana Vasconcelos, Arto Lindsay, Thievery Corporation, Caetano Veloso and, of course, her father. Most of those followed her migration to New York in 1991, and it was in that musical and cultural melting pot where she developed the broad taste in music so evident on both *Tanto Tempo* and her latest release.

PHOTO: ROBERTO LIGRESTI

The most obvious difference between the two albums is that all of the songs on *Bebel Gilberto* are original. Secondly, the singer enlisted several top pop-oriented producers, such as Marius deVries (Rufus Wainwright, Björk, Annie Lennox), Pascal Gabriel (Dido, New Order, Kylie Minogue) and Guy Sigsworth (Madonna, Björk, Lamb), along with well-known Brazilian singer/musician Carlinhos Brown. "I wanted this album to be more about Bebel Gilberto the songwriter," the artist explains. "Instead of just being a singer and doing the standards of bossa nova, I'm trying to create new sounds.

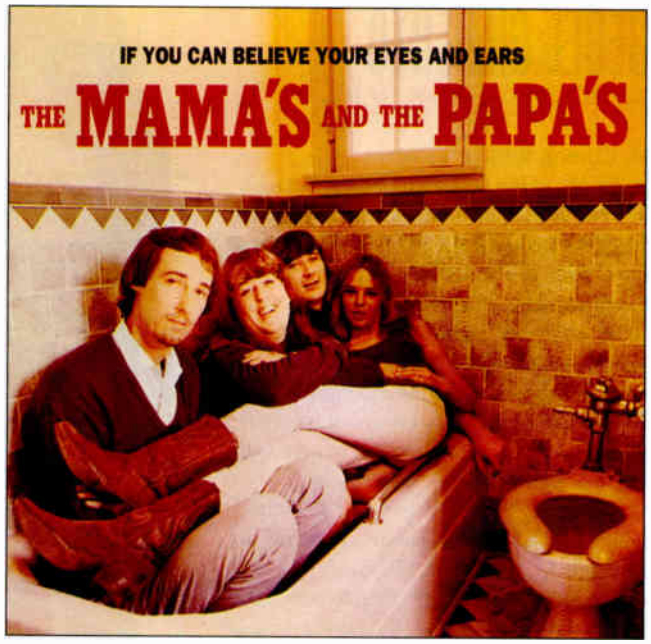
"I wanted to go further with my own instrumentation, ideas and vibe. I think on this CD, it's coming across." The singer credits the heightened focus on creating her own music to years of grueling tours with her band to support the previous release. Before that, "I was doing 300 different things," she says, including club dates around New York, studying English, modeling and even acting.

One of three top pop-oriented producers snagged for Gilberto's bossa nova album: Marius deVries

Work on the new disc began in early December 2002, when Gilberto and her touring keyboardist and musical director, Didi Gutman, went into Looking Glass Studio (co-owned by Philip Glass) in Manhattan to cut basic tracks to Pro Tools with engineer Hector Castillo. The rest of her band, including guitarist Masa Shimizu, reed player Paulo Levi, drummer Magrus Borges and percussionist Mauro Refosco, also joined her, as did a few spot players. "I like an easygoing vibe and I don't care that much about the technical gear," she says of her approach in the studio, "but I want to get the right sound on the instruments."

—CONTINUED ON PAGE 141

THE MAMAS & THE PAPAS' "CALIFORNIA DREAMIN'"



By Dan Daley

Dayton "Bones" Howe instinctively downplays his role in the creation of one of pop music's most memorable tracks. "I was just the engineer," he says. He was also "just" the engineer on hits for top-selling artists such as The Turtles, Frank Sinatra and Johnny Rivers, and before the '60s ended, this former jazz drummer and stockbroker's son would become one of the era's leading producers, creating hits by The Association, the 5th Dimension and, perhaps most famously, Tom Waits.

Howe would get to see the very beginning of the arc of The Mamas & The Papas' rise to the top through to its bittersweet end. In early 1966, "California Dreamin'" was the first of a string of sparks—the group's first six singles, including "Monday, Monday," "Words of Love" and "Dedicated to the One I Love," would all go Top 10—that helped keep vocal harmony alive, well and hip in the stoned-out fuzzbox of the 1960s.

Howe came of age professionally in an era of the music industry when spontaneity was the currency of the business. Deals could happen—or not—just like *that*, as could careers. This record would be no different. The track to "California Dreamin'" had already been recorded before The Mamas & The Papas were even signed to producer Lou Adler's Dunhill Records label. John Phillips, the group's acknowledged leader and songwriter, was already getting noticed as a composer, and the group—he, Michelle Phillips, Denny Doherty and Cass Elliot—was making some money doing background vocals around L.A., where they had moved the year before from New York. All four had roots in New York City's folk scene. Actually, it was Barry McGuire, of "Eve of Destruction" fame, who originally decided to cut John and Michelle Phillips' "California Dreamin'," and Adler and Howe had recorded the track for him. The night they were scheduled to cut the vocals, McGuire brought The Mamas & The Papas with him into United & Western Recorders as backup singers.

"We were working in Studio 3, which was so small that we always did basic tracks first and vocals afterward because you couldn't fit that many people in there at once," recalls Howe. "So Barry comes in with these four scruffy-looking characters. Lou said, 'Let's listen to them, but first let's get a few other things taken care of.' So they waited around while we kept working, doing more tracking. Then we took a break and Barry asked us again to listen to them sing. So we asked if another studio was open and Studio 2 was, so we went in there and John picked up an acoustic guitar and they sang four songs, including 'California Dreamin'" and 'Go Where You Want to Go'; basically, they sang what would become their first four hits. Lou turns to me and says, 'What do you think?' I said to Lou, 'If you don't take them, I will.' That did it."

Adler then peeled off $100 and gave it to the group—a down payment on the contract they would sign that same week, and $50 more than Capitol Records A&R chief Nick Venet had given them the day before. "I don't think Nick ever spoke to Lou again after that," says Howe.

The track, intended for McGuire (it was released on one of his albums), now became the basis for The Mamas & The Papas' first hit. It had been played by members of the famed Wrecking Crew, which included Hal Blaine on drums, bassist Joe Osborn, pianist Larry Knechtal and acoustic guitarist P.F. Sloan, who created and played the wonderful picked guitar intro that so perfectly sets up the mid-tempo track. Howe's tracking technique was typical of the era and varied little, if at all, from session to session. "In those days, we'd have a track mixed together in 10 minutes," says Howe. "There was none of this, 'Let me hear the kick drum and now the snare drum.' If you listen to instruments individually, they don't sound the same as they will when they're all playing together, whether it's a drum kit or a rhythm section. When you have the musicians in the same room together without headphones, they tend to balance themselves better than any engineer can."

Howe's standard microphone setup in that era was Shure 546 mics on the kick and hi-hat, as well as on the guitars, with a Sony condenser microphone on the snare. Howe would usually record bass and drums to one track, then put guitars and keyboards on another nonadjacent track (e.g., tracks 1 and 3 or 2 and 4), leaving the intervening tracks for vocals and bouncing. The actual track layout for this song was track 1, female vocals; track 2, guitars and piano; track 3, male vocals; and track 4, bass and drums.

The new vocals by The Mamas & The Papas were laid atop the original track, which fortunately was in the right key because the 4-track Ampex 300 recorder (which was basically two 2-track decks' electronics in a taller tower with new headstacks) didn't have much in the way of VSO capability. Howe set up the vocals the way the group naturally stood: the men and women facing each other, close in, each group with its

—CONTINUED ON PAGE 138

Cool Spins

The Mix *Staff Members Pick Their Current Favorites*

Various Artists: *46664: The Event* (W/S/M)

On November 29, 2003, a slew of fantastic European and African singers and musicians got together in a stadium in Cape Town, South Africa, to raise money and awareness for the worldwide AIDS epidemic (through the sponsoring Nelson Mandela Foundation) in what may be the biggest—and coolest—music benefit concert since Live Aid in the mid-'80s. These kind of shows invariably bring out the best in everybody, especially when the musicians are willing to leave the safety of the familiar and take some chances: play new songs, try different arrangements, work with new people and check their egos at the door. This four-hour, 2-DVD set is a deeply moving but ultimately joyous celebration of that questing and cooperative spirit—of music's power to bring people together and of Africa itself.

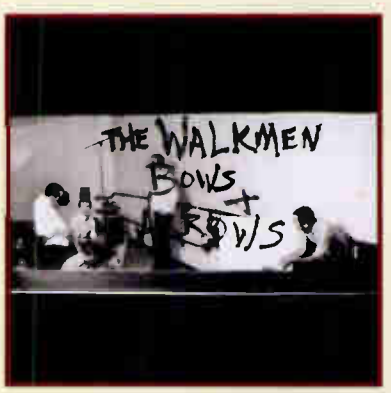
Highlights are so numerous it's hard to know where to start: Yusuf Islam (aka Cat Stevens) and Peter Gabriel joined by the colorfully robed Soweto Gospel Choir (who shine gloriously throughout the event) for a stirring, Africanized re-working of "Wild World"; Gabriel's first-ever version of "Biko" in South Africa; Bono, Beyoncé, The Edge and Dave Stewart singing a new song called "American Prayer"; Jimmy Cliff and the Soweto Choir's uplifting version of "I Can See Clearly Now"; Ladysmith Black Mambazo's heartfelt "Homeless," the Paul Simon song that launched their international career; Annie Lennox and Youssou N'Dour sharing the stage; and Queen, with Anastacia in the Freddie Mercury slot, spot-on with emotionally charged versions of everything from "Bohemian Rhapsody" to "We Are the Champions." The DVD is always entertaining and frequently transcendent, with lots of special documentary features. The show is also available as three audio CDs, but those are not as successful in my view. So much of the thrill of this project is visual.

Producers: Jim Beach and JF Cecillon. Director: David Mallet. Recorded by Justin Shirley-Smith and Toby Arlington. Mixed by David Richards and Josh J. MacRae at Mountain Studios (Montreux, Switzerland) and The Priory (Surrey, UK). Mastering: David Richards, Tim Young and Twig (Mountain Studios, Montreaux, Switzerland; Metropolis Mastering, London).

—Blair Jackson

The Walkmen: *Bows and Arrows* (Record Collection)

The Walkmen built a studio (Marcata Recording) and recorded their debut, *Everyone Who Pretended to Like Me is Gone*, before they'd ever played a show together. Now, after a couple of years of touring, the rock quintet emerges with a cohesive sophomore effort brimming with a raw and, yes, *live* energy that begins and ends calm, cool and confident, but rises to frantic, aggressive heights. More languid



moments include the opener, "What's In It For Me," where a faint church organ and rusty old piano share track space with Hamilton Leithauser's soaring vocals.

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THE MAMAS & THE PAPAS

FROM PAGE 136

own RCA DX-77 microphone. "I took the two mics and set them in a directional cardioid pattern, with the dead sides facing each other," Howe explains. "That gave us great rejection and allowed them to sing naturally. The song starts out with the guys singing 'All the leaves are brown' and the girls answering the lines. It's pretty much the group all the way through except for a few lines that Denny sang solo. When the time came for that, John walked around to sing at the girls' microphone."

The first-pass vocals were laid to one of the two open tracks. Howe then bounced the music bed tracks together on a second Ampex 300 deck and doubled the vocals, careful to keep the vocal tracks separate from the rest of the recording. Adler wanted a solo, and the arrangement for McGuire had a hole for it on one of the vocal tracks after the second chorus. "Lou was saying he didn't want a sax solo like every other rock record had," Howe remembers. "I knew that Bud Schank was playing flute on a jazz session in another studio because I had seen him earlier in the hall. So I went down there and said, 'I can get you another session when your 8-to-11 [p.m.] is done.' I set Bud up on one of the DX-77 microphones and he played the solo over the verse chord change."

Howe was working on a custom console designed by studio owner Bill Putnam. He recalls it as having no more than 12 inputs, possibly as few as eight, but still plenty for a 4-track recording and plenty more for what would be a mono primary mix. A stereo mix was done afterward at Howe's request, and Adler never bothered to show up for it. "He had the radio mix he wanted in the mono mix," Howe says. "Stereo was optional in those days."

In fact, as was often the case in this era, much of the mix had been done as the recording went along, with reverb from Studio 3's live chamber and EMT plate being recorded to the vocal tracks, and compression supplied by what Howe remembers as the prototype of what would become the 1176 compressor/limiter. "It was just a plain metal face with no numbers or anything on it," he says. Howe split the men and women right and left, respectively, on the stereo mix, just as they had stood in the studio. He didn't use a particularly light touch on the reverb on each pass, either, adding a bit more on the final mix. "The reverb was part of the whole '60s sound," he comments. "Everyone used it a lot on [all the vocal groups]: Jan & Dean and the Beach Boys and so on. It might have sounded the same, but you have to understand that back then, everyone made the same records. We were using the same studios, the same musicians, the same equipment. The only thing that changed was the artists. That's where the difference was."

Like pilots flying on instruments, engineers had to trust their judgment when applying reverb, because, as Howe points out, there was no way to monitor the reverb return separately on the ultrasimple signal path of the Universal console. "Those were very simple straight-line modules: an echo send, a fader and a mic/line switch," he explains. "The way you monitored it was to listen to the reverb recorded on the track with the vocals. You were making these kinds of commitments and decisions throughout the recording process as you went along. But the benefit was that when you layered the reverbs on each vocal pass, you got this wonderful, sparkling sound from the phasing in the chamber. We didn't plan these things; we discovered them as we went along."

With its lush harmonies that practically begged listeners to sing along, "California Dreamin'" was a pleasing slice of folk-rock in a time when other top groups of the day were slowly starting to turn toward psychedelia. The song quickly shot into the Top 10, peaking at Number 4 in the early spring of 1966. It was followed by a string of hits from the album *If You Can Believe Your Eyes and Ears*. The Mamas & The Papas never equaled the performance of that particular collection of songs, either as a group or in their individual solo careers, and personal demons would eventually destroy the group and, ultimately, two of its members: Elliot died in 1974 of heart failure after a handful of respectable solo hits and John Phillips passed away in 2001 after years of alcohol and drug abuse.

But Howe, who stays in touch with Doherty and Michelle Phillips (whom he affectionately calls "Michie"), remembers The Mamas & The Papas as the brilliant and dedicated musicians they were when they made that first record, even though they were still products of the age. "You name an excess—grass, alcohol, whatever—they did it," he says. "Lou [Adler] later said to me we should have recorded 200 songs for that first album, because their behavior got worse as they got more famous and successful. But when we made 'California Dreamin',' they were still poor kids. That picture of them in the bathtub on the album cover—that's how they actually lived. But once the money comes, you know what happens. They used to have a contest to see who could spend the most money in a week. John bought a house.

Cass bought a mulberry-colored Aston-Martin. She won that week. But they sounded the way they did because they were a group, the same as the musicians in the studio. They don't sound like their individual instruments, they sound like a unit. Lou Adler said it best when he said to me, 'Bones, it's not a ham sandwich and a cheese sandwich, it's a ham *and* cheese sandwich.' That's what making a record is all about: how the parts work together." ■

THE VON BONDIES

FROM PAGE 134

unconvicted producers before meeting Harrison, but they knew exactly what they wanted to accomplish in the studio. "We had already written the songs [for the record] a year-and-a-half before we even got signed," Stollsteimer says. "What we wanted was to just capture the vibe we have, so we really needed someone who would be open to having us just play our songs and try to capture the sound we wanted."

"Jason had very distinct views," Harrison adds. "He wanted to keep the music raw. So the challenge was, how do you make the music more powerful without making it seem slick? We wrestled with competing ideas, and I think we got just the right balance."

To maintain equilibrium between youthful live energy and in-studio craft, Harrison used a balance of new and vintage equipment. The four-piece tracked on large-format consoles such as Studio D's AMEK 9098i and The Plant's SSL 4000 G and overdubbed and mixed with Sausalito Sound's Pro Tools|HD 6.2.3 workstation, which comes equipped with a full load of plug-ins and is controlled by a 32-fader ProControl. The "vintage" element comes from outboard gear such as Neve 1073s, 1079s and 1084s; Telefunken V76s; and Daking mic pre's. Compression is handled by Universal Audio 1176s and LA-4s, a Neve 2254 and Empirical Labs Distressors. The project was recorded onto a Studer A800 2-inch 24-track and mixed on an Ampex ATR-100 ½-inch. "We recorded clearly, but with the warmth of analog tape," Harrison says. "Because they play well, we weren't afraid of leakage. They were all set up in one room, and we employed room mics—the setup could be called 'classic recording.'"

That said, they didn't follow the old-school philosophy verbatim. "We didn't deliberately set up like you would [in the '70s]," Harrison notes, "and we certainly did

do overdubs. It wasn't played all in one pass, but there were times where we kept what was played in one pass. We wanted to make sure that we could keep a track if we wanted, but if it needed to be improved, that was fine. We also tried not to have too much doubling of instruments. We didn't want it to feel like we'd doubled and tripled parts and did things you can only do in the studio. We wanted it to feel like it was two guitarists, a bass and drums playing. You can still make it seem big and powerful without doing the layering that's sometimes very appropriate but wasn't this time."

Complementing Harrison's straightforward approach, Thorngren kept the band together in the main tracking room while isolating guitar and bass amps. "The drums had their own room, but everybody was in it with them and we sort of gobo'ed off Jason singing to keep most of [the vocals] out of the drums. There were so many years, for me, of processed drums that I'm really into getting a nice-sounding room and [recording drums] that way."

For Don Blum's one floor tom, Thorngren used an AKG 414. "[Don] wanted to get some really good presence from it because it was his only tom and he plays it a lot," Thorngren explains of the stripped-down kit. He used a Shure SM57 for the top of the snare and another 414 for the bottom. Two Neumann U67s were used for the cymbal. (Blum only uses one of those, too.) One mic was placed over the cymbal and another positioned where an additional cymbal *would* be to maintain the width of the kit. Two mics were also used to get the proper bass drum sound. "We used an [AKG] D-112, but then placed another bass drum right onto the front of the first one. Then you stop the air from leaking out of the sides and the next head vibrates sympathetically," says Thorngren. "Then we mike that with a FET 47 and mike the room with a pair of 87s—high on the wall."

PHOTO: ERIC THORNGREN

Von Bondies' guitarist/lead vocalist Jason Stollsteimer lets loose in Studio D's control room.

For guitars—both fuzzed-out and reverb-drenched—Thorngren placed an SM57 on Stollsteimer and Bolen's old Vox, Fender and Rivera amps, using AKG 414s and Sennheiser 421s as alternates. "I take a direct from every guitar—just to start off with—and record that along with the amps," Thorngren says. "If you're going for one type of tone and later it's not working, you can take that pure signal from the guitar, re-amp it into another amp and come back with the same performance with a different sound." Vocals were much less complicated to record, as Thorngren miked Stollsteimer's guttural howl and Bolen and Smith's nonchalant harmonies with U67s.

While tracking, Thorngren bounced between the Studer machine and Pro Tools to maintain the sessions' integrity. "A lot of times, we'll run the mics through the 24-track and then go to Pro Tools," Thorngren recalls. "But we'll set the analog machine on repro, so we're actually recording on it but we're bouncing right off of it like 30 milliseconds later into Pro Tools. And the band monitors the input so they don't get that delay, but we get that analog sound immediately. It works great."

Thorngren also shies away from mixing

PHOTO: ERIC THORNGREN

Don Blum behind his stripped-down kit in Studio D, flanked by AKG, Shure and Neumann mics

completely "inside the box." "Jerry and I really like the way Pro Tools|HD sounds through the Dangerous Audio 2Bus into an analog stereo compressor," he says. "It's like having a 16-channel console with no faders, no EQs, no nothing. I will come out of Pro Tools and go into, say, 1 and 2 of the Dangerous with the drum package, and then 3 and 4 with one guitar package and then 5 and 6 with another one, and 7 and 8 with the vocals. I'll have any effect returns coming back on 15 and 16. I think it sounds bigger this way.

"We also have classic gear that we love, particularly compressors, on inserts prewired into the Pro Tools session," Thorngren continues. "That way, it's easy to blend the virtual plug-ins with sounds we've come to love over the years."

The end result, which was mastered by Ted Jensen at Sterling Sound in New York City, not only sounds "big," but raw, primal and in-your-face loud—just as a rock 'n' roll record should, and just the way Stollsteimer wanted. As Harrison notes, "It's short and to the point, and when it's over, you just smile and want to hear it again."

MIX ONLINE EXTRAS

BEBEL GILBERTO

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To get even more of a Brazilian vibe while still recording basic tracks, she went to Rio de Janeiro for Christmas and to Bahia before New Year's Eve. At Gilberto's second stop in her homeland, she stayed with Brown for two weeks and worked on a couple of tracks: "Aganjú" (derived from Xangô, an important figure from the Brazilian religion of Candomblé) and "Jabuticaba" (a popular fruit-bearing tree in Brazil). Sessions were recorded at Ilhas Dos Sapos Studio in Salvador, Bahia, with Alé Siqueira and Flávio DeSouza engineering.

"He's the only Brazilian producer on the CD," Gilberto says of Siqueira, "and I really admire him a lot. What he did for Brazilian music [founding Timbalada in the '90s, a socially conscious drum ensemble comprising more than 120 instrumentalists and singers], especially these days, is really, really interesting, and I'd like to drink from that water."

Upon returning to New York in February 2003, Gilberto was introduced to London-based producer deVries through her record label, Six Degrees. She met producers Sigsworth and Gabriel about six months later. "I was looking for someone to help me define my sound, and I really wanted to

have different people working with me; basically, [individuals] who were into my system, but not necessarily Brazilian," she says.

"With Marius deVries, I started working with him from zero, without really knowing where we were going," Gilberto says. During the summer of 2003, deVries spent a good deal of time familiarizing himself with the singer's previously recorded tracks. Additionally, he transferred the basics to Emagic Logic, his format of choice. "There were no completed tracks," he says by phone from the Strongroom studio in London, "but there were a lot of ideas, energy and great performances. Everything that's on the record existed, in one form or another, at least in sketch form, before we started working together.

"Also, there wasn't a lot of focus, which she acknowledged, and that was one of the reasons she came to me," deVries continues. "Bebel did have a very strong instinct for what she wanted, but I'm not sure how clearly verbalized it was, initially. I think that was one of the pleasures of the record: uncovering what was in her as part of the process. I contributed some extra writing to some of the tracks and helped with vocal arrangements and some of the lyrics, especially when she sang in English."

The producer says his sonic approach was fairly simple and subtle, with minimal effects—mostly augmenting what was already there with an array of plug-ins, from Bomb Factory compression to Altiverb to Amp Farm processing and Emagic's Epic TDM.

At one point, deVries had to leave the project to work on Rufus Wainwright's *Want One* CD, so Gilberto turned to other producers. Upon the conclusion of a 20-date tour through England and Western Europe during August and September 2003, the singer cut a pair of tracks with Sigsworth and Gabriel. Comparing the three producers, she says, "The biggest difference between them is that Marius is a more by-the-book kind of producer, but also very crazy, and he could interpret my moods. Guy is absolutely romantic and an incredible arranger with a classical foundation. Pascal is an electronic producer, who had his own ideas about instruments and how Brazilian music is supposed to sound. That was interesting because he took my melody and words and turned them into a story."

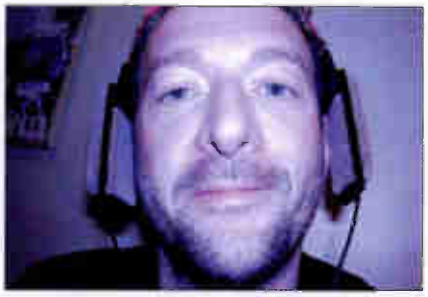
In keeping with the general theme of the singer's CD, Pascal crafted electronic elements to underscore Gilberto's sensuous vocals. "I had a bit of a groove going that actually was a wall of noise," the producer says from his studio. "It came from weird explosion sounds slowed down with tin can metallic things I had samples of."

Shortly after working on the single tracks with Pascal and Sigsworth, Gilberto and deVries reconnected and went to Rio de Janeiro for about five weeks to track vocal overdubs, guitar solos and some percussion at AR Studios. Gilberto says that an essential part of her vision of the album was that it have "a Brazilian heartbeat" beneath the layered electronics and other non-Brazilian musical influences. "I wanted Marius deVries to smell Brazilianism and use some of the musicians there." One of them was none other than her mother, who Gilberto had just helped with her own recent recording. "I just wanted to share the moment with her, because she's an incredible improviser who creates interesting sounds and different colors," Gilberto says of her mother. Antoine Midani, assisted by Bruno Kubrusly and Duda Mello—the same team that worked on *Tanto Tempo*—serves as engineer during this phase of recording.

Once back in London, Gilberto and deVries worked diligently for three weeks from 11 a.m. to 4 a.m. at the Strongroom to get the project finished, mixed and mastered by Christmas 2003. Strings played by the London Session Orchestra were added to "River Song," "Simplesmente," "All Around" and "Next to You," with the arrangements done by deVries, Gilberto and conductor Chris Elliott. Recording for those elements was done at Angel Studios in London and engineered by Gary Thomas. "Nothing was terribly difficult," deVries says, "but it was a challenge to keep the orchestrated selections clear. They became quite busy and full, which is not really a tendency of bossa nova–based music to have that kind of density."

Engineer Andy Bradfield at Strongroom's SSL board

Andy Bradfield, who has worked on many of deVries' projects for the past 10 years, was also brought in at the mix stage. Working on an SSL G Series console augmented by various analog tools such as LA-2As, LA-3As and a Phoenix compressor, he



Producer Pascal Gabriel brought elements of electronica and Brazilian music to Gilberto's latest.

mixed most of *Bebel Gilberto* at the Strongroom. Additionally, Tom Elmhirst did the mixing for "Céu Distante" and Sean McGhee mixed "Cada Beijo" at Frou Frou in London.

Bradfield says of deVries, "Marius tends to use dynamics a lot, which I really love. That's part of the reason he and I get on so well. We realize that not everything has to be at 200 million dBs. The tender sections can be really nice and the explosive stuff can really be quite powerful, so everything is shown in the best possible light."

He says the mixing was rather straightforward for the majority of Gilberto's album. Still, a few tracks were rather challenging. "'Aganjú' was quite tricky and had a lot of percussion on it that we actually submixed some of it in the computer. That's a good example of how you can have the best of both worlds. It also helps me, in terms of when I'm actually doing a mix, so I can concentrate on what the vibe is going to be rather than, 'Oh my God, how am I going to fit all these things on the desk?' Marius and I are probably known for our big multitrack count, and we probably maxed out at about 128. But some of the songs that have a lot don't sound like they do."

There's ample amount of air and space on the album, as befits a Brazilian-oriented recording where vibe and musicianship are so important. Still, it's distinctly modern, even forward-looking. "Bebel comes from the most impeccable Brazilian music pedigree with her family's history, but at the same time, she has grown up in New York and has a feel for Western pop music," deVries comments. "It's a wonderful collision of those two sensibilities that, along with her voice and personality, makes it an intriguing package."

Gilberto concludes, "The results were wonderful and I also fell in love with Guy, Pascal, Carlinhos and Marius, because they got different sounds, melodies and ideas from me. I don't think that would have happened if I were working with anyone else. But I do feel pressure from the fans, record company and people in general to be my father's daughter. I'm always wondering when I'm going to graduate from that."

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(Imagine Bono with a two-pack-a-day cigarette habit.) One of the New York band's finest moments occurs immediately after with the forceful "The Rat," where relentless, pounding drums and impatient guitar work amplify Leithauser's bitter cries of "You've got a nerve to be calling my number." The air of cynicism continues on the less-frenzied "138th Street," while "Hang on Sioban" is a rendition of an Appalachian standard. Recorded in New York, New Jersey, Memphis and Oxford, Miss., The Walkmen's second record makes a standout addition to New York City's diverse underground rock scene.

Producers: David Sardy, The Walkmen. Engineers: Greg Gordon, Stuart Sikes, The Walkmen. Studios: Marcata Recording (New York City), the Magic Shop (New York City), Easley McCain Recording (Memphis), the Jolly Roger (Hoboken, N.J.), Sweet Tea Studios (Oxford, Miss.). Mastering: Fred Kevorkian/Absolute Audio (New York City). *—Heather Johnson*

Little Feat: *Kickin' It At the Barn* (Hot Tomato)

By this point, anyone who has been paying attention should not be surprised to hear that Little Feat is still capable of turning out great albums. The post-Lowell George era has given us at least three: *Let It Roll* (1988), *Ain't Had Enough Fun* (1995) and now, *Kickin' It At the Barn*. All the familiar Feat elements are in place: the alternately rootsy and funky rhythms, the tremendously high standard of musicianship, the snappy hooks and the slightly left-field lyrics that sketch vivid portraits of people, places and emotions. Besides being a superb and versatile guitarist, Paul Barrere has also become the true voice of the band, with a bluesy delivery that at once recalls Lowell George but also has its own personality.

Meanwhile, keyboardist Bill Payne continues to anchor many of the group's most interesting tunes: "Corazones Y Sombras" is an evocative, multitextured *Tejano* masterpiece; "Stomp" is a driving, jam-filled instrumental that sounds like the Little Feat equivalent of the Butterfield Blues Band's "East West"; and "Fighting the Mosquito Wars" goes from a swampy blues riff to a raga-rock break and then back again with amazing fluidity. Beautifully recorded and featuring a wonderful blend of acoustic and electric tunes, plenty of room for the musicians to stretch out and a down-home feel that comes from years of honing their distinctive (yet broad) oeuvre, *Kickin' It At the Barn* stands with the best Feat of any era.

Producers: Paul Barrere, Bill Payne, Fred Tackett. Engineer: Gilberto Morales. Studios: The Barn, Love Tribe Studios (both in Southern California). Mastering: Bernie Becker.

—Blair Jackson

Louise Hoffsten: *Knackebrod Blues* (Memphis International)

Sweden doesn't seem like a place where one would find a great blues album, but Louise Hoffsten's *Knackebrod Blues* is a very impressive, from-the-heart debut. Aided by a top-notch ensemble that plays raw, fret-rattling, gut-bucket blues, Hoffsten and company throw down a viscerally sensual set that mines the catalogs of Willie Dixon, Lightnin' Hopkins and John Lee Hooker, as well as her own solid material. "It Serves You Right to Suffer" lands squarely in between Jimi Hendrix's heavy blues and Led Zeppelin's "When the Levee Breaks," while the distant-sounding vocal treatment on the steamy "Baby Don't You Tear My Clothes" gives the performance an appropriately seedy quality. Other highlights include the rip-roaring opener, "The Seduction of Sweet Louise," the gritty testifying of "God Don't Ever Change" and the thunderously agitated "I Pity the Fool." Fans of artists like Stevie Ray Vaughan, Lou Ann Barton and Bonnie Raitt would do well to check this out.

Producer: Louise Hoffsten. Engineer: Roger Krieg. Studio: Park Studios (Stockholm). Mastering: Classe Persson and Brad Blackwood at Ardent Studios (Memphis). *—Rick Clark* ■

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L.A. GRAPEVINE

by Maureen Droney

Musikvergnuegen: That's German for "enjoyment of music," according to composer Walter Werzowa, who, along with his company of that name (www.musikvergnuegen.com), has become a leading expert in communication through music. Werzowa, a star in the field of mnemonics, shot to the top of the game in 1994 when he created the five-note, three-second theme for "Intel Inside." Since then, Werzowa's gone on to compose and do sound design for a bunch of other things: film trailers (*The Last Samurai*, *A.I.*, *Spiderman*), commercials (Nike, Budweiser, Microsoft, Mastercard, Expedia), audio "logos" (IBM, Sony, Lifetime, Comedy Central) and much, much more, including feature film scores and/or partial scores.

PHOTO: MAUREEN DRONEY

The composer and owner of L.A.'s Musikvergnuegen, Walter Werzowa (pictured in his studio)

And although Musikvergnuegen's spacious, loft-like Hollywood headquarters are prosperously furnished with European antiques and trendy modern icons, Werzowa's beginnings were humble enough that he took out a loan to purchase his first Roland Jupiter 8 synth.

Originally trained in classical guitar, he left-turned into techno pop, garnering a Number One Euro hit with the band Edelweiss and their novelty title, "Bring Me Edelweiss." After that came film music and commercials, but, as he says, "Austria is very small." The U.S. and studies in film scoring at USC beckoned and then a big break: scoring film trailers for Disney, which "I didn't take seriously at first. To apply for the job, I sent a tape where I talked about Austria with sound effects and cowbells and yodeling. But they called me up and I got the job."

Making movie trailers, of course, is prime education to communicate lots of information in very little time. Werzowa took to the task like a natural: "It was the best school ever. There was a time when I'd go to a movie theater and see four trailers I'd done!"

Werzowa claims he didn't take the Intel assignment seriously at first either. "I'd become friends with Kyle Cooper and Garson Yu, amazing visual designers. One Friday, Kyle called and said, 'We've got this little project, three seconds long. It's the Pentium thing.' Back then, I only used Mac, so I had no clue what Pentium was or what a mnemonic was. He showed me the storyboards. Three seconds of music? That felt like a joke: 'Who wants to have something like this?'"

At first, everything Werzowa tried sounded "a little stupid or at least inappropriate and cut off." But he dug in for the weekend. "Friday," he says, "nothing. Saturday—nothing. Sunday, I started to freak out. No melody felt

—*CONTINUED ON PAGE 150*

NASHVILLE SKYLINE

by Rick Clark

During the past couple of years, I've covered Music Row, Cool Springs, Franklin, Leiper's Fork and other places, but I've never addressed a state of mind called East Nashville. So this and next month, I'm catching up on a place that is vital and producing work that really matters: my neighborhood.

East Nashville inspires a lot of extreme reactions from locals. Depending on whom you talk to, it is either the coolest shamble of Victorians, bungalows and Section 8 housing populated by all sorts of artisans and bohemians, or it's a possibly dangerous place with druggies, knuckle-dragging ne'r-do-wells and a few idealistic liberals with no common sense thrown in for good measure.

I haven't been held up at gunpoint since I lived in my Memphis hometown. That East Nashville reminded me of home was more due to the vibe-y cultural mix and that most of my Memphis buddies moved here than the attraction to living dangerously.

There are at least two dozen musicians, songwriters and artists and four active home studios on my street alone. Expanded to the whole neighborhood, I would probably have a few hundred creative types and a few dozen respectable recording enterprises. The legendary Woodland Studios building a few blocks away might as well be a home studio: It is now owned by Gillian Welch and Dave Rawlings and used for their projects.

Creativity is everywhere here and people are making music and putting it out. Even the guy who mows my yard has an album out and it's good stuff. My next-door neighbor, Mark "Sergio" Webb, is a fine guitarist and songwriter who plays the Grand Ole Opry periodically and has toured everywhere—when he's not working on his house. All sorts of characters (like Gram Parsons and Emmylou Harris' larger-than-life road manager Phil "Mangler" Kaufman) drop by and stay. Recently, Webb rounded up engineer Thomm Jutz for a solo project. He called me to play bass in a rhythm section that included former Waterboys and Nanci Griffith drummer Fran Breen. It was a great time.

NEW YORK METRO

by David Weiss

In the heat of a project—in between songwriting and the final mix—artists and producers put the delivery system for their work on the back burner. But as the final stop in the production chain, the decision of who's going to design and replicate the CD/DVD package can have considerable influence over the success of a project, and in always style-conscious New York City, the choices are expanding.

PHOTO: HOWARD SHERMAN

Play-It Productions' Tony Tyler (right) and VP of technical services Harry Hirsch in the company's mastering suite

A few blocks from my house is Eric McConnell's place. McConnell's a fine musician and people come to his home studio because they like the way he records music. McConnell likes his 1-inch 8-track analog Otari machine and a Sound Workshop Series 30-X console, and so does White Stripes' Jack White, who produced Loretta Lynn's new album, *Van Lear Rose* there. "Jack was a hard-working guy," says McConnell. "The band and the drummer were great. We worked for around 10 days here and then I brought my 8-track to Memphis and we mixed it at Easley Recording."

McConnell was also working with Brandon Henegar on mixes for Tony Joe White's next album, *Heroines*, which features duets with Emmylou Harris, Jesse Colter, Lucinda Williams, Shelby Lynne and Michelle White. It was classic, earthy White stuff. Recently, Greg Garing cut an album live at McConnell's studio. "It's great," says McConnell. "We didn't use headphones and he had a great band."

Any idiosyncratic neighborhood worth its salt has got to have its characters, and Skip Litz, who ran sound at the Radio Café before he passed away last summer, was one of East Nashville's best. The Radio Café featured some of the finest talent to grace Nashville, and Litz, was its soul and the personification of this neighborhood's great heart. Besides exhibiting a generosity of spirit, he was a funny guy. A show at the Radio Café, or any place

—CONTINUED ON PAGE 151

Play-It Productions (www.play-itproductions.net) is capitalizing on the city's creative and highly productive pulse. A CD/DVD duplication, replication and graphics house structured to accommodate the needs of bands burning a couple hundred of their demos, Fortune 500 companies and CD-ROM presentations or major labels rushing a single to the street, Play-It has seen projects of every stripe. According to company principal Tony Tyler, what can help the ultimate quality of an audio project is by planning media copying and design with the same level of care that goes into picking the recording studio.

"People should really be thinking about it from the inception," Tyler notes. "Sometimes, people come to us when they've finished all of their recording and really have an idea of what they want but it's with the leftovers, so to speak. But you have to plan for every stage of a project."

While the core of its services is CD/DVD-offering in-house duplication (burning small runs of premanufactured discs with a laser) and outsourced replication (pressing a larger run of discs from a glass master), the company gives content producers the ability to handle every aspect after the audio mix in one place. A new audio mastering suite, video compression, DVD authoring, CD-ROM programming, Web design, multimedia graphics department and rights and licensing advice are all part of a comprehensive approach. "I tell people to think of us as their production department," she says. "If you're a big label, you have a production department that clears all your samples and takes care of copy-protection issue, but most people don't have that team. We're not just ones and zeros making little plastic discs, we're a resource.

"Where the business is changing is in finding more creative uses for these products. We talk to our customers about using the real estate of the CD not just for a 12-track record," Tyler continues. "An enhanced CD with a video clip, a photo gallery and a launch to a Website is incredible bang for the buck."

Online distribution is obviously taking a bite, and while the dropping price of blank media has allowed Tyler to pass the savings on to customers, it's also part of an ever-growing home-burning equation that has turned many customers into competitors. "We answer that by offering something different," she concludes, "a reason not to do

—CONTINUED ON PAGE 151

PHOTO: RICK CLARK

East Nashville's Mark "Sergio" Webb recording renegade sounds

SESSIONS & STUDIO NEWS

NORTHEAST

To the delight of The Darkness' Philadelphia fans, Indre Studios (Philadelphia) brought in the Brit group for a sold-out show. The group covered songs from their debut album, *Permission to Land*. The session was recorded by Michael Comstock and assisted by Pete Girgenti, who were also behind the desk for a remote recording session with R&B artist Joe, as he performed tracks from his Jive Records release, *And Then*...Hardcore rap artists MOP were the reason for a lockout of Studios A and B at The Cutting Room (NYC); Joe Nardone and Steve Schopp engineered, while Rock Logic and producer Will Fulton were on hand for the mixing session.....Gizmo Audio/Video (NYC) authored Carly Simon's *Live at Martha's Vineyard* DVD release, featuring 5.1 and enhanced 2.0 mixes.

SOUTHEAST

Nanci Griffith and Jimmy Buffett were in to record a duet for Griffith's upcoming release—due in the fall—at The Parlor Studio (Nashville). The song, "I Love This Town," was engineered by John Hurley and produced by Griffith and drummer Pat McInerney...Atlanta's ZAC Recording found Grammy™-winning producer/engineer Dave Fortman in its Stonehenge room to mix artist 12 Stones' upcoming release. Meanwhile, Upstairs Studios had Dropsonic in to track; the session was engineered by Dave Barbe, assisted by James Salter and Vic Stafford.

Late Night With David Letterman *bandleader Paul Schaffer (right) was in to work with Threshold Sound + Vision's (West L.A.) Peter Barker during a recent visit.*

Banjo player Béla Fleck and bassist Edgar Meyer hang out between sessions at Gateway Mastering & DVD (Portland, Maine). Pictured from left: Meyer, Fleck, Adam Ayan (mastering) and tour manager Richard Battaglia

MIDWEST

Oarfin Records (Minneapolis) hosted will.i.am and Fergie of the Black Eyed Peas for their contribution to Sting's single, "Whenever I Say Your Name"; the session was produced by will.i.am and engineered by Todd Fitzgerald...At The Pop Machine (Indianapolis) was '80s pop icon Tiffany, who worked on her new album with Eric Klee Johnson, Joey Fingers and producer Marc Johnson.

NORTHWEST

Palo Alto, CA-based producer/engineer/mixer Adam Rossi worked with singer/songwriter Monica Marquis, completing her debut, *This Is Me*; the project was mastered at The Plant (Sausalito, CA) by John Cuniberti; Rossi picked up co-producing, recording and engineering credits...Seattle's Elliott Bay Recording Company was host to rockabilly band The Dusty 45s, who were in recording a follow-up to their debut, *Shackin' Up*. Scott Ross engineered and co-produced.

SOUTHWEST

WexTrax Mastering Labs (McKinney, TX) had singer Josh Kelly (Hollywood Records) in to record vocals for an upcoming Disney release...Making time to track a new song during their nationwide tour, The Mosquitos, a New York City–based bossa nova/pop trio were in at SugarHill Studios (Houston). Sugar Hill staffer Tim Wehrle and The Mosquitos' Jon Marshall Smith shared engineering duties on this effort.

SOUTHERN CALIFORNIA

Up-and-coming pop and R&B artist De'Sha was in tracking vocals for his album, *For U*; engineer David Henszey manned the board at Cups 'N Strings Studios (Santa Monica)...Nick Lachey and Jessica Simpson were in at Westlake Audio (L.A.) covering the *Aladdin* song "A Whole New World" to mark the tenth anniversary of the film's release. The session was produced by Walter A, engineered by Humberto Gatica and mixed in 5.1. Meanwhile, Sting was in Studio C remixing "Stolen Car," a track from the 2003 *Sacred Song*. The session was produced by Doc, and assisted by Aaron Fessel...Bad Religion was in at Sound City (Van Nuys) tracking and overdubbing their second release in 2004, *The Empire Strikes First* (Epitaph). Brett Gurewitz produced, while Joe Barresi engineered with assistance from Pete Martinez. The newly reunited Pixies were in Studio B working on their contribution for the *Shrek 2* soundtrack; the session was produced by Charles Thompson, engineered by Ben Mumphrey and assisted by Miles Wilson. ■

Send your session news to blingle@primediabusiness.com. High-resolution photos encouraged!

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In addition to the many demos, Q&As and workshops, a few special guests will be dropping by: **Ming + FS** (Spun Records), **Junior Sanchez** (M-Audio), **Grandmaster Flash** (Event Electronics), GRAMMY® Award Winner **Peter Rauhofer** (Star 69 Records), **Handsome Boy Modeling School featuring Dan the Automator and Prince Paul**, **Jazzy Jay** (Digidesign), **Grandmixer DXT** (Digidesign), **DJ Scratch** (Digidesign) and **Djinji Brown** (R2)—and the list keeps growing! Keep checking http://nyc.remixhotel.com for updates.

There is no cost to attend the Remix Hotel.
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L.A. GRAPEVINE FROM PAGE 146

right. I had to find a different angle. It had to be accessible and—in a good way—generic. 'Intel Inside' is four syllables, so four notes. And it's the fourth and the fifth that are the most common intervals in every culture. I put them together with a little divider note—a 'clink'—at the beginning and played it for Kyle. We presented it to Intel and they loved the idea." (Actually, there are more than 20 sounds in the first tone alone, including tambourine, anvil and electric spark.)

The project changed Werzowa's life by vaulting him into commercial prominence and changed his thinking about music and its purposes. "It started to be very conceptual for me," he explains. "It's not about a melody or about a sound. It's about why do you need that melody or sound?"

Tools Werzowa relies upon include Logic Audio, Pro Tools and a Mackie HUI console. Recently, he deleted most of his huge collection of hardware synths from his studio. "I'm trying to force myself to play more guitar," he says. "Right now, all the soft synths are so challenging. Logic and the plug-ins are immense like Reacktor and Vokator and the Native Instruments and Waves packages. The challenge is to use it all wisely. When Bach played piano, it was a new instrument. What he played on it, it still sounded like organ music. It took a couple hundred years to really learn to write for it. In the same way, I don't think anybody's really hit the aesthetics of synthesizers yet. We have the tools, but we don't play them like they're unique. I think it will help us make new music out of these new surfaces."

The bustling Musikvergnuegen now boasts a staff of nine, including two additional full-time composers: John Luker and Justin Burnett. Each composer's studio is tied to a central studio bau:ton–designed recording space, with antique and modern instruments to record music and sound effects.

PHOTO: MAUREEN DRONEY

Dino Maddalone in his evolving studio: DinoM4

Werzowa also keeps his hand in the classical world, teaching music to design students at the Pasadena Arts Center and composing for ballet and opera. "A lot of people are afraid of being commercial," he reflects. "Not being taken seriously because you're on the charts doesn't make any sense to me. After all, Mozart or The Beatles were commercial! I think it's great."

The accolades were frequent and intriguing from artists in all sorts of genres, mastering people, label owners, equipment manufacturers and educators. It was time to take a trip to Torrance for a visit to DinoM4 (www.DinoM3.com), the studio owned by record producer/drummer/engineer/composer/arranger Dino Maddalone.

In business for 17 years, Maddalone recently upgraded his 2,000-square-foot facility by adding a Pro Tools|HD 3 Accel system to complement its analog recording setup and custom Malcolm Toft–designed console. "It's the fourth incarnation of the studio," he notes. "I decided to change the name from DinoM3 to DinoM4 to let people know things were different."

Most of us wear a lot of hats these days, but Maddalone has made a real art of the process. There's something unusual about a guy who's accumulated Dove Awards for his

work with Christian rock acts, a BET Award for a jazz album and nods from *HM* magazine for Favorite Producer and Favorite Album for a hip hop/hard rock project. Then there's that win for just plain old Best Producer from the Los Angeles Music Awards.

"I've been playing music since I was 10," Maddalone explains, "and I started working professionally at 16, playing drums and percussion. Really, I've been gigging for 20 years. Back then, you had to play your ass off to make a living. If you weren't touring with someone, you were in clubs six nights a week, five sets a night."

A lot of great producers have also been drummers. "Drummers are in the perfect position to see how things work. After a certain amount of years, you don't have to think about it. But you're sitting there in the middle of the band and you're always watching. For me, that's carried over into producing. A record is like a four-minute movie: You've got to communicate emotion or you've lost the audience."

Maddalone remains in demand as a drummer. Those who book his studio often also book him to play on their tracks or arrange/produce. "When Pro Tools first came out, everybody got one and went to the garage or bedroom to make music. Some of it was good, but there was a large amount of crap. Many people are realizing that they really can't do it all on their own. They need to work with someone who, musically and production-wise, understands arrangements, parts, emotion and performance.

"People are eager to cut drums in a live room. We've got Reason in the computer with every drum set in the world. It's great, but we've also got a lot of people coming in to record live drums with a live feel."

He also teaches engineering and mentors for the AMA (Apprentice Mentor Association), in addition to doing session work as a drummer and composing for film and television, including cues for *The Price Is Right*. "I have a lot of material, I write quickly and I work with some of the best musicians in the area," he comments. "I enjoy working on different styles of music; there's nothing I don't like. It's the music that keeps me in the business." ■

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

NASHVILLE SKYLINE *FROM PAGE 147*

for that matter, wasn't complete without Litz bellowing out, "Play a f***in' train song!" Performers would often oblige, and those who didn't have one learned or wrote one for him. He was known everywhere for that: Even a bartender at the Radio sported a tattoo with a representation of Litz uttering his request.

I talked about Litz with Todd Snider, a songwriter and artist who I've known since we both lived in Memphis years ago. "Skip was my last tour manager and it was the last six months of his life. He had a ball," says Snider. "He was funny and I loved him. He is how everybody knows everybody in the neighborhood."

Snider paid tribute to Litz with a song called "Play Another Train Song," which is coming out on his upcoming album, fittingly entitled *East Nashville Skyline*. It was produced by journeyman singer/songwriter and ace guitarist Will Kimbrough. The album is coming out on John Prine's Oh Boy record label.

McConnell notes with a laugh, "When Todd Snider's manager called, he said, 'Todd wants to record at your place 'cause it's close to his house.' The reason we got Brandon [Henegar] here is 'cause he lives two blocks away."

"If I oversleep, they can come get me," says Henegar, who also has a studio and plays in a hard pop/rock band called The Taste, whose music has been licensed to MTV for a couple of shows.

Among the songs on the album are Snider's "Age Like Wine" (an ode to surviving himself), the acerbic "Conservative Christian Right Wing Republican Straight White American Male" (a waltz), Fred Eaglesmith's "Alcohol and Pills" and Billy Joe Shaver's "Good News Blues."

"All of the songs on the album are about me or my neighborhood," Snider says. "It's kind of about being a musician on the side of town that isn't rich and isn't really concerned with it. I love that about this place. Billy Joe Shaver would live here if he lived in Nashville." The "Renegade East Nashville Sound," as it was once called in a magazine, is spiritually a lot like Memphis; a litle too willful for those used to dealing with talent that is all too eager to sell its soul for a moment of fame. Then again, some great things can happen in that kind of environment. "Skip used to say, 'We don't don't cross the river for free,'" says Todd.

When I asked McConnell about Snider's album, he said, "Todd's record is very cool, laid-back and raw. Then again, everything we do here is a little raw." And so is East Nashville. ■

Send your Nashville news to MrBlurge@mac.com.

NEW YORK METRO *FROM PAGE 147*

it at home or in-house. We need to do a good job of making ourselves invaluable."

A few blocks away at NYDVD (www.NewYorkdvd.com), the focus is squarely on the wonders of the digital versatile disc. "I've always gravitated toward the role of producer," explains Brian Brodeur, NYDVD founder, on establishing his company back in 2001. "DVD has always been thought of as the truer multimedia format, and my skill set as a musician lends itself to developing creative products. The advent of DVD and its obvious embrace by the consumer is an important point, not only for the large institutional companies, but also producers like me."

Brodeur's company, which is located within the large Manhattan Center Productions facility, focuses its services—DVD project management, encoding/authoring, static and motion menu design, and audio/video production—around two full-blown Sonic Solutions DVD Creator systems. "Those are desktop systems, but because of my background, I have them set up much like recording studios," he says. "Manhattan Center is a perfect fit for us, with three complete Avid editing systems and two Neve VR recording rooms with surround capabilities.

PHOTO: RICK CLARK

***Pictured from left: producer Jody White, Eric McConnell and Brandon Henegar working on the new Tony Joe White album,* Heroines**

We are in a great position to provide DVD services to Manhattan Center."

NYDVD can see how music in particular is relating to DVD. "There's basically two products out there that are serving the music industry: the concert product and the bonus/behind-the-scenes product," Brodeur says. "Independent artists are going to start embracing DVD because of its enormous power as a promotional tool and ability to deliver a wide variety of content, including multichannel audio and multilanguage capabilities. We've developed some wonderful surround mixes for the Dave Weckl Band and Steve Gadd, where we actually mix the band around the listener as if you were the

drummer. There's been no increase yet in DVD-A. That's a function of the format wars and the installed base of players."

DVD facilities have their own challenges with production increasingly available to in-house and home users. "People can spend very little money and have functional DVD systems—it's only natural," he continues. "We've begun shifting our business toward a service side, providing superior design and extensive quality control: making sure that discs are functionally compliant and error-free. NYDVD is not competing with the entry-level DVD producer who just hangs a shingle—we're collaborating with clients to create content specifically for DVD."

One of the most experienced replicators in the New York City region is Disc Makers (www.discmakers.com), which has been in operation since starting out as The Ballen Record Company in 1946. Today, the company creates CDs and DVDs and delivers for its clients by doing everything—including the complicated replication process—under one massive roof in its Pennsauken, N.J., headquarters. "Our customer base is mostly indie artists, and we have a lot of recording studios that either send us the work or do it on behalf of their clients," says Tony Van Veen, Disc Maker's VP of sales and marketing.

Able to manufacture up to 70,000 discs in 24 hours, Disc Makers has not seen its capacity go to waste, even with the music industry's recent troubles. "We see audio CD replication growing," he reports. "There is a vibrant indie music market. Since we don't do any major-label work, we're not affected by the slump in retail sales by those releases."

PHOTO ANDREW LEPLEY

Brian Brodeur founded NYDVD to offer a product beyond standard DVD replication.

Working on a massive scale carries its own benefits and pitfalls. "The main advantage of this scale is the capability to do it all ourselves, have the quality and control the costs," he says. "We don't lose two days shipping film to some firm in Wisconsin and ditto with the replicated discs. Musicians and filmmakers' projects tend to run behind schedule, so however late in the process, you can help them get to market faster and recoup their investment more quickly. The main problem we have is the perception that we're a large company, so any particular project we have is not on the radar. The fact is, we're set up to manage a small indie project.

"Replication is the final step of the production chain and then the hard work starts: getting product to market, promotions, distribution, airplay and selling. If you think the recording and replication processes are complex, wait until you have your disc in your hand and start to think, 'Now what?'" ■

Send your Metro news to david@duvords.com.

—FROM PAGE 26, I CAN SEE FOR MILES

3. Expression. There is simply *no* way you can play a convincing piano with little 3-gram plastic keys. Good weighted keys are a must if you want any dynamic range and expressive control at all. Here we are lucky: All three of the current contenders have pretty good semi-weighted hammer-style keyboard options. Each very different, but each usable.

But these mechanisms are *very* expensive to make, and money has to be saved elsewhere to keep pricing competitive.

And, of course, synthesizing or playing sampled nonkeyboard instruments like sax or flute pretty much forces you to learn specific unnatural acts, and Yamaha does have its ancient but nonetheless incredible breath controller. And light plastic keys are actually better for organs. It's never easy.

HAVE THEY KEYED OUR CARS AGAIN?

For me, there is another bummer. Remember that my goal is the creation and recording of "real" fake instruments. And if your new virtual facility is going to cover a wide spectrum of music, you will need real fake, too.

Unfortunately, 75 percent of the voices in these keys are lush, layered clichés, nasty distorted noise or "popular" analog synth sounds.

I certainly understand why they are loaded with these rap scratches, dance loops, crunchy, brittle lo-fi noises, broken drums, and pads, pads and pads. That's what the target customer wants.

But it makes them inefficient solutions for me. I use less than 15 percent of what they offer in my work. Oh, well. I guess not being mainstream means that you don't get to play in the main part of the stream.

But hardware-wise, these are your choices. As limited as they were, pro studio keyboards and sound modules are apparently a thing of the past. Everything is performance-oriented now.

Today's money is clearly where the rock stars are—onstage or in your bedroom—and today's electronic instruments reflect that. This makes them a lot of fun (with one notable exception) and great for immediate gratification but, as dictated by economic realities, somewhat limited sonically.

SONGS IN THE KEYS OF LIFE

With all that in mind, I set off to find the best there is. My hope was that there would be something out there that can be that first line—the thing you reach for first when you walk in, the safety net that catches your ideas as they are born.

And there *is*.

After a year of looking (and every one I found going through a profound upgrade as next year's models came out), three emerged as clearly superior. The state of the art in sampler/synth/"workstation"/multitrack composer/editors. The best.

Don't let this description put you off. Two of the three are actually pretty easy to learn and use and offer a viable solution to capturing fleeting ideas and arrangements.

I have now spent several months with these keyboards and have amassed flagrantly opinionated observations and conclusions.

So what are the top keyboards for your wonderful new virtual studio (and, yes, for live performance)? The Yamaha Motif ES, the Roland Fantom X and, perhaps surprisingly for many of you, the Korg Triton Extreme.

But which is *the best*? Well, to find out, please tune in next month. Same bit channel, same bit time. I promise you a hardcore comparison that you won't find anywhere else *because* you can't find it anywhere else. See you then. ■

SSC says he is covering "MI" because it is now forever married to "pro." They have converged.

—FROM PAGE 30, ALONE AGAIN, VIRTUALLY

Nuendo and Digital Performer have made entry into the world of high-end production a lot easier. To take advantage of what these products have to offer, you no longer have to know how to handle a soldering iron, or which end of an electrolytic capacitor is which, or even how to gain-stage a mixer to keep the signal comfortably between the noise and the distortion. But the fact is, the greatest tools in the world are no good if you don't know how to use them. And what you do have to know, and which no computer by itself can teach you, is music.

If you don't know how a guitar is played, you can't possibly take advantage of even the greatest virtual guitar software. If you've never sat in a horn section, or at least written music for one and heard it played by real players, then you can't do a convincing simulation of one with a keyboard, no matter how brilliant the samples are under your fingers. And if you don't play the piano and have never learned about dynamics, phrasing and pedaling, any piano track you come up with is likely to be mechanical and boring.

Learning how to work with music without knowing about music itself is extremely difficult and no fun. In traditional college recording programs, teachers all agree that it's generally much easier to teach engineering and studio techniques to a musician than it is to teach music to an engineer. Unless you're planning to give up all originality and spend the rest of your musical career using other people's samples and loops (yes, I know there are such people and I feel very sorry for them), you have to know how music is made, played and structured. And the best way to know that is to be a player.

With not many exceptions, the folks who are behind the records that make the top of the charts, who will be remembered after they drop off the charts and who win Grammy® and TEC Awards, have a real grounding in real music. Superhot rap producers The Neptunes met in a high school band class. Shania Twain didn't learn how to sing from a machine. Bob Clearmountain and Bruce Swedien were both into electronics and recording at a very early age, but Clearmountain was also a bass player, and both of Swedien's parents were professional musicians, so he grew up surrounded by the Minneapolis Symphony. Nile Rodgers is one of the greatest all-around producers in history, but before that, he was a killer guitar player. Meredith Brooks started playing guitar at the age of 11 and worked hard in bands for 25 years before she made *Blurring the Edges*, the first album on which she sang and played everything. And me? I played 11 different instruments in high school, some of them not too badly, in rock bands, folk groups, jazz combos, stage bands, orchestras, chamber groups and percussion ensembles. When I lay down a saxophone line, whether it's on my VL1 or in Reason, I not only know what a saxophone is supposed to sound like, I know what it *feels* like.

On the other side of the coin, while the one-person studio has been so empowering for people like me, something has been lost. When I used to play in bands, as annoying and frustrating as I often found my bandmates, I never ran out of ideas. There was always something else somebody wanted to try. Nowadays, working by myself, composer's block seems like a constant threat. If I don't at least get out of my studio occasionally to see how someone else responds to what I'm creating, I can feel the creative juices drying up. If I don't play with other musicians at least once in awhile—and it hardly matters whether I'm playing Dave Brubeck, Neil Young or four-hand piano ar-

rangments of Mendelssohn symphonies—I feel like what I'm doing lacks context and my muse gets lethargic. That recharging I get from interacting with other musicians, even if it's just a few times a year, is critical.

More than other musicians, though, it's the audience we need. When I was a kid, I saw a terrific stage show performed by the great actress Mary Martin called *It Takes Three to Make Music*, the premise of which was that someone has to write it, someone else has to play it and someone has to listen to it. (The recording of this show won a Grammy in 1959, but you can't get it on CD.) Of course, that equation has been slimmed down a bit in the intervening years, now that so many of us are taking care of the entire composition and performance chain. But we still need someone to listen to what we do or it isn't music.

As I write this, an interesting event is unfolding in Vienna called Internethausmusik. It's a performance project, sponsored by companies like IBM and Telekom Austria, in which 23 classical musicians sit in their apartments and "phone in" their parts (over Telekom DSL lines, of course) to a theater downtown, where a "conductor" mixes the parts and streams the result to the world. The musicians, the conductor and the audience are never in the same place at the same time.

The music that's being played is designed specifically for this occasion, and in that context, it may work pretty well. But the publicity surrounding the event is hinting strongly that this might be a wave of the future: Instead of dealing with large, expensive concert halls where musicians meet to play, we can have them all sit at home with cheap microphones and Internet hookups playing their parts individually, leaving it up to a central conductor/engineer to make it all come together.

Of course, it's ridiculous to apply this concept to any kind of traditional music for any number of reasons. First is timing. For musicians to make sense out of their ensemble, they have to hear each other in real time or be playing against pre-recorded tracks that they can lock up to. But even the fastest Internet connection is going to have enough latency—what with codecs, packet-switching and repeaters—to make it impossible for the musicians to hear each other in any way that they can possibly relate to.

A second reason is that there are no extra aural cues. Musicians constantly play off of each other visually, using facial gestures, eye contact, hand signals, and limb and body movements, both conscious and unconscious. It's why drum booths have windows. Cutting players—especially classical players—off from each other's sight completely would require a pretty major re-adjustment on everyone's part.

But perhaps the most serious problem with creating this kind of bodiless music is that it insulates the musicians from their audience. The vast majority of us do this music thing because we want to communicate with people. We have ideas, emotions and concepts that we want to get across. Isolation, whether it's sitting in front of a computer putting together beats and tracks and sending them out to faceless CD buyers, or playing into a glorified telephone along with others, whom you can't hear, to an invisible Internet audience, is antithetical to what music is supposed to be about. Without each other and our audiences, we might as well be staring into a mirror 24 hours a day. Some narcissistic types might find that fascinating for a little while, but for most of us, it gets pretty old, pretty fast. Maybe you *can* have it all—but it doesn't mean anything if you don't share it. ■

As a child, Paul Lehrman was never warned not to play with himself and just look what it led to.

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BY BLAKE MORGAN

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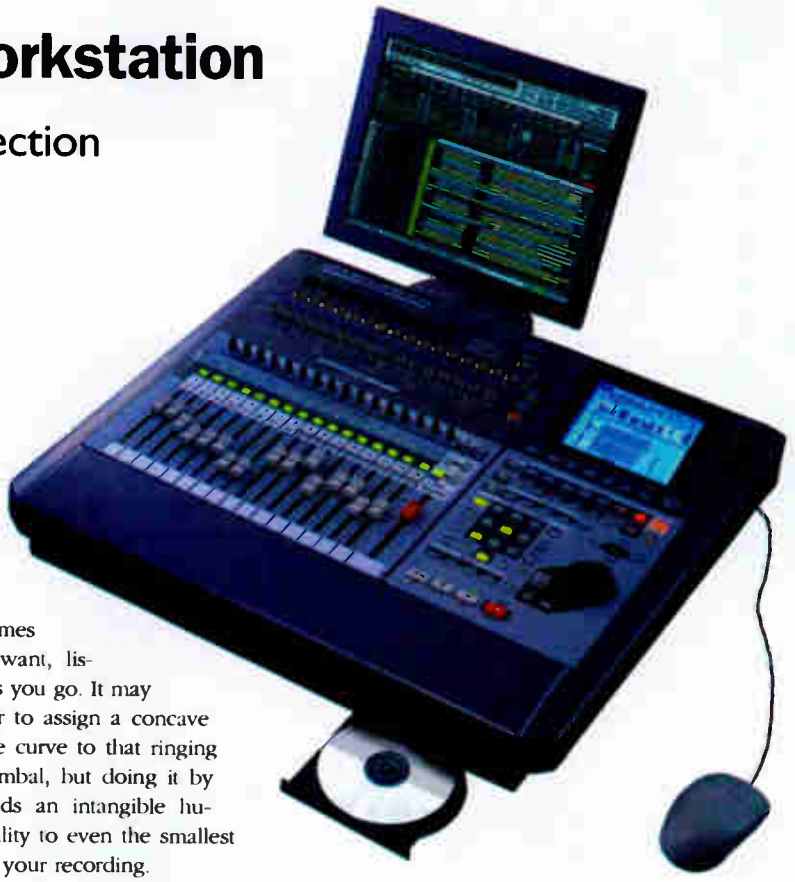


As I write this, I'm amid a whirl of preparations surrounding the release of my new album, *Burning Daylight*, recorded almost entirely on the Roland VS-2480 workstation. Working with legendary producer Phil "Butcher Bros." Nicolo, we tracked the drums to 2-inch, made a digital slave and then tracked the rest of the album on the 2480. Later, we married my finished tracks back to the original drums on the 2-inch and mixed from there. The result has been phenomenal, giving me a unique opportunity to talk about using this tool to bridge the analog and digital worlds.

TEACHING YOUR EYES TO HEAR

On a recent live record that I produced, capturing the spirit of the performance was everything. However, in couple of spots, I wanted to fix the lead vocal without compromising the energy of the take. So back in the studio, I used the real-time analyzer on the 2480 to match the frequency response from the microphone that was used the night of the show to the microphone we would be using for fixes. Because the 2480's analyzer accurately combined what I was hearing and seeing (especially looking in the 1.8k to 2.6k range), I was able to equalize to a point where we could punch the offending moments without any risk of them suddenly popping out of the track. Successfully tucking those spots back into the ambience of the room mics gave the entire vocal a natural body.

REMEMBER THE INTERFACE, FORGET THE MOUSE

I'm constantly trying to avoid the sterility and coldness that digital recording unvaryingly supplies by employing analog techniques even when I'm working exclusively in a digital medium. I need faders. I need buttons. I want to interact with the music I'm making, using something other than a mouse. The 2480 supplies 17 motorized faders and assignable knobs, so take advantage of the interface and try using the 2480 like an actual mixing board. If you need to ride the lead vocal, then do it by hand. The 2480's Automix mode is nondestructive, so you can re-take your moves as many times as you want, listening as you go. It may be easier to assign a concave auto-fade curve to that ringing crash cymbal, but doing it by hand adds an intangible human quality to even the smallest facets of your recording.

AN EXTRA TWO CENTS (OR 15) LETS YOU KEEP THE CHANGE

What could have more character than the sound of an old toy piano that's been in your attic for 20 years? Certainly not the MIDI-triggered sample you were about to use. The problem is that the sample is perfectly in tune, while the real thing varies its tuning from note to note. Time for a handy insert-and-effect trick to preserve the character of the instrument while solving the pitchy-ness.

On input, insert one of the 2480's many vocal multipatches. Scroll over to the pitch-shifter parameter and turn off the other parameters. Turn the direct signal down to zero and turn the effected signal up to full. You now have a finely tuned pitch-shifter that you can manipulate in real time. Hold down the Shift button while dialing the jog wheel; you'll be shocked at how accurately it fixes that B-flat that's 15 cents more out of tune than the rest. By doing this as you track the part, the musician hears the instrument in tune and can focus on the performance, which is where the real magic happens.

ONE OF MY PET SOUNDS: MONO

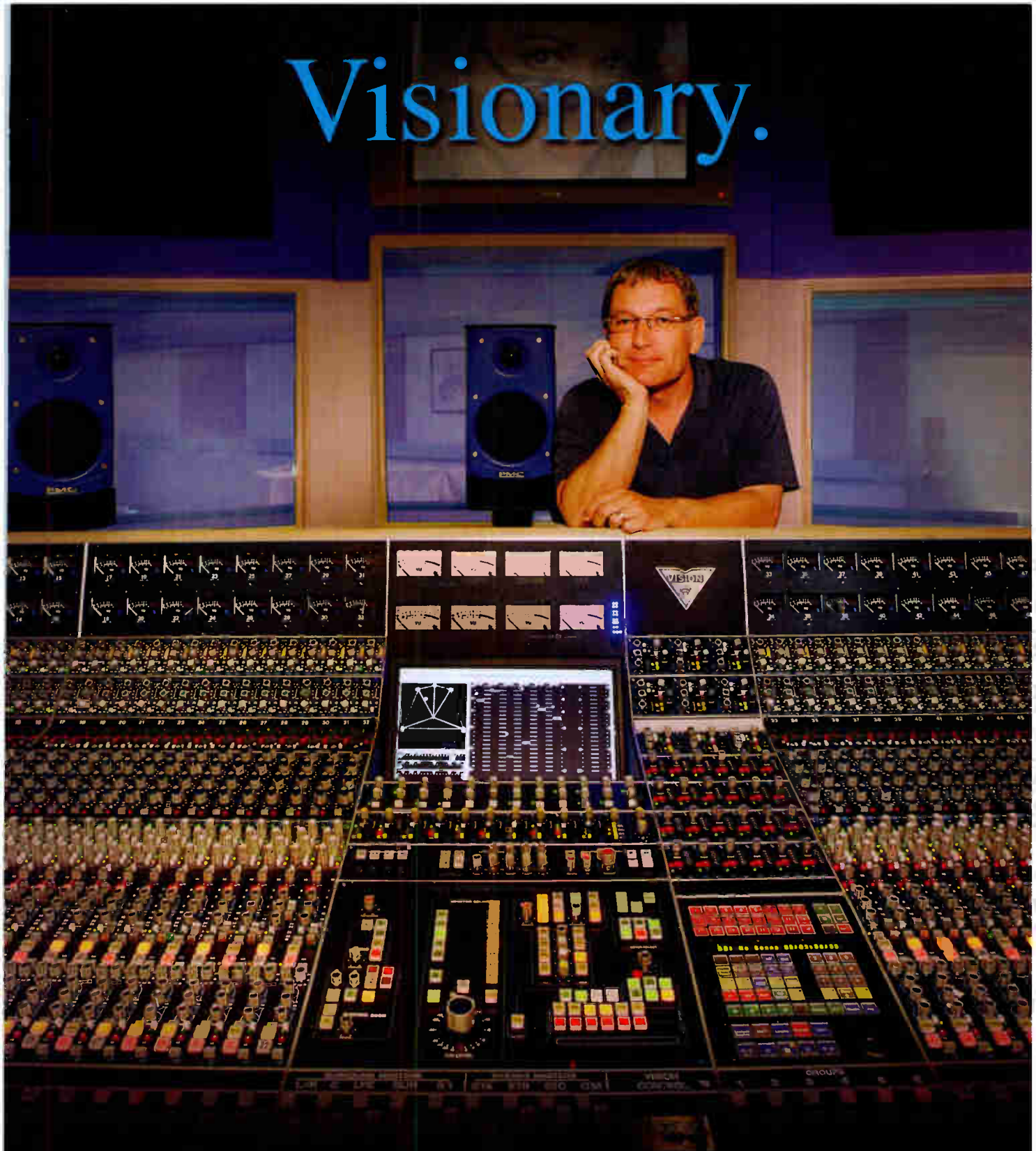
Brian Wilson was on to something. One of the easiest things you can do to give your 2480 recordings real depth in stereo is to use some of its features in mono. Start with one of the provided tape delay presets, make the slapback long, but with a short amount of repeats, and strap it into one of your stereo buses. Add as much distortion as the preset allows and then flip the switch on the bus to mono. Blend this with a nice, warm stereo reverb, and you'll find that the vocal (or anything else you try this on) suddenly has focus, but with an old-school fuzziness thanks to the mono-double the delay provides. For an even wilder effect, try the same thing with reverb and pan that right behind the signal source. Do this enough and you'll get elements fading off in different directions, which can make the overall mix sound even more stereo.

By using the same equipment everyone else has in ways no one else does, your music will sound more interesting and will stand apart. People are often surprised at my seemingly low-tech approach in such a high-tech medium, but in the end, the secret to making your music sound like music instead of a stream of ones and zeros is to treat it, well, like music.

MIX ONLINE EXTRAS

Blake Morgan is a recording artist, producer and owner/president of Engine Company Records (www.enginecompanyrecords.com).

Visionary.



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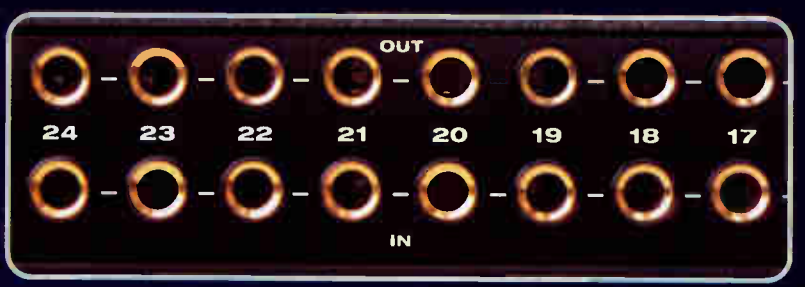

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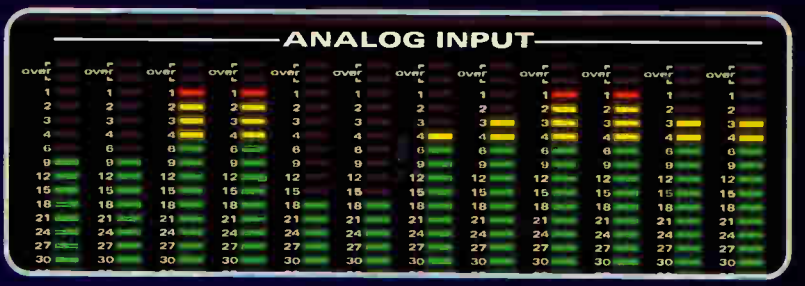

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